

Abstract

In one of his more famous *Reflexionen*, Kant wrote that the year 1769 gave him a “great light.” The first major publication to appear in the wake of Kant’s “great light” is the *Inaugural Dissertation*, a work in which he articulated some of his most characteristic doctrines for the very first time. Among these various doctrines, perhaps the most famous is Kant’s novel theory of time and space. In particular, there are two central claims which Kant attempts to establish about time and space in the *Dissertation*. First, that our representations of time and space are not empirical concepts acquired by abstraction from what is given by sensation, and second, that these representations do not belong to the faculty of intellect, but are instead fundamentally sensory.

The goal of the present dissertation is to provide a reconstruction and analysis of the arguments Kant advanced in support of these two claims. In order to lay the groundwork for my reconstruction, in the first two chapters I provide a detailed analysis of Kant’s account of the faculties of sense and intellect in the *Dissertation*, as well as a novel interpretation of what ultimately grounds the distinction between these two faculties. Against the standard interpretations—according to which the distinction between sense and intellect is grounded either on the difference between singular and general representations or on whether a representation is passively received or actively generated—I argue that in the *Dissertation* this distinction is ultimately grounded on the difference between those representations whose intentional content is abstract and those which are concrete. I show that this interpretation is not only supported by a considerable amount of textual evidence, but also that it has a great deal of explanatory power, and can resolve a number of apparent inconsistencies in ID. In the third chapter, I then show how each of Kant’s central claims about the representations of time and space are directed against an alternative account defended by Gottfried Leibniz and Christian Wolff, and I provide an exposition of this latter account in order to shed light on Kant’s overall aims and strategy. On the basis of the results obtained in the first three chapters, in the fourth chapter I then reconstruct the arguments Kant advanced to show that the representations of time and space are non-empirical, while the fifth chapter provides an interpretation of the arguments designed to show that these representations are fundamentally sensory rather than intellectual.

Space and Time in Kant's *Inaugural Dissertation*

Dante Dauksz

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Dedication

Mojej ukochanej babci Marii Bobuli, której mądrość i czystość serca nauczyły mnie więcej niż jakikolwiek filozof i której postępowanie w tym życiu jest wzorem dla wszystkich, dedykuję tę pracę z najgłębszą miłością i podziwem oraz z najgłębszą wdzięcznością za wszystko, co dla mnie zrobiłaś.

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Introduction

In one of his more famous *Reflexionen*, Kant writes that “the year 1769 gave me a great light.”¹ Ever since the discovery of this remark, the question of what this “great light” amounted to has been a matter of considerable scholarly dispute. Some commentators have maintained that the source of this great light was Kant’s discovery of the antinomies, as well as a new-found appreciation of their implications for the possibility of metaphysics. Others, appealing to Kant’s later admission that it was the recollection of Hume which finally awoke him from his dogmatic slumber and set him on the path to the *Critique*, have argued that it was Kant’s belated recognition of the implications of Hume’s analysis of causation which led to the great light of 1769. A further possibility which many commentators have found appealing is that it was Kant’s recognition of the need to rehabilitate the distinction between the faculties of sense and intellect (for one reason or another) which constituted the essential breakthrough. Whether any one of these proposals, or perhaps some other, is ultimately correct, the first major publication to appear in the wake of Kant’s “great light” is the *Inaugural Dissertation*,² a work which Kant composed over the course of the summer in 1770 so as to secure his position as the newly appointed chair of logic and metaphysics at the University of Königsberg. The *Inaugural Dissertation* is the first fruit of the great light of 1769, and it is not surprising, then, that in this work Kant articulates some of his most characteristic doctrines for the very first time, doctrines which he would continue to endorse, in some form or other, for the remainder of his life. Nearly every one of the proposals which has been identified as the source of Kant’s “great light”—the distinction between sense and intellect, the paradoxes of the continuum, etc.—are all discussed, in one way or another, in the *Dissertation*. Not only that, among the various doctrines which appear for the very first time in ID, perhaps the most important is Kant’s novel theory of time and space. The theory of time and space which Kant defends in the *Dissertation* is, to all appearances, identical to the one he would later present in the Transcendental Aesthetic of the *Critique of Pure Reason*. As in the Aesthetic, in the *Dissertation* there are two central claims which Kant attempts to establish about time and space: first, that they are not empirical concepts acquired by abstraction from what is given by sensation, and second, that although these representations are non-empirical, they are not, for that reason, concepts which belong to the intellect, for the mind’s representations of time and space are fundamentally *sensory*, rather than intellectual. Putting these two claims together, Kant concludes that time and space are pure intuitions, and, from this conclusion, he then infers a number of his other, most characteristic doctrines: that time and space are not objective and real,

¹ Ak 18:69, Refl. 5037. Citations to Kant’s works are by volume and page number of the Akademie edition of Kant’s *gesammelte Schriften* (Berlin, 1902–). All references to the *Critique of Pure Reason* follow the standard A/B pagination of the first and second editions. Unless otherwise noted, all translations are from the *Cambridge Edition of the Works of Immanuel Kant*, (Cambridge: Cambridge University Press, ed. Paul Guyer and Allen Wood, 1992). The volume and page number of the Akademie edition is cited in the margins of these translations. Citations to the *Inaugural Dissertation* (which I also occasionally refer to as “ID”) and the *Critique of Pure Reason* (alternatively “CPR”) will often appear in text, other times in footnotes.

² The official title of this work is *On the Form and Principles of the Sensible and the Intelligible World*, but I will refer to it as the *Inaugural Dissertation* throughout.

but subjective and ideal [Ak 2:401-402 & 403-404], that the pure intuitions of time and space are what ground the possibility of a priori knowledge in disciplines like geometry [Ak 2:397 & 403-404] and pure mechanics [Ak 2:397 & 401], and, finally, that certain key results of metaphysics are immune from the kinds of challenges that arise when one fails to recognize that time and space are forms of sensory cognition *alone* [Ak 2:411-419].

Insofar as these results appear for the very first time in print in the *Dissertation*, and are considered to be essential components of Kant's Critical Philosophy, it is not surprising that many commentators have regarded the *Dissertation* as a turning point in his philosophical development. The *Inaugural Dissertation* is not only thought to be the culmination of Kant's pre-critical writings, it is also said to mark the beginning of the period which would ultimately lead to the publication of the *Critique of Pure Reason*. In light of the significance which Kant himself attributed to the discoveries made in this period, coming to terms with the *Dissertation* would appear to be essential for anyone who is interested in understanding the development of Kant's thought. And yet, in spite of its evident importance, the *Inaugural Dissertation* has rarely been the subject of its own special monograph. Commentators who have attempted to trace Kant's philosophical development usually treat the *Dissertation* as a kind of bookend: those who have been interested in sketching his development over the course of the silent decade up to the *Critique* have taken the *Dissertation* as their starting-point, whereas those commentators who have attempted to deal with Kant's development during the pre-critical period have instead treated it as an end-point. But the *Dissertation* itself has rarely been the *focus* of discussion, and has certainly not received the amount of careful attention or detailed discussion that one might think it deserves.

No doubt there are various reasons for this comparative lack of attention. At least one important part of the explanation is that Kant himself expressed dissatisfaction with the *Dissertation* not long after completing it. In a letter written to Johann-Heinrich Lambert, to whom he also enclosed a copy, Kant complains that the work was composed under duress and in ill-health, and that it would be necessary to make a number of revisions before submitting it for publication ("both to correct the errors caused by hasty completion and to make my meaning more determinate").³ And yet, as Kant himself later

³ Kant to Lambert, Sept 2, 1770, Ak 10:98. One should not overestimate the significance of this fact and assume that the hasty composition of ID entails that the text is somehow corrupt, and an unreliable source for Kant's views, or that Kant did not think it was worthy of any special attention. The fact that Kant was willing to revise the *Dissertation* suggests that he must have been satisfied with its contents to some extent; and his willingness to send it to Lambert, who he esteemed so highly, suggests that his opinion of the work must have been rather high—as Kant himself notes in his letter to Lambert, "I could not persuade myself to send you anything less than a clear summary of how I view this science [of metaphysics] and a definite idea of the proper method for it" [Ak 10:97]. Indeed, in his letter to Lambert, Kant goes so far as to assert that for "perhaps a year now, I believe I have arrived at a position that, I flatter myself, I shall never have to change, even though extensions will be needed..." [Ak 10:96]. Although we now know that Kant's optimism was not borne out over time, what this remark does suggest is that Kant had a rather high opinion of the *Dissertation*, at least for some period of time, and thought it was worthy of careful attention, even if it required certain corrections and further elaboration. Indeed, it seems that Kant maintained this high regard for the *Dissertation* until the very end of his life, for in a letter written in response to a request from Tieftrunk to publish an edition of his minor writings (dated to Oct. 13, 1797), Kant requested that "I would

revealed in a letter to Markus Herz, these corrections were never made, for rather than revise the *Dissertation* itself, Kant decided instead to begin work on a new book altogether. In this new work, Kant intended to not only correct the various errors made in the *Dissertation*, but also to provide a more expansive treatment of its central arguments, as well as discuss its implications for other central problems of philosophy.⁴ As we now know, the project announced in this letter would only come to fruition in the 1780s, when Kant published his three *Critiques*. But as we also now know, over the course of the investigations leading up to the publication of the first *Critique*, Kant's views underwent a number of radical changes, and these developments required him to radically revise, if not completely abandon, many of his central claims in ID. There is perhaps no better example of this than the change that occurred in Kant's attitudes towards the powers of the human intellect.⁵ In the *Dissertation*, Kant allows that the mind can cognize things as they are in themselves through the intellect, but in the *Critique* this claim is completely rejected. And, since a good deal of Kant's account of the nature of metaphysics in ID is bound up with his theory of the intellect, if the latter was ultimately abandoned, then a good deal of the rest of ID must also go with it. These facts would seem to go a long way in explaining why the *Dissertation* has not received much special

not want you to start the collection with anything before 1770, that is, my *Dissertation* "On the Form of the Sensible World and the Intelligible World, etc." [Ak 12:208]. Whereas Kant was *not* willing to reprint his other pre-critical works, he still felt that the *Dissertation* was worthy of attention. Finally, the hasty composition of the *Dissertation* gives us no compelling reason to think that its contents are particularly unreliable, at least not any more so than any of his other works. Indeed, in a letter he wrote to Mendelssohn on August 16th, 1783 [Ak 10:345], Kant notes that the *Critique* was also composed in "perhaps four or five months, with the greatest attentiveness to its content but less care about its style and ease of comprehension." Cf. Kant's letter to Christian Garve, August 7th, 1783 [Ak 10:338]. But if the hasty composition of the *Critique* gives us no reason to think that it is unreliable or defective, at least in any way which should forestall any attempt to interpret its contents, then surely the same must be true for ID.

⁴ As Kant explained in his letter to Herz of June 7, 1771, "I did not want to make any changes in it, since I had formulated my plan for a fuller treatment later on"; "I am therefore now busy on a work which I call "The Bounds of Sensibility and Reason." It will work out in some detail the foundational principles and laws that determine the sensible world, together with an outline of what is essential to the Doctrine of Taste, of Metaphysics, and of Moral Philosophy" [Ak 10:123]. It was for this reason (alongside the fact that the publisher of the *Dissertation* sent the work out "late and in small numbers and without even listing it in the Leipzig Book Fair Catalogue"), that Kant decided, regretfully, not to revise and republish ID at that time: "Since the *Dissertation*, about which more will be said in my next book, it depresses me a little to think that this work must so quickly suffer the fate of all human endeavors, namely oblivion: for with all its errors it seems unworthy of reprinting." [Ak 10:123-124].

⁵ This, of course, was the very problem which Kant came upon in the course of his work on what was originally intended to be a *revised* version of ID, but which instead eventually became the *Critique*. The problem was first identified by Kant in his famous letter to Herz of February 21st, 1772: having "thought through the theoretical part [of his projected new book], considering its whole scope and the reciprocal relation of all its parts, I noticed that I still lacked something essential, something that in my long metaphysical studies I, as well as others, had failed to consider and which in fact constitutes the key to the whole secret of metaphysics, hitherto still hidden from itself" [Ak 10:130]. As Kant goes on to explain, the problem concerns the question of how we can know that "the representations generated by the intellect" must "necessarily agree with their objects, as they are in themselves" [Ak 10:130-131]. Kant notes that this question was never adequately addressed in the *Dissertation*: "In my *Dissertation* I was content to explain the nature of intellectual representations in a merely negative way, namely, to state that they were not modifications of the soul brought about by the object", but "I silently passed over the further question of how a representation that refers to an object without being in any way affected by it can be possible" [ibid].

attention in the literature. After all, if Kant himself ultimately came to reject major parts of the *Dissertation* in favor of the more sophisticated views he later developed in the *Critique*, then the *Dissertation* is, at best, nothing more than a half-way house to his mature philosophical position. And if many of the central results of ID were later superseded by the *Critique*, and it is the latter work which contains Kant's most developed and mature philosophical standpoint, then why should we devote any special attention to the *Dissertation*? Of course, there are many parts of the *Dissertation* which Kant never abandoned. Most notable, of course, are §14 and §15 of Sec. 3 of ID, which contain his analysis of time and space, and which reappear nearly verbatim in the Metaphysical Exposition of the Transcendental Aesthetic of the *Critique*. But even if the central claims and arguments in Section 3 appear to be identical to those of the Aesthetic, there still does not seem to be any reason why we should pay special attention to them. Rather than discuss Kant's account of time and space in ID, why not instead simply focus our attention on the Aesthetic, and treat the corresponding sections of the *Dissertation* as nothing more than supplementary material which is only useful insofar as it may help shed further light on the *Critique*?

In spite of these considerations, it seems that there are still good reasons to investigate the *Dissertation*. Though it is true that much of ID was eventually superseded by Kant's later work, and may perhaps, for this reason, not be worth investigating *for its own sake*, many have recognized that a close reading of Kant's pre-critical and semi-critical works can provide us with material that is indispensable for understanding his mature position in the *Critique*. To the extent that the *Dissertation* marks a fundamental turning point in Kant's philosophical development, coming to terms with this work may very well provide us with invaluable assistance for understanding his later works. And if so, a detailed investigation of the *Dissertation* would be very desirable, even if it is perhaps not worth investigating for its own sake. Naturally, however, any such investigation would have to take the *Dissertation* on its own terms, for we cannot use the *Dissertation* to help us understand the *Critique* unless we first get clear on what the *Dissertation* actually says. In order to determine just what Kant's earlier works can tell us about the *Critique*, it is necessary to first closely investigate the contents of those works and understand them on their own terms—we cannot be in a position to *compare* the contents of ID with the *Critique*, and determine what exactly was preserved (and why), and what exactly was abandoned (and why), until we first investigate the contents of each of these works separately. And it must be noted that this is *not* as straightforward as some commentators appear to have assumed. Although it is certain that the views of the *Dissertation* are closely connected to Kant's later views, some commentators have argued persuasively that many of the similarities between ID and the *Critique* are merely superficial, and that the failure to recognize this has, in turn, led many to commit a number of serious errors when interpreting the *Critique*.⁶ In some ways this is not

⁶ As we will see below, a case in point is Kant's account of time and space, which appears to be identical in both ID and the *Critique*, but which some have thought are actually quite different, and that the failure to recognize this has led many to misinterpret the *Critique* in various important ways.

surprising, for to the extent that many of the claims Kant makes in ID are bound up with other aspects of that work which he subsequently rejected, one must exercise a good deal of caution when using passages from ID to support any interpretation of the *Critique*—to the extent that the basic framework of ID may no longer be operable in the *Critique*, or even flatly contradict it on certain points, those passages which appear to be similar to those of the *Critique* may end up misleading us as to what Kant’s mature views really were. A detailed investigation of the *Dissertation* would therefore seem to be required if we are to further our understanding of Kant’s philosophical development and mature philosophical system, as well as avoid any possible misinterpretations which may arise from a superficial reading of that text. For these reasons alone, it seems that an investigation of the *Dissertation* is worthwhile even if this work was ultimately superseded by the *Critique*.

In light of these remarks, the subject of the present dissertation is Kant’s *Inaugural Dissertation*. I do not aim, however, to produce an exhaustive commentary, even though such a work would be desirable. My goals are more limited. The aim of the present dissertation is to provide an interpretation of Kant’s theory of time and space in ID. More specifically, my goal is to provide a reconstruction and analysis of the arguments Kant advanced in support of his two central claims about the representations of time and space. Kant claims, first, that these representations are not given by sensation, but are instead generated through an innate law of the mind which coordinates the sensations given by affection; and second, that although these representations are not acquired by abstraction from sensory experience, they are not, for this reason, concepts which belong to the faculty of intellect, but are instead fundamentally sensory. The reason these arguments will be the focus of our discussion is because the other central results which Kant attempts to establish about time and space in ID—including, most importantly, that they are subjective and ideal—are all inferred from these two claims. A reconstruction of these arguments is thus required, above all else, if we are to understand the theory of time and space which Kant defends in ID. And, in turn, since this theory is what underpins most of Kant’s other central claims in ID, by reconstructing these arguments, we will also then be in a position to understand a good deal of the rest of this work.

In the remainder of this introduction, I will attempt to bring my project into better focus by explaining, first, how Kant’s theory of time and space is connected to his overall project in ID, and second, how this theory is related to the account of time and space which he later presented in the Transcendental Aesthetic of the *Critique*. Although I do not aim to produce a commentary on the *Dissertation*, it is necessary to situate Kant’s central claims about the representations of time and space in the context of the *Dissertation* as a whole, and identify those aspects of ID which will have to be dealt with if we are to properly reconstruct the arguments which are designed to show that these representations are non-empirical and non-intellectual. To that end, in the next section I will provide a brief overview of Kant’s central project in ID, and explain what role his account of time and space is supposed to play in this project. In this section I will also describe each of Kant’s two central claims about the representations of time and space in

more detail, and discuss some of the other main issues which we will encounter, and attempt to resolve, in the course of our investigation. In the second section I will then discuss the relation between Kant's theory of time and space in ID and the Transcendental Aesthetic. In doing so, I will explain why some commentators have thought that these two texts may very well be radically different from one another, in spite of their apparent similarities, and why this necessitates a special investigation of the account Kant provides of time and space in ID. Finally, in the third section I will provide a brief overview of the contents of each chapter of this dissertation, as well as a brief summary of some of the main conclusions which I hope to establish.

§0.1 Space & Time in the Inaugural Dissertation

Kant's central goal in the *Inaugural Dissertation* is to secure a method for metaphysics. General metaphysics is the science of being qua being, and the principal task of metaphysicians is thus to identify the most fundamental principles and concepts of being in general. But, as Kant is keen to note, while there may be broad consensus as to what the subject matter of general metaphysics consists in, there is little agreement as to what method should be employed to discover these fundamental concepts and principles. The absence of any agreed upon method for metaphysics has led, unsurprisingly, to a proliferation of many different systems which are all mutually incompatible with one another, and this, in turn, has tended to undermine whatever confidence we may have in the very possibility of ever constructing a science of metaphysics. For this reason, Kant insists that it is necessary to first try and discover what the proper method of metaphysics consists in before we can ever hope to develop a secure system of metaphysics.

In the early-modern period, it was standard to distinguish between two alternative methods of inquiry: the analytic method and the synthetic method. It was standard to characterize analysis as the method which always begins with the truth of some particular proposition and then reasons backwards in order to discover the more general principles which ground that particular truth. In contrast, the synthetic method was said to proceed in the opposite direction, taking as its starting point some general principle and then inferring the particular consequences which are entailed by it. Whereas synthesis proceeds from general principles to particular truths, analysis proceeds from particular truths to those that are general.⁷ At the risk of oversimplification, one may say that each of these methods roughly correspond to different ways in which metaphysical questions were investigated by Kant's contemporaries. On the one hand, many of Kant's

⁷ The distinction is often traced to Aristotle's *Posterior Analytics*, though its early-modern formulation is due to Antoine Arnauld & Pierre Nicole, *Logic or the Art of Thinking* (Cambridge: Cambridge University Press, 1996), Part IV, Ch. 2, pp. 233-239. The distinction between these two methods was not only applied to the discovery of truths, but also to the analysis of concepts. As with the analytic method of proof, which begins with observations of particular things and then proceeds to discover the more basic principles which underlie them, a concept acquired through analysis always begins with some previously given concept, and then proceeds to break that concept down so as to discover each of the more basic components contained in that concept. In contrast, the synthetic method of concept acquisition goes in the other direction, taking as its starting point certain concepts which are regarded as basic and then combining those concepts together to form a new concept.

compatriots maintained that if metaphysics is to ever become a science, then it must be organized as a deductive system, and, for this reason, one should always proceed *synthetically*: one must begin, in other words, by first identifying certain fundamental concepts and principles, and then use these to systematically define or deductively infer every other concept and proposition step by step. In answer to the question of how one is to identify the fundamental concepts and principles which are to be placed at the start of the system, it was common to assume that these are given by the natural light of reason. Reason, or the intellect, is a source of concepts and principles which are absolutely universal and necessary; in constructing a system of metaphysics one should thus begin with these cognitions since they are absolutely certain, and then proceed synthetically by deriving every other principle by means of deductively valid inferences, and defining every other concept through the logical division of those concepts originally given by the intellect. An alternative approach, equally common among Kant's contemporaries, is to instead proceed according to the method of analysis. In order to discover the fundamental concepts and principles of metaphysics, one should *begin* with the particular objects and facts perceived by sense, and only *then* try and discover the more general concepts and principles which underlie them, rather than vice versa. The most general concepts of being are those which are common to every particular, and these can only be discovered by analyzing the particular objects perceived by sense; and the universal principles which ground particular facts should be discovered inductively, by analyzing the particular facts observed by sense so as to determine the general principles which ground them. In contrast to those metaphysicians who proceed synthetically, and take as their starting point the concepts and principles which are given through the intellect, those who investigate metaphysics through the method of analysis begin instead with the deliverances of sense.⁸

Although the methods of analysis and synthesis are distinct, it is important to recognize that the results obtained through either of these methods should always be the same. Whether one begins with some fact perceived by sense and then proceeds regressively to discover the general principle which grounds that fact, or, whether one instead begins with some general principle of the intellect and then proceeds progressively to derive more specific propositions, one would expect that the results we obtain should be identical in either case. Surprisingly, however, Kant claims that in the case of metaphysics, what we discover is that the results we obtain will differ according to whether we begin with the concepts and principles of reason, and then proceed

⁸ As I have already suggested, this account of the alternative methods which Kant's contemporaries employed when investigating metaphysical questions is far too simple. Although figures such as Descartes, Spinoza, Leibniz and the Wolffians may immediately come to mind as examples of those who pursued the synthetic method, while Locke, Hume and Condillac (see esp. the latter's *A Treatise on Systems*) may seem to be obvious proponents of the analytic method, matters are far more complicated than this. In the chapters that follow, we will see that there are a number of qualifications that must be made to this proposed classification which show that it is not as neat and tidy as one might think. But in spite of these qualifications, the reason I have introduced this classification of the different methods of metaphysics is because it helps illustrate the way Kant himself frames the question of method in his opening remarks in ID.

synthetically, or with the cognitions given by sense, and then proceed analytically.⁹ In the opening remarks of ID, Kant attempts to illustrate this phenomenon by showing that there are certain concepts generated by the intellect which cannot be represented through sensory intuition. While some may be tempted to dismiss these notions as incoherent when this fact is discovered, Kant also notes that the existence of the entities which correspond to these concepts appear to legitimately follow from inferences grounded in pure reason. By way of example, Kant claims that it can be demonstrated through reason that the extended bodies represented through the senses must be composed of simple parts, for nothing composite can exist unless the parts which compose it also exist, and these parts must be simple.¹⁰ The problem, however, is that there is no way one could ever encounter these simple substances by means of the senses. Everything represented through the senses must appear in time and space, and so, if extended bodies are indeed composed of simple substances, the only way one could ever represent them through the senses is if they too exist in space. But this appears to be impossible, even in principle. If simple substances exist in space, then they are either spatially extended or not. But if they are extended, then they are not genuine simples, since everything extended is something composite; and, if they are not extended, then they must be mathematical points, but that too is impossible since un-extended points could never be put together in a way that would result in something extended. And, if that is correct, then although the existence of simple substances appears to be *guaranteed* by reason, the conditions required for sensory cognition also seem to show that they are impossible.

What is supposed to be illustrated by this example, as well as many others, is that there is often a conflict between what can be represented through sensory cognition, and what the mind can think through certain concepts of the intellect, and these conflicts often lead to paradoxes. Moreover, although one might attempt to resolve these paradoxes by dismissing the cognitions of one faculty in favor of the other, Kant insists that any such attempt will inevitably lead to disaster. Thus, on the one hand, if there are certain concepts generated by the intellect whose objects cannot ever be encountered in a possible sensory experience, one might begin to doubt whether these concepts are in fact *genuinely* possible, or whether they are instead merely fictive concepts conjured up by the imagination. Even worse, if the existence of the objects corresponding to those concepts is also *guaranteed* by the principles of reason, one might then conclude that

⁹ Cf. Kant to Johann Bernoulli, November 16, 1781, Ak 10:277.

¹⁰ Though Kant doesn't provide any such demonstration in ID, a version of the argument does appear in Ak 1:477 of his *Physical Monadology*, and it is clear from his opening remarks in Ak 2:387-389 that Kant still accepts something like this demonstration in ID, even if he interprets the implications of the argument rather differently in each text ("...in the case of substantial compounds...it can easily be shown by an argument, which is based on reasons deriving from the understanding, that...[simples] are given" [Ak 2:389]. Cf. Ak 2:415, where Kant writes that it is by means of an "*argument of the understanding*, which proves that, if there is a substantial compound, then there are principles of composition, that is to say, simples." Kant then goes on to suggest that the composition of bodies in the sensible world is not consistent with what is required by this principle of reason. The same argument appears as the thesis of the second antinomy [A434-438/B462-466] in the CPR although, once again, the solution Kant proposes to this puzzle in the *Critique* is quite different from the one he advances in ID.

human reason is inherently defective. But then how are we to construct a science of metaphysics if the intellect is not a reliable source of knowledge? Indeed, how can we hope to have any knowledge at all if reason itself is inherently defective? On the other hand, rather than accept this conclusion, one might instead respond to these conflicts by attempting to dismiss the deliverances of sense as inherently confused, and insist that reason is a reliable guide to knowledge after all. But this, too, appears to be unacceptable, for how can the faculty of sense be an unreliable source of knowledge if the most secure sciences in our possession, such as physics and geometry, are all essentially bound up with our sensory cognition? Either way, it seems, the conflicts between the faculties of sense and intellect leave us with options that are equally unacceptable.

What Kant attempts to do in the *Dissertation* is to split the horns of this dilemma. The conflicts between sense and intellect are *not* to be resolved by privileging the cognitions which belong to one of these faculties over the other, but instead by properly allocating them to their own separate domains. In adjudicating between the cognitions of sense and intellect, Kant believes he can formulate a method for metaphysics which, on the one hand, will immunize this science from the kinds of puzzles that arise when certain concepts and principles of the intellect come into conflict with those of sense; and which, on the other, will not require us to dismiss the representations of sense as delusive or fraudulent, so that the knowledge we have which is essentially bound up with sensory cognition also remains secure. There are three main components to Kant's basic strategy. First, Kant claims that the cognitions which belong to sense and intellect are irreducibly different in kind. Though it was common amongst Kant's contemporaries to recognize some distinction between these two faculties, it was also thought that the cognitions which belong to each merely differ in *degree*. As a result, some theorists claimed that the cognitions of sense could, in principle, be reduced to those of the intellect, whereas others maintained that the cognitions of the intellect are instead reducible to those of sense. Since the alleged reducibility of these cognitions is the very assumption which leads to the conflicts already enumerated above, Kant, in contrast, insists that we must sharply distinguish between these two faculties—that the cognitions which belong to intellect are irreducibly different in kind from those belonging to sense. Second, alongside this distinction between sense and intellect, Kant draws a further distinction between appearances and things in themselves. Roughly speaking, the intentional content of a representation is an appearance when it depends upon the subject for its existence, and a thing in itself when it exists independently of the representing subject. For our present purposes, the crucial thing to note about this distinction is that it is drawn *in parallel* to Kant's distinction between the representations of sense and intellect: that is, Kant claims that sensory cognitions *only* represent things as they appear, while intellectual cognitions represent things as they are in themselves.¹¹ Finally, alongside these two claims, the third

¹¹ Thus, when Kant introduces the distinction between sense and intellect in §3, he says the entities cognized through the faculty of sense are phenomena, whereas those cognized through the intellect are noumena [Ak 2:392]. Strictly speaking, the distinction between noumena and phenomena is not equivalent to the distinction between appearances and things in themselves, for an appearance only becomes a phenomenon when the materials given by sense have been subjected to analysis and are represented through an

essential component to Kant's strategy is his novel account of time and space. What Kant attempts to show is that the representations of time and space belong to the faculty of sensibility rather than the faculty of intellect. To begin, since everything the mind intuits through the senses *must* be given in time and space, Kant claims that the representations of time and space are fundamental forms of sensory cognition. Crucially, however, the reason why Kant thinks these representations are *necessary* for all sensory cognition is because they are grounded in the subject's constitution. Although everything we intuit through sense must be represented in time and space, Kant does not think these representations are empirical; instead, what Kant attempts to show is that the representations of time and space are generated through an innate law of the subject's constitution. It is thus by virtue of the mind's own constitution that everything the mind senses must be represented in time and space. Having shown that the representations of time and space are forms of sensory cognition, what Kant then tries to show is that these representations are not concepts of the intellect. And, from this, together with the assumption that sensory representations only represent appearances, whereas things as they are in themselves can only be represented through the intellect, Kant infers that the representations of time and space do not represent things as they are in themselves.

By putting these various claims together, Kant thinks that the conflicts between sense and intellect can all be resolved without infringing upon the legitimacy of either faculty. On the one hand, Kant wants to protect the cognitions of the intellect from the various puzzles that arise when we discover that certain principles or concepts of the intellect cannot in principle be encountered through sensory intuition. What Kant attempts to show is that these conflicts can all be resolved so long as one recognizes that the conditions proper to sensory cognition are *distinct* from those which determine the use of the intellect. Since every object cognized through the senses must appear in time and space, space and time are the forms of sensory cognition; but, although space and time are what condition the existence of *sensible* objects, they are not conditions for the possibility of objects in general. Space and time are nothing more than subjective conditions for human intuition, not objective conditions for things as they are in themselves, and so, although everything represented through the senses must appear in time and space, space and time do not condition the existence of things as they are in themselves. What Kant then tries to show is that the arguments which seem to demonstrate that certain concepts generated by the intellect are incoherent all derive their force from the assumption that the conditions which govern sensory cognition also condition the existence of the entities cognized through the intellect. Those who reject certain concepts of the intellect do so because they assume that the same laws and principles which condition the possibility of the objects cognized by the senses also condition the possibility of the objects cognized by the intellect. But this is a mistake. The

(empirical) concept [Ak 2:394]. Nevertheless, all phenomena belong to sensibility, and thus to the way things appear, not as they are in themselves [ibid]. This connection between sensibility and appearance, on the one hand, and intellect and things in themselves, on the other, is repeated throughout Sec. 5 (see esp. Ak 2:412*). Just why it is that Kant associates intellectual cognitions with things in themselves, and sensory cognition with appearance, is something we will discuss in further detail at the appropriate time.

laws of sensory cognition only impose limits on what can be represented through the senses by a being with a constitution like our own, they are not absolutely universal and necessary conditions of being or thought. And so, although it may be impossible to represent certain concepts in the concrete, that does not mean they are incoherent or impossible. Thus, the demonstration that simple substances are incoherent rests on the assumption that if these substances exist, then they must exist *in space*; but if we reject this assumption and allow that simple substances exist outside of space, and that these substances may still be coherently represented through pure concepts generated by the intellect, then this argument may be rejected. And the same strategy can be used to dismiss any other arguments which assume that the conditions required for sensory cognition likewise determine what can or cannot be cognized through the intellect. Since the faculties of sense and intellect are distinct sources of cognition, what is thought by means of the intellect is not subject to the conditions which govern sensory cognition.¹²

From these remarks alone, it should already be clear that the method of metaphysics which Kant proposes in ID is essentially rationalistic. In sharp contrast to the *Critique*, in the *Dissertation* Kant not only maintains that the human intellect is a source of cognition which can provide us with knowledge of things as they are in themselves, but also that it is the *only* such source. And, since the goal of metaphysics is to determine what things are like objectively, the way to properly construct a science of metaphysics is to proceed according to what is dictated by the intellect *alone*.¹³ And yet, in spite of Kant's evident rationalist sympathies, he does not wish to denigrate the cognitions which belong to the faculty of sense. Although sensory representations are all subjective appearances, and lack the kind of universality and necessity characteristic of

¹² It is important to note that Kant does not wish to completely bifurcate sensory and intellectual cognition, he only wants to ensure that what is proper to sensory cognition is always separated from intellectual cognition. One should never attribute anything which belongs solely to sensory cognition to the objects cognized through the intellect; for example, since space and time are the forms of sensory cognition, though not conditions of every possible object in general, one should not attribute any spatiotemporal attributes like position, extension, duration (etc.) to the objects cognized through the intellect. In the final section of ID, Kant demonstrates how certain metaphysical paradoxes all arise from the failure to keep these things distinct, and how all these puzzles can be easily resolved so long as one respects these distinctions [Ak 2:410-419]. But this does not mean that one cannot apply purely intellectual concepts to the objects represented through the senses: the sensible world is subordinate to the intellectual world, for since intellectual concepts are conditions of objects in general, they also condition sensible objects in particular, and so, while objects in the intelligible world cannot be cognized through anything peculiar to sense, sensible objects can still be cognized through purely intellectual concepts, i.e., *as substances, causes, etc.* Although Kant insists on the distinction between sense and intellect, he does not think we are prohibited from applying pure concepts of the intellect to the objects represented in the sensible world.

¹³ As he puts it, "the philosophy which contains the *first principles* of the use of the *pure understanding* is METAPHYSICS...Since, then, empirical principles are not found in metaphysics, the concepts met with in metaphysics are not to be found in the senses but in the very nature of the pure understanding..." [Ak 2:395]; "in pure philosophy, such as metaphysics, the *use of the understanding* in dealing with principles is *real* that is to say, the fundamental concepts of things and of relations, and the axioms themselves, are given in a fundamental fashion by the pure understanding itself...[it is] the right use of reason which here [in metaphysics] sets up the very principles themselves, and since it is in virtue of the natural character of reason alone that objects and also the axioms, which are to be thought with respect to objects, first become known, the exposition of the laws of pure reason is the very genesis of science" [Ak 2:411].

those cognitions which belong to the intellect, Kant nevertheless insists that this does not mean the judgments of sensory cognition are any less true, or that they cannot be the subject matter of a genuine science. In order to explain how there can be a “*science of sensory things*” [Ak 2:398], Kant once again appeals to his analysis of time and space. As fundamental forms of sensory cognition, everything we intuit must be represented in time and space. And, since the representations of time and space are generated a priori through an innate law of the mind’s own constitution, Kant infers that the mind imposes certain constraints which necessarily apply to any possible object we sense—such as, that the objects we intuit must be three-dimensional, continuous, etc. For this reason, Kant thinks we can anticipate in advance of experience that every sensible object will be subject to these constraints, that certain propositions about sensible objects can therefore be known independently of experience, and that this is precisely what is required if we are to construct certain sciences of sensible phenomena, such as geometry and physics. And so, although time and space do not belong to things as they are in themselves, they are nevertheless fundamental forms of sensory cognition which make the science of sensible phenomena possible.

What should be evident from this brief overview is that Kant’s analysis of the representations of time and space is absolutely essential to his central goal in ID of providing a new method for metaphysics. And, in particular, if this project is to succeed, what Kant must show above all else is that the representations of time and space are both non-empirical and non-intellectual. Before we proceed any further, I would like to explain each of these claims in a bit more detail, and also to describe some of the main problems we will face in trying to properly reconstruct Kant’s arguments for these claims.

Kant’s first central thesis is that space and time are not empirical concepts acquired by abstraction from sensory experience. As stated, this thesis is merely negative: it amounts to nothing more than a rejection of one possible explanation as to how the mind originally came to acquire the representations of time and space. But this thesis is also bound up with a rather peculiar, positive account of the origins of these representations which Kant endorses in ID. In the *Dissertation*, Kant claims that the representations of time and space are generated by the mind itself when the sensations originally given by affection are actively arranged in a spatiotemporal order according to certain innate laws. While the matter of an intuition corresponds to the sensory data received through experience, the order or spatiotemporal arrangement of the objects sensed is the product of an innate cognitive activity which imposes spatiotemporal form on the sensations originally given by affection. This interpretation of Kant’s account of the origins of the mind’s representations of space and time, variously referred to as the “impositionist” or “forms-as-mechanisms” thesis, is historically prominent.¹⁴ But it is also extremely

¹⁴ Most notably, Cf. Hans Vaihinger, *Commentar zu Kants Kritik der reinen Vernunft*, Vol. II (Stuttgart: Union Deutsche Verlagsgesellschaft, 1892), pp. 94-98; Norman Kemp Smith, *A Commentary to Kant’s “Critique of Pure Reason”* (2nd ed., London, 1923), pp. 85-88, 99-103. For contemporary defenses, see esp. Wayne Waxman, *Kant’s Model of the Mind* (New York: Oxford University Press, 1991) & Patricia Kitcher, *Kant’s Transcendental Psychology* (Oxford University Press, 1993), ch. 2. This interpretation was also quite common amongst 19th century philosophers and psychologists and is still widely held in contemporary

controversial. Many commentators have argued that this account is simply implausible, for a whole host of reasons. Even worse, Kant appears to provide very little in the way of support for this thesis, which is quite surprising given how intuitively implausible it seems to be. Some commentators have claimed that the only hint of an argument which Kant ever advanced in support of this thesis turns on the assumption that the sensations originally given by affection are, in some sense, non-spatial and non-temporal. But many of the same commentators who endorse this interpretation have also claimed that Kant never provides the least bit of evidence in support of this assumption—that it is nothing more than an *arbitrary* “assumption which Kant has already embodied in his definition of the form of sense” and which always appears “as a premise for argument, never as a statement calling for proof.”¹⁵ Insofar as Kant’s positive account of the origin of the representations of time and space appears to be intrinsically implausible, and does not appear to be sufficiently motivated by any arguments, many commentators have denied that Kant ever held such a lavish view. But for our purposes, the problem is that the textual evidence for this interpretation appears to find its strongest support in the ID (as we will see in further detail below),¹⁶ and Kant also appeals to this thesis to support a number of his other central claims—specifically that it secures objective knowledge about the sensible world. In light of these facts, any attempt to reconstruct Kant’s theory of time and space in ID will have to address this issue. Specifically, it will be necessary to try and determine whether the textual evidence does indeed support this interpretation, and, if so, to then try and determine what possible arguments could have motivated Kant to endorse this seemingly implausible view.

The second major claim which Kant attempts to establish is that the representations of time and space are not concepts of the intellect, but are instead representations which belong exclusively to the faculty of sense. As we have seen, this claim is also of the utmost importance for Kant’s overall project: from the fact that the

histories of psychology. For discussion, see Gary Hatfield, *The Natural and the Normative: Theories of Spatial Perception from Kant to Helmholtz* (Cambridge, MA: MIT Press, 1990).

¹⁵ Kemp Smith, *Commentary*, p. 86. Kitcher, pp. 30-45, responds to this charge by arguing that it was Kant’s likely acquaintance with contemporary problems of depth perception, coupled with the issues concerning the relationship between tactile and visual sensations, which led him to conclude that “the spatial properties of objects...derive from our perceptual apparatus and not from the properties of objects affecting sensation” (“Discovering the Forms of Intuition,” *The Philosophical Review*, 96 (1987), 206). Other commentators, most notably Falkenstein, *Kant’s Intuitionism*, pp. 88-89, have argued that while Kant may have held this view in the ID, he carefully distanced himself from that position in the *Critique*. In the *Critique*, spatial form is not the product of innate mechanisms which order the matter of intuition into a spatial array; rather, our sensations are originally received with an inherent spatiotemporal ordering, and the forms of intuition are merely the orders in which these intuited matters are received. When properly interpreted, Kant’s claim that the spatial characteristics of appearances are not given in sensation amounts to nothing more than the claim that the order in which the matter of appearance is presented is “not anything that can be found in the matters themselves”, where these are taken to be the “qualitative aspects of sensation” (ibid). The charge that Kant’s position rests on a “groundless assumption” is thus either based on a misrepresentation of Kant’s view or correctly attributes a position which Kant did hold, but not as an arbitrary assumption.

¹⁶ Even Falkenstein, *Kant’s Intuitionism*, p. 91, the strongest critic of this interpretation, admits that the “evidence that Kant adhered to a forms-as-mechanisms view in ID is simply too pervasive and unambiguous to permit any other reading”, though he cautions that these passages do not constitute evidence for attributing the position to Kant in the *Critique*.

representations of time and space are not concepts of the intellect, Kant infers that they do not belong to things as they are in themselves, and it is on the basis of this result that Kant feels entitled to then conclude that certain concepts of metaphysics are immune from the kinds of challenges that arise when we discover that they cannot be represented through sense. But although Kant's basic argumentative strategy is relatively straightforward, there is one especially difficult set of issues which will have to be resolved before we can properly reconstruct the arguments which are designed to show that time and space are fundamentally sensory. The issues in question all revolve around Kant's distinction between the faculties of sense and intellect. To begin, in spite of the fact that this distinction is one of the central components to Kant's overall strategy in ID, Kant appears to say very little to explain *why* we should accept this distinction. But the apparent absence of any persuasive argument to show that the representations of sense and intellect are indeed different in kind threatens to undermine Kant's whole project, since one of its central components is not sufficiently motivated.¹⁷ Another problem is that the distinction between the faculties of sense and intellect is never clearly explained: Kant appeals to a number of *distinct* criteria throughout the text when explaining the difference between sensory and intellectual representations, and this leaves it entirely unclear as to which of these various criteria are supposed to ultimately ground the difference between these faculties. Even worse, each of the main criteria which Kant seems to appeal to appear to be inconsistent with other central claims which he defends in ID. Before we proceed any further, it will be useful to briefly illustrate some of these problems by taking a look at Kant's various formulations of the distinction between sense and intellect. The distinction between these faculties is first introduced in §3.

Sensibility [*sensualitas*] is the *receptivity* of a subject in virtue of which it is possible for the subject's own representative state to be affected in a definite way by the presence of some object. *Intelligence* (rationality) [*intelligentia*] is the *faculty* of a subject in virtue of which it has the power to represent things which cannot by their own quality come before the senses of that subject. The object of sensibility is the sensible; that which contains nothing but what is to be cognized through the intelligence is intelligible. In the schools of the ancients, the former was called a *phenomenon* and the latter a *noumenon*. Cognition, in so far as it is subject to the laws of sensibility, is *sensitive*, and, in so far as it is subject to the laws of intelligence, it is *intellectual* or rational. [Ak 2:392].

In this passage, the distinction between these two faculties appears to be based on the fact that representations come into the mind in one of two ways, they are either given to the mind when it is affected by external objects, or they are spontaneously generated by the mind itself through its own inner activity. The difference between the two faculties is thus given in terms of receptivity and spontaneity. Sensibility is a receptive faculty, it is the

¹⁷ Falkenstein, *Kant's Intuitionism*, p. 29 & pp. 32-33 claims that the only reason Kant gives for accepting this distinction is that only this will enable us to resolve the otherwise intractable metaphysical puzzles which Kant cites at the beginning of ID. But if that is correct, Kant's defense of metaphysics looks more like special pleading than a principled defense of the possibility of simple substances, infinite aggregates, etc.

capacity the mind has to undergo certain modifications in its internal, representative states when it is affected by external objects. The intellect, in contrast, is a productive faculty, it is the capacity of the mind to spontaneously produce representations through its own inner activity. What Kant appears to be assuming is that if the mind's representations have distinct origins, or differ in their mode of production, then at least two distinct faculties of the mind are required to explain this fact. The problem, however, is that the distinction between sense and intellect cannot be based solely on whether the mind is active or passive when forming a representation, for as we have already seen, in ID Kant seems to believe that the mind is responsible for actively generating the representations of time and space through the coordination of sensations: the spatiotemporal form of what is sensed is produced through a spontaneous act of the mind which orders the sensations given by affection by *actively* arranging them in a spatiotemporal array. Insofar as that is the case, the distinction between sense and intellect cannot be ultimately based on whether the mind is active or passive when forming a representation, for although the mind is active when generating the representations of time and space, they are assuredly not concepts that belong to the intellect.

Now, there does appear to be, at least implicitly, a second criterion which Kant alludes to in this passage when he writes that the objects represented through the intellect “cannot by their own quality come before the senses of that subject”: what this suggests is that it is something about the nature of the things represented through the intellect which *explains* why they cannot be given to the mind through affection. In that case, the difference between the faculties of sense and intellect might not be based on the difference in their mode of production, but instead on certain fundamental differences in the nature of the things which the mind represents, and these differences somehow *explain* why they must be produced in the mind in different ways. Of course, just what these differences are is not explained in this passage. Kant only writes that some of the mind's representations are of non-sensible things, whereas others are sensible, but that, of course, does not tell us very much since the difference between these kinds of things is stated in terms of the very distinction they are supposed to explain, namely, the difference between what is sensible and what is intelligible. But a more illuminating account is suggested in the discussion that follows, where Kant goes on to distinguish the mind's various representations according to whether they represent something singular or general. And, when Kant later attempts to show that the representations of time and space are not intellectual, his argument appears to turn on the claim that these representations are singular rather than general, discursive concepts. What all of this might lead one to suppose is that generality and singularity are the different kinds of contents which are alluded to in §3. And yet, as plausible as this might sound, this does not seem to be correct either, for there is a good deal of textual evidence which strongly suggests that Kant himself did not think that the difference between singular and general representations is what ultimately grounds the distinction between sensory and intellectual cognition. In certain passages of ID, Kant *explicitly denies* that the distinction between sense and

intellect can be grounded on the difference between singular and general representations. Indeed, Kant repeatedly accuses certain philosophers, like Wolff, of having confused the distinction between sense and intellect *precisely because* they mistakenly identify generality as the defining mark of intellectual cognition. Thus, to cite just one example, when Kant outlines his theory of the intellect in §5, one of the key points he stresses is that the *generality* of a cognition does not by itself indicate that it belongs to the intellect, for a cognition can be of something general and yet remain sensory.

If, therefore, sensitive cognitions are given, sensitive cognitions are subordinated by the logical use of the understanding to other sensitive cognitions, as to common concepts...But it is of the greatest importance here to have noticed that cognitions must always be treated as sensitive cognitions, no matter how extensive the logical use of the understanding may have been in relation to them. For they are called sensitive *on account of their genesis* and not on account of their *comparison* in respect of identity or opposition. [Ak 2:393].

General concepts are formed by subordinating sensitive cognitions to common concepts, but no matter how general a concept is (or “how extensive the logical use of the understanding may have been in relation to them” [ibid]), it will remain sensory so long the content of that representation was originally given by the senses. But if a concept can be sensory even though it is general, generality and singularity cannot ground the distinction between sense and intellect. Indeed, in this passage Kant appears to insist, once again, that the difference is based on the manner in which representations are produced (“they are called sensitive *on account of their genesis*”), but, as we have already noted, this criterion is also insufficient.

The absence of any precise formulation of the difference between the faculties of sense and intellect presents a serious problem for anyone who wishes to reconstruct the arguments which are designed to show that the representations of time and space are not intellectual. After all, whether or not these representations are intellectual or sensory depends, in large part, on what the distinction between sense and intellect is based on, for we will not be in a position to determine whether the representations of time and space belong to one faculty rather than the other unless we first know what features are characteristic of the representations pertaining to each. Indeed, given that the distinction between sense and intellect is one of the central components behind Kant’s overall strategy in ID, unless we can explain *what* it is that grounds the distinction, and *why* we should accept it, Kant’s whole project will simply collapse. For these reasons, one important part of our investigation will be to try and determine just what the distinction between sense and intellect is ultimately based on, and whether this distinction can in fact be reconciled with the other central claims which Kant defends in ID.

§0.2 *The Inaugural Dissertation & The Transcendental Aesthetic*

Kant presents his theory of time and space in Section 3 of ID, and what is immediately revealed by even the most cursory glance at this section is that, to all intents and purposes, it appears to be virtually identical to the Metaphysical Exposition of the

Transcendental Aesthetic. In both texts, Kant attempts to show that time and space are a priori intuitions, that they are fundamentally sensory rather than intellectual, and that these representations do not apply to things as they are in themselves. Moreover, the arguments which Kant advances in support of each of these claims also appear to be the same in both texts. Given these similarities, many commentators have supposed that the theory of time and space which Kant defends in Sec. 3 of ID is effectively identical to the theory he later presented in the Transcendental Aesthetic of the *Critique*.

But other commentators have maintained that there are in fact certain crucial differences between these two texts, and that, despite appearances, the prevailing assumption that the general strategy and argumentation of Sec. 3 of ID is identical to that of the Aesthetic is simply false. Among these commentators, no one has done more to challenge this assumption than Lorne Falkenstein, and in the remarks that follow I would like to briefly outline his reasons for doing so.¹⁸ What we will soon discover is that, in spite of appearances, there are good reasons to doubt whether the theory of time and space which Kant defends in the Aesthetic is nothing more than a rehash of Sec. 3 of ID.

To begin, we have already observed that the theory of intellectual cognition which Kant defends in ID is quite different from the one that appears in the *Critique*. Falkenstein claims that these conflicting accounts of intellectual cognition have important implications for the theory of time and space which Kant defends in each of these works. The most important difference is that the powers which Kant attributes to the intellect in ID are radically different from those accorded to it in the *Critique*. In ID, Kant distinguishes between the sensible and intelligible worlds, and one of his central claims is that the conditions of sensory cognition are *distinct* from those of intellectual cognition. Objects in the intelligible world are cognized through the intellect *alone*, independently of the senses: through the real use of the intellect the mind is able to generate concepts which it uses to cognize objects as they exist in the intelligible world and through these concepts the mind is able to acquire knowledge of things as they are in themselves. This, of course, is rejected in the *Critique*. From the standpoint of the CPR, the pure concepts of the understanding have no objective validity when they are employed independently of the senses; the mind can no longer cognize things as they are in themselves through concepts of the understanding, at least not in any way which can result in objective knowledge. Moreover, although sense and intellect remain distinct *sources* of cognition—in the sense that the elements each contributes to an act of cognition are separate—it is no longer possible for the mind to have a cognition through either sense or intellect *alone*. Objective cognition can only occur when the materials originally given by sense are brought to the unity of apperception through certain acts of the mind which synthesizes the manifold according to the rules generated by the understanding. The concepts generated by the understanding cannot be employed *independently* of what is sensed, for without the content given by sense no object of cognition can be given, and the concepts of the understanding would then have no application; and, conversely, unless the

¹⁸ The remarks that follow are based on his discussion in Falkenstein, *Kant's Intuitionism*, pp. 28-71.

materials given by sense are synthesized through the understanding, objective experience is impossible: as Kant puts it, “Thoughts without content are empty, intuitions without concepts are blind” (A51/B75). Thus, in contrast to ID, where the representations belonging to sense and intellect can be employed independently of one another, in the *Critique* these faculties are no longer capable of providing a cognition unless the elements contributed by each are brought together and work alongside one another.

Falkenstein claims that these conflicting accounts of intellectual cognition have important implications for Kant’s theory of time and space. As we have already seen, when Kant introduces the distinction between the faculties of sense and intellect at the beginning of §3 in ID, he appears to formulate it in terms of receptivity and spontaneity. But when he turns to his account of sensory cognition in §4, Kant claims that the mind is responsible for actively generating the representations of time and space through the coordination of sensations: whereas sensations are passively received through affection, the spatiotemporal form of what is sensed is *actively* constructed by the mind. What this seems to entail is that the distinction between sense and intellect cannot be given in terms of spontaneity and receptivity, at least not in the *Dissertation*, for although the mind is active when generating the representations of time and space, they are assuredly not representations that belong to the intellect. Now, in light of this fact, Falkenstein claims that the distinction between sense and intellect in ID must be based on whether the content of a representation is something singular or general: through the intellect the mind represents general concepts, while the representations that belong to sensibility are singular intuitions, and the reason why time and space must be sensory representations is because they are not discursive concepts.¹⁹ Of course, we have already observed that there may be good reasons to doubt whether this is in fact correct, but this does not matter for our present purposes, for even if the difference between singular and general representations does not ground the distinction between sense and intellect in ID, Falkenstein’s central claim is that Kant’s revised conception of the intellect in the *Critique* entails that the representations of time and space *cannot* be spontaneously generated

¹⁹ Falkenstein, *Kant’s Intuitionism*, pp. 43-47. On his reading, in ID the intellect is nothing more than the power the mind has to form concepts of universals through abstraction and to classify representations by subordinating them to one another. Falkenstein stresses that it is not clear why intuitive cognition must be related to sensory cognition, for although abstraction was the power traditionally attributed to the intellect, he notes that there was also a tradition which allowed for non-sensory perception which is both immediate and singular. Likewise, although sense is traditionally passive and intuitive, it was also common to attribute a productive power to the senses, since it was assumed that sensible objects only come to be represented after the particular impressions given by sense have been combined by the common sense. Falkenstein, *ibid*, pp. 45-47. This leads to problems when Kant turns to the question of whether time and space are representations which belong to the intellect. Falkenstein claims that Kant’s argument rests on the assumption that the intellect is fundamentally discursive, that sense gives particulars while intellect abstracts universals; that is why the arguments Kant uses to show that time and space are not cognized through the intellect amounts to nothing more than a demonstration that they are not representations of universals. But this, Falkenstein claims, cannot show that time and space are not intellectual representations unless Kant first establishes that the intellect cannot intuit singular entities; but the only argument Kant ever appears to give for that claim appears in §8, where he argues that the intellect cannot intuit singular entities since these can only be given through time and space, and time and space are sensory representations. But this, as Falkenstein, *ibid*, pp. 51-52 notes, is obviously inadequate since it is circular.

through any innate laws of the mind, as Kant assuredly maintains in ID. In the *Critique*, the intellect is not only responsible for forming general concepts, but also for *every* combination of the manifold given by sense [A77-8/B103; B129-30]. This is the key insight of the Transcendental Deduction: the objective validity of the categories can only be secured through the recognition that the understanding alone is responsible for connecting the materials delivered by sense according to the rules it generates, and these rules are nothing more than the different ways that the manifold of sense can be combined through acts of synthesis. If every act of combination is a function of the understanding, then the mind is only active through the understanding. But, if Kant wishes to maintain the distinction between the two faculties, and the understanding *alone* is an active faculty, then sense must be essentially receptive. It is precisely for this reason that Falkenstein claims that receptivity and spontaneity are the essential grounds for the distinction between sense and intellect in the *Critique*, rather than the contents of what is represented. But once this has been recognized, certain conclusions about the nature of the forms of intuition immediately follow. Since sensibility is the faculty of intuition, and is essentially passive, it follows that *immediacy* rather than *singularity* must now be the defining mark of an intuition; and, in that case, the intuitions of time and space cannot be representations which are constructed through some spontaneous act of the mind which synthesizes the manifold given by sense, for all synthesis is a function of the understanding, though time and space are assuredly not concepts of the understanding (or of the imagination in particular, which is identified as a function of the understanding in B129-30 & B150-2)].²⁰ If the representations of time and space are not actively constructed by means of synthesis, then they must instead be given immediately through experience.²¹ But if that is correct, Kant's account of the forms of intuition in ID is no

²⁰ There are of course many passages in the Analytic where Kant seems to suggest that time and space are products of synthesis (most notably A99-100, A102, B137-138, B151-152, B154-156, B160n). These passages have led some to the conclusion that the Aesthetic and Analytic are inconsistent with one another. Some claim that in the Analytic Kant reverts back to the view of the *Dissertation*, while the Aesthetic is merely a hold-over from an intermediate stage in his thought. The classic example of this reading is Vaihinger, *Kommentar*, vol. II, pp. 16-22 & 80-96 and Kemp Smith, *Commentary*, pp. 40-41 & 88-98. One of the main goals of Falkenstein's interpretation is to show that the Analytic and Aesthetic are not inconsistent with one another; but the only way this can be maintained is if we recognize that Kant's view on the origins of the forms of intuition is radically different from the one he espoused in the *Dissertation*.

The evidence that Kant adhered to a forms-as-mechanisms view in ID is simply too pervasive and unambiguous to permit any other reading. But ID is not the *Critique*, and, despite the superficial similarities between the Aesthetic and Section III of ID, it is a mistake to affirm *any* similarity in aims, arguments, or presuppositions between the two works without good reason.

Falkenstein, *Kant's Intuitionism*, p. 91 (cf. pp 52-66). Finally, there are alternative readings which attempt to reconcile the Aesthetic & Analytic by arguing that time and space are indeed products of a kind of synthesis carried out by the imagination. For specimens of this reading, see Beatrice Longuenesse, *Kant and the Capacity to Judge: Sensibility and Discursivity in the Transcendental Analytic of the 'Critique of Pure Reason'* (Princeton University Press, 2001) and Wayne Waxman, *Kant's Model of the Mind: A New Interpretation of Transcendental Idealism* (Oxford University Press, 1991).

²¹ Though, as Falkenstein is careful to note, this does not mean that time and space are empirical concepts. What is given by experience is not just sensation, but also the order in which those sensations are received, and this order is an additional element distinct from sensation. Sensations constitute the matter of an intuition and are given by affection, while the form of an intuition is the order in which these sensations are originally received. Although the representations of time and space are received together with the

longer consistent with the theory of cognition articulated in the *Critique*, for whereas in the Aesthetic the forms of intuition are passively received through experience, in ID Kant repeatedly insists that they are actively generated through an innate law of the mind which coordinates the sensations given through affection.²²

Whether or not Falkenstein's interpretation is ultimately correct is something that we need not try and determine at this point—though I will have much to say about it in the chapters that follow. For our present purposes, what matters is that these considerations provide us with good reasons to doubt whether the Metaphysical Exposition of the Aesthetic is in fact that similar to Sec. 3 of ID, in spite of appearances. At the very least, the various differences between these two texts should forestall any attempt to interpret them along the exact same lines from the very get-go. This is not to say, of course, that there is no way to reconcile these texts. As we have already seen, there is some reason to think that Falkenstein's account of the sense-intellect distinction in ID may be inadequate; and perhaps a closer reading of ID will provide us with other results which show that these two texts can in fact be reconciled after all, or at the very least, shed further light on the *Critique*. But whether or not a close reading of ID will provide us with any such results cannot be determined until we have first investigated that text on its own terms. For now, this is nothing more than an open question.

What I ultimately do hope to show is that a close reading of ID does reveal many important aspects of Kant's critical philosophy which have not been sufficiently appreciated, and that many of his central claims and arguments about the representations of time and space are quite different from how they have been usually interpreted. And, that once these arguments have been properly interpreted, certain aspects of the *Critique* will then be better understood in light of these results.

sensations given by affection, they are not *themselves* sensations nor are they *derived* from sensation. The spatiotemporal order in which sensations appear is not itself a qualitative aspect of sensation, for one and the same sensation can appear in any number of locations in time and space, and there is no way to determine the location in which a sensation will appear simply by inspecting its qualitative features; and, if that is correct, the spatiotemporal order in which sensations appear is not itself a sensation nor is it derived from sensation. It is in that respect that the forms of intuition are non-empirical: even though they are given immediately through experience, they are not derived from the matter given by experience. See Falkenstein, *Kant's Intuitionism*, pp. 3-13, 88-89, 160-183.

²² Falkenstein, *Kant's Intuitionism*, p. 96 supports these claims further by noting the absence of any textual evidence after 1772 which asserts that the representations of time and space are actively generated by the mind through coordination. After 1772, there is no longer any mention of active sorting, arranging, or coordinating; instead, the forms of intuition are now said to be originally received as an immediate effect of the impressions given by affection. A further problem is that Kant is no longer entitled to distinguish between sense and intellect according to the content of our representations, for in the *Critique* Kant maintains that concepts without intuitions are empty and intuitions without concepts are blind; but given this new "blindness" constraint, Kant can no longer argue that time and space are not intellectual representations simply by inspecting their content to see whether they have the features characteristic of intellectual representations, for all our representations are infused with contents contributed by the intellect. Kant cannot then infer that time and space are not concepts of the understanding simply because they are not discursive, for in light of his revised account of the understanding as the faculty responsible for all combination, their non-discursivity is now at least consistent with having an origin in the understanding. See Falkenstein, *ibid*, pp. 54-58.

§0.3 Overview of Chapters

In order to lay the groundwork for my reconstruction of the arguments Kant gave to show that the representations of time and space are non-empirical and non-intellectual, the overarching goal of the first two chapters of this dissertation will be to explain the grounds for the distinction between the faculties of sense and intellect in ID, and the way I will proceed is by first discussing the way Kant characterizes each of these faculties one by one.

In the first chapter, I provide an interpretation of the theory of sensory cognition which Kant presents in ID. The basic components of this theory revolve around the distinction Kant introduces between the matter and form of intuition and the matter and form of appearance. After a preliminary discussion in §1.1 of the basic account Kant provides of sensory cognition in §4 of ID, I then offer an interpretation of each of the main components of his theory, beginning with an account of the *form* of intuition and appearance in §1.2, and then turning to what Kant says about the *matter* of intuition and appearance in §1.3. What I also show throughout the course of this chapter is that the textual evidence in ID, as well as other contemporaneous texts, demonstrates that the theory of sensory cognition which Kant advanced in the *Dissertation* is best interpreted in accordance with some version of the “impositionist” or “forms-as-mechanisms” thesis identified above. The interpretation I provide in this chapter also explains in greater detail just how this theory is to be understood.

In the second chapter, there are two main goals which I set out to accomplish. The first is to explain Kant’s theory of the intellect as it appears in the *Dissertation*, and the second is to combine the results we obtain in the course of our discussion with the findings of the previous chapter so as to explain the true grounds of the distinction between sense and intellect. I begin with a preliminary discussion of Christian Wolff’s account of these two faculties, as well as a brief overview of Wolff’s views on philosophical methodology, especially as it applies to metaphysics. The purpose of this preliminary discussion is to set the scene for my own interpretation of Kant’s theory of intellectual cognition, for what will become evident throughout the course of our discussion is that a good deal of what Kant says about the intellect in ID is best understood in light of his rejection of certain key elements of the views of Wolff and his followers. In §2.2, I turn to the account of the intellect which Kant provides in §5 of ID. I argue that at the center of Kant’s theory is a distinction he draws between the real and the logical use of the intellect, and the main task in §2.2 is to get clear on the nature and characteristic functions of each of these forms of the intellect. Among the various results I obtain in this section, the most important is that Kant’s distinction between these two forms of the intellect entails that neither spontaneity nor generality can be the defining marks of an intellectual cognition, and hence, that the distinction between sense and intellect is not ultimately grounded on either the difference between singular and general representations or on whether these representations are passively received or actively generated. I then elaborate on these results in §2.3 by explaining how Kant used the distinction between the real and logical use of the intellect to reject Wolff’s theory of the intellect, and in §2.4-2.5, where I show

that Kant's views on the nature of the intellect are largely derived from Leibniz's account in the *New Essays*. The results obtained in each of these separate sections are then taken up in §2.6, where I provide an interpretation of the grounds of the distinction between sense and intellect. In this final section, I argue that in ID this distinction is ultimately grounded on the difference between those representations whose intentional content is abstract and those which are concrete. I show that this interpretation is not only supported by a considerable amount of textual evidence, but also that it has a great deal of explanatory power, and can resolve a number of the apparent inconsistencies in ID.

In the third chapter, I provide an overview of the Leibnizian-Wolffian account of the concepts of time and space. As I will show, there is a good deal of evidence which demonstrates that each of Kant's central claims about the representations of time and space are directed against the Leibnizian-Wolffian account. And, as we will also see, an exposition of the Leibnizian-Wolffian theory will shed a great deal of light on Kant's overall strategy in Sec. 3 of ID. In particular, getting clear on the Leibnizian-Wolffian theory will be especially important for understanding the arguments Kant gave to show that the representations of time and space are sensory rather than intellectual. Having shown in the second chapter that Kant's distinction between the faculties of sense and intellect is based on the difference between abstract and concrete representations, one problem we face is that Kant's main argument for the claim that time and space are not intellectual *seems* to turn on the fact that they are not general, discursive concepts. What is puzzling about this is that even if these arguments succeed, they alone will not yet show that the concepts of time and space are not intellectual, for given the way Kant distinguishes between these faculties, what is required is a demonstration that these representations are not abstract. What I will attempt to show in this chapter is that there are two different reasons why the Leibnizians regarded the concepts of time and space as intellectual. On the one hand, they are intellectual since they are general, discursive concepts which the mind originally acquires through the logical use of the understanding. On the other hand, the Leibnizians also maintained that the concepts of time and space can be defined in terms of certain fundamental categories of being, and that the concepts of these beings are among those which Kant identifies as abstract, and which are also said to belong to the real use of the intellect. In light of this, I then explain how these facts can help us understand both the arguments and general strategy Kant employed to show that the representations of time and space are not intellectual.

In the fourth chapter, I then begin my reconstruction of Kant's theory of time and space by turning to the arguments Kant advanced to show that the representations of time and space are non-empirical. Having shown in Chapter 1 that Kant thinks the representations of time and space are actively generated through an innate law of the mind which coordinates the non-spatial and non-temporal sensations originally given by affection, in this chapter I complete my account of Kant's theory of sensory cognition by identifying and then reconstructing the arguments Kant gave in support of this thesis. I show that these arguments are the very ones that appear in §14.1 and §15.A. In §4.1 I begin with a preliminary statement of the arguments in §14.1 and §15.A, and outline the various

philosophical and interpretive difficulties presented by both. Identifying these problems from the outset is of some importance for, as I hope to show, one major benefit of my interpretation is that it can provide a satisfactory resolution to these problems in a way that others cannot. To that end, in §4.2 I provide an overview of the various alternative interpretations which have thus far appeared in the literature and show that none of these interpretations are successful, either because they conflict with important aspects of ID, or because they are vulnerable to the objections canvassed in §4.1. With these preliminaries out of the way, I then present my own interpretation of the arguments in §4.3 and §4.4. I discuss the argument for the non-empirical origin of space from 15.A in §4.3, while the corresponding argument for the non-empirical origin of time is discussed in §4.4. The results of these separate discussions are then taken up in the §4.5, where I conclude by explaining how the objections outlined in §4.1 can be adequately addressed in light of the interpretation defended in §4.3 and §4.4.

In the fifth chapter, I complete my reconstruction of Kant's theory of time and space by providing an interpretation of the arguments Kant advanced to show that the representations of time and space are not concepts of the intellect. I argue that Kant's basic argumentative strategy is quite different from what many commentators have supposed. On the standard interpretation, the reason the concepts of time and space are sensory is because they are *singular*, rather than *general* representations. Kant does in fact attempt to show this, but I argue that this is only one part of his overall strategy. If the interpretation of the sense-intellect distinction defended in Ch. 2 is correct, then the question of whether the representations of time and space are intellectual depends on whether their intentional content is abstract or concrete. Putting this together with the analysis of the Leibnizian-Wolffian account of time and space in Ch. 3, I then show that there are two additional sets of arguments which Kant advanced to refute the Leibnizians, and which are absolutely essential for his overall project in ID. In the first set of arguments, which we will discuss in section §5.1, Kant tries to show that the Leibnizian-Wolffian attempts to define time and space through the concepts of order, impossibility, ground (etc.,) are necessarily inadequate. For Kant, the intentional content of the concepts which the Leibnizians use to define time and space is *abstract*, and the reason why time and space cannot be concepts of the intellect is because they cannot be conceived of through any concepts of this sort. In §5.2 and §5.3 I then turn to the next set of arguments, which are closely connected to the first and are intended to provide additional confirmation of Kant's basic claim that time and space are not intellectual. In his second set of arguments, Kant claims that if the concepts of time and space are intellectual, then their fundamental determinations should be derivable a priori through universal principles prescribed by reason; but, contrary to the Leibnizians, Kant insists that the fundamental properties of time and space cannot be derived from any such principles of the intellect. After obtaining these results, I then explain how Kant used these arguments to show that time and space are fundamentally sensory, and thus do not represent things as they are in themselves, and also show that this interpretation can provide us with a great deal of insight on what things in themselves are actually like.

Chapter 1

As we noted in our introduction, in order to properly reconstruct the arguments which are designed to show that the representations of time and space are both non-empirical and non-intellectual, it will be necessary to first uncover the grounds for the distinction between sense and intellect. Although Kant begins by first introducing this distinction, and then discussing each faculty in turn, I will proceed in the opposite direction, and first discuss the way Kant characterizes each of these faculties one by one. The goal of present chapter is to explain Kant's theory of sensory cognition as it appears in ID. In the next chapter, I will then turn to his account of intellectual cognition.

Before we begin our discussion, a few preliminary remarks are in order. In order to reconstruct Kant's theory of sensory cognition in ID, part of our task will involve getting clear on the basic technical terminology which Kant employs when discussing the nature of cognition. For our purposes, the most important of these terms include 'intuition', 'concept', 'coordination', 'sensation', 'matter', 'form' and 'appearance'. One problem that we face from the very outset is that Kant does very little to explain the meaning of these terms in ID. Although terms like 'intuition', 'sensation', 'coordination' (etc.,) are constantly used throughout ID, they are rarely defined explicitly; instead, they are usually employed throughout the discussion as if their meaning were already clear and well established. For this reason, it will occasionally be necessary to supplement the textual evidence provided by ID by looking at the way these terms are used in other texts, both Kant's own as well as those of his predecessors, though in the case of Kant's other works those which are closer in time to the *Dissertation* will be preferred over others.

One question worth asking here is whether or not the *Critique* should also be used as a source of evidence when trying to determine the meaning of Kant's terminology in ID. Unlike ID, Kant begins the Aesthetic by defining each of the terms which are central to the discussion which follows; this is not to say that these definitions are precise, or that they are used consistently throughout the *Critique*—far from it—but only that they provide the reader with much more to go on compared to the relative lack of attention which Kant gives to defining his terminology in the *Dissertation*. Nevertheless, in spite of the many similarities between these two texts, it is important to recognize that it is far from obvious whether the definitions which appear in the Aesthetic can be used as a reliable guide for interpreting ID. Although much of the terminology employed in the *Critique* is first introduced in the *Dissertation*, and is similar in both works, there are a number of important differences, both in the way Kant employs his central terms, as well as the general philosophical framework which underlies their use. In the first place, many of the terminological distinctions which are central to Kant's discussion of sensory cognition in the *Dissertation* are absent in the *Critique*, such as the key distinction drawn between sensitive (*sensitivus*) and sensual (*sensualis*) cognition. Other distinctions, such as the one Kant draws in ID between coordination (*coordinatio*) and subordination (*subordinatio*), while not completely absent from the *Critique*, are nevertheless used quite differently in each work: thus, in the *Dissertation* coordination is identified as the cognitive act responsible for generating the representations of time and space, though this

is not the case in the CPR. More importantly, though there are a number of terms which appear in both works, the way they are defined in the *Critique* is often quite different from the way they are used in ID. For example, while the distinction between intuitions and concepts is central to the theory of cognition developed in both works, in the *Critique* Kant is explicit that these species of representation are mutually exclusive. But this is not the case in ID, where Kant does not distinguish between concepts and intuitions, but instead between singular and general concepts: in the *Critique* no intuition can be a concept, but in ID Kant treats singular concepts as though they were coextensive with intuitions.²³ This comes out especially in reference to time and space, which Kant frequently refers to as *both* intuitions and concepts, sometimes even within the same sentence, as in §15.C where he writes that the “concept of space is thus a pure intuition” and a “singular concept.”²⁴

Admittedly, it is not entirely clear whether this last difference between ID and the *Critique* is *merely* terminological or whether it instead reflects a fundamental change in the underlying philosophical views of each text. In the *Critique*, intuitions and concepts are characterized according to two distinct criteria, namely, immediacy and singularity, on the one hand, and mediacy and generality on the other: an intuition is a representation that stands in an immediate relation to the object represented and the content of an intuition is a singular entity, while a concept is a representation that relates to its object mediately and whose content is a feature, or set of features, that different individual objects share in common with one another.²⁵ This is also true in ID, though Kant usually

²³ Given the way Kant distinguishes between intuitions and concepts in the CPR, there can be no such thing as a *singular* concept. For Kant, generality is an essential mark of every concept, so that it is “a mere tautology to speak of universal or common concepts” (*Jäsche Logic* §1. Ak 9:91): intuitions are singular representations, while concepts are *always* general, and so a singular concept is a contradiction in terms. But Kant did not draw such a sharp distinction between concepts and intuitions until sometime in the 1770s, and until then he frequently spoke of singular concepts, both in his published writings as well as in his lecture notes. This is also true in ID, where Kant first drew the distinction between intuitions and concepts, but constantly refers to intuitions as *singular* concepts. For a summary of the development of Kant’s theory of concepts see Lanier Anderson, *The Poverty of Conceptual Truth* (Oxford, 2015), pp. 380-382.

²⁴ Space and time are identified as singular concepts and intuitions in Ak 2:396, 397, 399, 402, 405, 410-411, 413. Kant’s terminology is even more slippery when discussing time, which he also refers to as an *idea* throughout §14 (though most certainly not in the same sense in which ‘idea’ is used in the CPR). This is not to say that Kant is not also loose with his terminology in the *Critique* (he also refers to time and space as *concepts* throughout the metaphysical exposition), but only that in the *Critique* Kant insists on a sharp distinction between intuitions and concepts which is absent in ID.

²⁵ One of the central interpretive problems that continues to trouble commentators concerns the relation between these two criteria, whether singularity and generality are the basic defining marks of intuitions and concepts, or whether the immediacy-mediacy criterion is more fundamental. This problem is compounded by the fact that which criterion Kant uses to distinguish intuitions from concepts varies from one text to another. In the opening sections of the Aesthetic, intuitions are defined through immediacy (“In whatever way and through whatever means a cognition may relate to objects, that through which it relates immediately to them...is **intuition**” [A19/B33]), and no mention is made of singularity; on the other hand, throughout Kant’s writings on logic, the distinction is often based solely on whether the content of a representation is singular or general, as in the *Jäsche Logic*, §1, Ak 9:91:

All cognitions, that is, all representations related with consciousness to an object, are either *intuitions* or *concepts*. An intuition is a *singular* representation (*repraesentatio singularis*), a concept a universal (*repraesentatio per notas communes*).

only mentions the singularity criterion when discussing intuitions: intuitions are described as singular in Ak 2:399, 403, & 405, and are identified as singular concepts, or, representations whose content is an individual entity, in Ak 2:396, 397, 402, 405, & 413. Immediacy is also identified as a mark of intuitive cognition, but *only* once (“...all our intuition is bound to a certain principle of form, and it is only under this form that anything can be *apprehended* by the mind immediately or as *singular*, and not merely conceived discursively by means of general concepts” [Ak 2:396]), and although mediacy is not explicitly identified as a mark of concepts anywhere in ID, it seems to be implicit insofar as general concepts are repeatedly described as ‘discursive’, or, as representations that relate to their objects through marks, which is how ‘mediacy’ is defined elsewhere.²⁶ Moreover, in both ID and the *Critique*, when Kant denies that time and space are concepts, his main concern *seems* to be to show that they are not general, discursive concepts: since we “conceive all actual things as situated *in* time, and not as contained *under* the general concept of time, as under a common characteristic mark”, it follows that “*the idea of time is singular and not general*” and that the “*idea of time is an intuition*” [Ak 2:399]; the same argument is used to show that the “concept of space is a singular representation” not “an abstract common concept” [Ak 2:403]. Perhaps, then, this difference is merely terminological and nothing of philosophical significance turns on whether Kant refers to these representations as singular concepts or intuitions.

Nevertheless, while it is possible that these differences are merely superficial, we have already seen that there are a number of substantive philosophical differences between the *Critique* and ID. And, insofar as that is the case, it does not seem that we can simply assume that the way Kant uses his basic terms in the CPR can tell us how these terms are to be understood in ID. At the very least, to avoid prejudging the issue, in the discussion that follows I will attempt to focus on the *Dissertation* alone, at least as far as possible. This does not mean that the *Critique* is of no use, but only that passages from the *Critique* should not be appealed to as primary sources of evidence, especially to settle some contentious issue—at least, not unless there is some good reason to do so.

With these points in mind, we can now turn to our central task. I begin in §1.1 with a preliminary discussion of the account of sensory cognition which appears in §4 of ID. I then discuss the various components of sensory cognition one by one, beginning with the form of intuition and appearance §1.2, and then turning to the matter of intuition and appearance in §1.3. Briefly, in §1.2 I will argue that the form of intuition is an innate disposition present in the mind from birth which is responsible for coordinating the sensations given through affection, that the forms of appearance are the spatiotemporal determinations of the objects represented through the senses, and that the form of appearance is a product of the mind’s coordinating activity. In §1.3 I argue that sensations

Finally, in other passages Kant uses both criteria, as in the *Stufenleiter* passage where an intuition is a representation that is “immediately related to the object and is singular” while a concept “is mediate, by means of a mark, which can be common to several things” [A320/B376-77]. For a helpful overview of this controversy, see Anderson, *The Poverty of Conceptual Truth*, pp. 214-226.

²⁶ See Falkenstein, *Kant’s Intuitionism*, pp. 42-43 for a helpful explanation of Kant’s use of ‘discursivity’.

constitute the matter of intuition but also, *in a certain sense*, the matter of appearance. Briefly, I argue that what is originally given through affection are sensations which are originally non-spatial and (in some sense) non-temporal. These sensations exist as mental states, and can be described in terms of the particular kind of phenomenal content which they display. However, when these sensations are combined with the forms of intuition, this sensory content is then projected outside the subject, and comes to be represented in time and space as the sensible qualities of appearances.

§1.1 Sensory Cognition

Before turning to Kant's account of sensory cognition, it will be useful to first make a few preliminary remarks about the meaning of the terms 'representation' and 'cognition', for although they are used throughout his discussion, these terms are never defined or even explained. Throughout his writings, Kant generally uses 'representation' as his most basic, generic term for referring to various kinds of mental states. In a number of pre-critical texts, Kant notes that 'representation' is a simple or primitive concept, one that cannot be defined or analyzed in terms of any other [Ak 2:70 & Ak 2:280]. As a primitive concept, 'representation' is the genus which other more specific mental states fall under. Thus, in the Stufenleiter passage from the CPR, the definitions of other kinds of mental content are obtained through division of the concept of representation:

The genus is **representation** in general (*repraesentatio*). Under it stands the representation with consciousness (*perceptio*). A **perception** that refers to the subject as a modification of its state is a **sensation** (*sensatio*); an objective perception is a **cognition** (*cognitio*). The latter is either an **intuition** or a **concept** (*intuitus vel conceptus*). [A319-320/B376-377]

In this passage, representations with consciousness are distinguished into those that relate the mind to an object, or an objective representation, and those that relate it to one of its own states, a subjective representation. The difference here has to do with whether the intentional content of the representation is a state of the subject or something outside the subject. An objective representation, in other words, is any mental state that relates an act of the mind to some content in the world, to something that exists outside the subject. These objective representations are called cognitions, and intuitions and concepts are cited as examples of such cognitions.²⁷ At the most basic level, then, a cognition is a representation with intentional content.²⁸ Kant uses 'cognition' in much the same way throughout the ID, although, unlike the Stufenleiter passage, there cognitions

²⁷ Cf. *Jäsche Logic*, §1, Ak 9:91.

²⁸ Although 'representation' is generally used as the generic term for *any* kind of mental state, it is also occasionally used in a more restricted sense to denote any mental state with intentional content (as in A108, where we are told that "all representations, as representations, have their objects"). This narrower use of the term corresponds to the way Kant uses 'cognition' in ID, which he generally uses as his most basic term for a representation with intentional content [see Ak 2:387, 392-393, 397, 413]. The kinds of examples of mental states which are representations, but which lack intentional content, might include feelings, like pleasure or pain, or any other states which can be regarded as modes of a thinking subject but which do not refer to anything other than themselves.

are not always distinguished into intuitions and concepts, but often into concepts that are either singular or general. In addition, although a cognition is a representation with intentional content, these contents are not restricted to singular and general concepts, but also include judgments and inferences [Ak 2:393]. At bottom, then, in ID a cognition is a representation with intentional content, this content is either something which can function as the referent of a term, and is then either something singular or general, or it is a judgment, or an inference,²⁹ or some other such content.³⁰

At the start of his discussion of human cognition in §3, Kant tells us that cognitions differ according to the objects which they represent and that, in particular, cognitions can be classified according to whether their intentional content is something sensible or intelligible. Kant then proceeds to discuss each kind of cognition one by one, starting with sensory cognition in §4, and then turning to intellectual cognition in §5. Given how important Kant's account of sensory cognition is to his overall aims and strategy in ID, one would expect to find in §4 a careful, detailed exposition of the nature of sensory cognition. But one's expectations are quickly dashed. The discussion is brief, even terse. The reader is provided with a summary which can only be described as perfunctory. Not only are many of the claims which Kant makes in this section extremely obscure, much of what he says also appears to be unmotivated; and when Kant does attempt to defend some of the claims he makes in the course of his exposition, his argument is extremely compressed. Even worse, there are a number of places throughout the passage where Kant's terminology is simply ambiguous, leaving much of what he says open to a number of different interpretations. Nevertheless, for all that, since this section is supposed to contain Kant's basic account of sensory cognition, it will be necessary to try and come to terms with it. Given its obscurity, the best way to proceed will be to start by quoting the passage in full and then to go through it line by line. Along the way I will try to identify, and then resolve, each of the various issues which arise over the course of Kant's brief discussion. Although §4 does contain his basic account of sensory cognition, and should be taken as the starting point for any interpretation of ID, it will not be possible to get clear on many essential details of Kant's view if we are restricted to the contents of that passage alone; and so, as we go through the section, I will try to elaborate on what Kant says by supplementing the basic picture sketched in this passage with what we are told in the rest of ID. Once we have gotten clear on §4, I will then fill in further details in the sections that follow.

²⁹ In the early-modern period, it was standard to treat concepts (both singular and general) as the most basic kinds of representations with intentional content; the reason they were regarded as most basic is because the content of every other cognition was thought to include concepts as their basic components, for judgments are formed by connecting concepts, while inferences are formed from judgments—this, at least, is the standard account one finds in logic textbooks used at the time. As is well known, Kant ultimately rejects this account in the CPR, where he maintains that judgments are more basic than concepts, but it is not clear whether this was already his view in ID (though Kant does appear to assert that judgments are more basic than concepts already in 1762 in the *False Subtlety of the Four Syllogistic Figures*, Ak 2:58-61).

³⁰ There is, of course, a good deal more to say about Kant's use of the term 'cognition'. For further discussion see Eric Watkins & Marcus Willaschek, "Kant's Account of Cognition", *Synthese* 197 (8): 3195-3213 (2020).

With these preliminary remarks in hand, we may now turn to the passage which encapsulates Kant's basic picture of sensory cognition.

In a representation of sense there is, first of all, something which you might call the *matter*, namely, the *sensation*, and there is also something which may be called the *form*, the *aspect* namely of sensible things which arises according as the various things which affect the senses are co-ordinated by a certain natural law of the mind [*sensibilium species quae prodit, quatenus varia, quae sensus afficiunt, naturali quadam animi lege coordinantur*]. Moreover, just as the sensation which constitutes [*constituit*] the *matter* of a sensory [*sensualis*]³¹ representation is, indeed, evidence for the presence of something sensible [*praesentiam quidem sensibilis alicuius arguit*], though in respect of its quality it is dependent upon the nature of the subject in so far as the latter is capable of modification by the object in question, so also the *form* of the same representation is undoubtedly evidence of a certain reference or relation in what is sensed though properly speaking it is not an outline or any kind of schema of the object [*testatur utique quendam sensorium respectum aut relationem, verum proprie non est adumbratio aut schema quoddam obiecti*], but only a certain law, which is inherent in the mind and by means of which it co-ordinates for itself that which is sensed from the presence of the object [*sed nonnisi lex quaedam menti insita, sensa ab obiecti praesenti aorta sibi met coordinandi*]. For objects do not strike the senses in virtue of their form or aspect. Accordingly, if the various factors in an object which affect the senses are to coalesce into some representational whole [*in totum aliquod*

³¹ I have modified this translation by substituting 'sensory' for 'sensible' (the term used in the original translation) and the reason I have done so is because the selection of the latter is incongruous with the rest of the translation. Among the terms which Kant uses to describe the cognitions which belong to the faculty of sensibility are *sensitivus* (or 'sensitive'), *sensibilis* (or 'sensible'), and *sensualis* (which I sometimes translate as 'sensual', other times as 'sensory'). As the translator correctly notes on pp. 487-488n12, Kant consistently uses 'sensitivus' to characterize the subjective aspect of a cognition, and never uses it to characterize the objects of a cognition; in contrast, 'sensibilis' is consistently used to characterize the objects of cognition, never the subjective aspect or act of cognition. In recognition of this fact, the translator uses 'sensitive' for 'sensitivus' and 'sensible' for 'sensibilis'. But then to translate 'sensualis' as 'sensible' is obviously a mistake, for this implies that sensation constitutes the matter of a sensible object (or that sensation is something contained in the sensible objects we perceive), though that is most certainly not what is dictated by the text since Kant uses 'sensualis', not 'sensibilis'. Indeed, as we will observe, Kant always uses 'sensualis', like 'sensitivus', to refer to the subjective aspect of a cognition.

My choice of 'sensory' here requires some explanation. As we will see later, in ID Kant notes that there are two distinct aspects of any act of cognition which belongs to the faculty of sensibility, namely, the sensual (or matter) and the sensitive (or form). Unfortunately, however, Kant is not always careful when using this terminology, since he frequently uses 'sensual' to refer to a representation of sense that contains *both* matter and form—even though, strictly speaking, this only refers to the matter of such a representation. For this reason, I will use 'sensory' to refer to a representation of sense that contains both these aspects, rather than 'sensual', since this will allow us to distinguish between those cases when Kant is referring only to one aspect of such a cognition, rather than a cognition that contains both. Thus, the reason I have elected to translate 'sensualis' with 'sensory' in the passage cited above is because Kant is here describing *one* of the two aspects of a sensory cognition. The reason I have elected not to use 'sensitive' for this purpose is because Kant later refers to the pure intuitions of time and space as *sensitive*, but is careful to note that these intuitions do not contain anything *sensual*. We will return to this issue in Ch. 2 when we discuss Kant's distinction between the sensual and sensitive at greater length. For now, nothing more hinges on it.

repraesentationis coalescent] there is needed an internal principle in the mind, in virtue of which those various factors may be clothed with a certain *aspect* [*speciem*] in accordance with stable and innate laws [Ak 2:392-393].

Through sensory cognition the mind represents sensible objects, and these representations of sense are composed of both matter and form: the matter is sensation, while the form is a certain aspect of sensible things that arises when the mind coordinates what is sensed. The first problem is that it is not entirely clear whether the phrase ‘representation of sense’ is supposed to refer to the *objects* represented through the senses or instead the mind’s *act* of representing those objects. The term ‘representation’ can either be used to refer to a state of the subject, the mental *act* of representing a thing, or to the intentional object of that state, the *thing* represented by that act. This ambiguity was pervasive throughout the early-modern period and Kant himself is not always immune to it. Generally speaking, in the *Critique of Pure Reason* the terms ‘intuition’ and ‘appearance’ are used to mark this distinction: an intuition is an act of awareness rather than the content referred to by that act (i.e., “a *representation* that stands in an immediate *relation to an object*”), while an appearance is what the mind is aware of through an intuition, (i.e., “the undetermined object of an intuition”) [A19-A20/B33-34; my italics]. Since these same terms also appear in ID, and it is clear from the way Kant uses them that they are supposed to mark the same distinction, it will be useful to adopt this terminology when discussing this passage.³²

Are the representations of sense intuitions or appearances? Unfortunately, Kant appears to be talking simultaneously about both, at least initially. On the one hand, the

³² As a species of representation, ‘intuition’ suffers from the very same act-object ambiguity as ‘representation’, but although Kant does occasionally appear to use it to refer the content of a representation (as when he refers to space and time as pure intuitions in the CPR), usually ‘intuition’ refers to the act-side of a representation. And this is true throughout ID: that an intuition is an *act* of representing rather than the *thing* represented is something that comes out in his repeated use of the phrase ‘intuition of an object’, as in, for example, Ak 2:405 (“intuition of an *object*”), Ak 2:413 (“sensitive cognition, under which alone the *intuition* of an object is possible” and again “there is no sensitive intuition of them [immaterial substances], nor any representation of them under such a form”), and Ak 2:414* (“...an intuition of an entity is only ever given if that being is contained *in space and time*”). While an intuition is an act of representation, the intentional object of an intuition is variously designated through ID as ‘appearance’ or ‘phenomenon’: in §4 we are told that “things which are thought sensitively are representations of things *as they appear*” [Ak 2:393]; the “object of sensibility is the sensible” and these objects are called phenomena [Ak 2:392]; and in Ak 2:397, Kant writes that “Whatever, as object, relates to our senses is a phenomenon.” Note, however, that ‘phenomena’ and ‘appearances’ are not synonymous: although both appearances and phenomena are the intentional objects of a sensory intuition, they differ from one another according to whether or not the object represented is also thought through a general concept.

...in the case of sensible things and phenomena, that which precedes the logical use of the understanding is called *appearance*; while reflective cognition, which arises when several appearances are compared by the understanding is called *experience*...The common concepts of experience are called *empirical*, and the objects of experience are called *phenomena*. [Ak 2:394].

Experience occurs when appearances are subordinated to general concepts and the objects of experience are phenomena. What this means is that phenomena are the appearances represented through intuition *after* those appearances have been subordinated to general concepts; in that case, an appearance must be the object of a sensory intuition *before* it is represented through a concept, it is, in the words of the CPR, the undetermined object of an intuition, i.e., undetermined by a concept.

matter of a representation of sense is sensation, and that seems to imply that representations of sense are intuitions, not appearances. After all, if representations of sense are appearances, then sensations constitute the matter of appearance; but sensations, we are also told, are modifications or states of the representing subject,³³ though sensible objects are obviously not modes of a thinking subject—they are the intentional objects of mental states, not themselves mental states.³⁴ On the other hand, at

³³ That sensations are modes of the subject is clear from the start of §4, where Kant writes that “whatever in cognition is sensitive is dependent upon the special character of the subject in so far as the subject is capable of this or that *modification by the presence of objects*” and that “these modifications may differ...according to the variations in the subjects” [Ak 2:392; my italics]. When Kant then turns to discuss the two components involved in a sensory cognition (namely matter and form), the modifications caused by the presence of an object are identified as sensations, and these sensations are said to be dependent upon the nature of the subject and always involve the modification of the subject [*est modificabilis*]. Thus, whatever else sensations might turn out to be, they are first and foremost modes of the subject. Similarly, in the *Critique* sensations are defined as the effects an object has on the subject’s representative capacity [A20/B34] and, as effects, sensations would seem to exist as states of the subject.

³⁴ “Die Empfindung bezieht sich auf den [Zustand des Subjects] Sinn, die Erscheinung auf den Gegenstand, sofern er ein object der Sinne ist”, Ak 2:291, Refl. 658 (1769-1770). It should be noted that this consideration only gives us prima facie evidence for thinking that ‘representations of sense’ are intuitions, not appearances, for some commentators have maintained that Kant does in fact believe that sensations constitute the matter of appearance, and some of these commentators have also argued that, if this is correct, then appearances are after all identical to mental states. T.E. Wilkerson, *Kant’s Critique of Pure Reason* (Oxford: Clarendon Press, 1976), pp. 25-28 and Jonathan Bennett, *Kant’s Analytic* (Cambridge: Cambridge University Press, 1966), pp. 127-129. Nevertheless, as these commentators admit, identifying sensations with the matter of appearance appears to lead to certain insurmountable objections, and, if that is correct, charity seems to dictate that we should not attribute this view to Kant unless we are absolutely forced to do so. Here it is worth briefly mentioning just what these problems are. If sensations are the matter of appearance, then Kant’s view turns out to be the same as Berkeley’s. According to Berkeley, the sensible objects we perceive are identical to certain internal mental states—at least this is what appears to be implied by the pleasure-pain argument in the *Three Dialogues*, where Berkeley argues that the sensible qualities of bodies (like heat, sweetness, etc.,) are all identical to certain feelings (or experiences) of pleasure and pain, and, since bodies are nothing more than collections of sensible qualities, the bodies we perceive must all be constituted by these kinds of internal mental states. Many have argued that this view is incoherent, either because it fails to recognize the distinction between a mental state and the content that state refers to, or, because it is guilty of the (alleged) fallacy of spatializing our mental states.

...it is downright nonsense to say that experiences are spatially related. My visual impressions of the concert are neither to the left nor to the right, neither to the top nor the bottom, of my auditory impressions. They are simply not the sort of things that have spatial properties at all. Conductors, orchestras, and members of the audience are certainly in space and are spatially related to each other, but my perceptions of them are not. One wants to say that Kant’s slogan, ‘space and time are pure forms of intuition’, cannot make literal sense unless we neglect the important distinction between *objects* which are spatial, and *perceptions* of objects, which are not.

T.E. Wilkerson, *Kant’s Critique of Pure Reason*, p. 26; cf. Lorne Falkenstein, “Kant’s Account of Sensation”, *Canadian Journal of Philosophy* 20 (1991) p. 68 and H.A. Prichard, *Kant’s Theory of Knowledge* (Oxford: Clarendon Press 1909), pp. 75-76. One possible response to this objection comes from Falkenstein. Though he denies that sensations constitute the matter of appearance, Falkenstein *Kant’s Intuitionism*, pp. 390-391n34 claims that there isn’t anything necessarily incoherent about attributing spatial attributes to sensations or intuitions—but only, that is, if one recognizes that these are not *mental* states, but instead *physical* states of the body, for in that case there is nothing incoherent about visual sensations being spatially related to auditory sensations “since the former are felt in my eyes, the latter in my ears” [ibid]. But even if sensations and intuitions are located in space, they must still be distinct from the contents they refer to, for the intuition of an orchestra does not occupy the same place as the orchestra, and so even if both are located in space, they must be distinct if they have different locations. Moreover, as I will argue later, even if it isn’t “downright nonsense” to say that things like experiences are located in space,

the start of the passage Kant appears to be using the term ‘form’ to refer to a determination of sensible objects, for he tells us that form is that “aspect” of sensible things that arises (or which they come to have) *after* the mind has coordinated what is sensed; this aspect of a sensible thing is thus a determination of the things sensed, and, although it is not stated explicitly here, it is clear from the rest of ID that this aspect refers in particular to the spatiotemporal determinations of the objects represented through the senses (see below).³⁵ If, then, the representations of sense are intuitions, it follows that

Falkenstein’s response cannot work within the context of the *Dissertation*. In ID Kant endorses a version of mind-body dualism: not only does he deny that the mind and its states are spatially related to the body, he even denies that the mind occupies a location in space; and, since he identifies sensations with *mental* states, it is indeed impossible, strictly speaking, for sensations to constitute the matter of appearances since appearances are spatial though sensations are not.

³⁵ One might question this on the grounds that the form of a representation can often refer to something other than just the spatiotemporal determinations of the objects represented. For example, on Aquila’s reading of this passage (as well as others like it), the form of intuition is that which is responsible for the object-directed character of a representational state: an intuition acquires intentional content through the form of that intuition. See Richard Aquila, *Representational Mind*, pp. 60-69; cf. pp. 39-48. Aquila also claims that space and time are not themselves sufficient for securing this intentional reference to individual things; what is also required is that the sensory contents represented in time and space are synthesized according to some concept, for only then will the mind be presented with an individual. In other words, on Aquila’s reading, the form of intuition always involves some conceptual content (Richard Aquila, *Matter in Mind*, p. 8), and the form of a representation thus always refers to more than just the spatiotemporal determinations of the objects represented.

Generally speaking, when Kant applies the distinction between matter and form to representations, the matter refers to the object of a representation, while the form is the manner or way in which that object is represented. And, in many cases, the form of a representation will refer to an aspect of sensible objects which they come to have after they have been subordinated to a general concept. For example, in the *Jäsche Logic* V, Ak 9:33, we are told that in “every cognition we must distinguish *matter*, i.e., the object, and form, i.e., *the way in which* we cognize the object”, and Kant then illustrates this distinction with an example which is supposed to show that one and the same thing might be perceived differently when it is represented through different concepts: thus, what a European sees when perceiving a house is different from what is seen by a “savage”, for the European has a concept of a house and so perceives the house *as* a house, whereas the “savage” perceiving the same object doesn’t perceive it *as* a house since they lack that concept. In this example, the form of the representation is the concept house, while the matter is the object represented as a house; but, if in these types of cases the form of a representation refers to something conceptual, why should we assume that Kant is referring *exclusively* to spatiotemporal form in §4 of ID? My reasons are as follows. First, the law of coordination which Kant refers to throughout this passage is later identified as the very faculty responsible for generating the spatiotemporal form of appearances; this law of coordination is not, however, identified as the mental act responsible for representing something through a concept (subordination is responsible for that), and so, presumably the specific form of the things represented which Kant is referring to here is their spatiotemporal form. Second, if the other forms of a representation are all conceptual in nature, then it would be out of place to discuss these in §4, for Kant doesn’t begin to discuss general concepts until he turns to the understanding in section §5; in §4, Kant is discussing the matter and form of a *sensory* representation, not the matter and form of representations *in general*, and that suggests, once again, that it is spatiotemporal form which Kant is referring to here, rather than any of those forms or aspects which sensible objects come to have when they are subordinated to general concepts. Here it is important to recall Kant’s distinction between phenomena and appearances: if phenomena are appearances represented through a concept, then appearances are sensible particulars before they are subordinated to a concept and, as we have already noted, in this passage Kant is describing appearances, or representations of *sense*, not representations of sense and intellect. Third, the spatiotemporal form of appearances is more basic than any of those forms which sensible objects are perceived to have when they are subordinated to general concepts, for these appearances cannot be subordinated to any concepts at all unless they first appear in time and space; consequently, these objects must first be represented as having spatiotemporal

our intuitions have spatiotemporal form. But this too appears to be absurd. While it is true that acts of representing occur in time, and that time may be the form of intuition, the same cannot be said of space—for how could an intuition, as an *act* of representing, have spatial form?³⁶ If intuitions are mental states, and space is the form of intuition, then our mental states are spatial; but Kant explicitly denies in ID that the mind is anything spatial or extended, he even denies that it occupies a position in space [Ak 2:419],³⁷ and

form before they can subsequently be represented according to certain concepts. But if that is right, the form of a representation of sense should refer, first and foremost, to the spatiotemporal form of an appearance. For these reasons, although the form of a representation *can* refer to more than just the spatiotemporal determinations of the objects represented, one should still assume that in §4 Kant is specifically referring to spatiotemporal form rather than any other kinds of forms or aspects which sensible objects might be represented as having.

³⁶ Kant himself indicates this contrast in the Corollary to §15:

Indeed, of these concepts *the one* properly concerns the intuition of an object, while the other concerns its *state*, especially its *representative* state...[Time] more nearly *approaches a universal and rational concept*, for it embraces in its relations absolutely all things, namely, space itself and, in addition, the accidents which are not included in the relations of space, such as the thoughts of the mind [*cogitationes animi*]. [Ak 2:405]

Note that Kant is explicit here that the mind's *cogitationes* are modes which do not exist in space. It is not entirely clear whether 'cogitationes' should be translated as 'thought', since that term suggests a representation that is conceptual in nature. It seems to me that it is equally plausible to translate the term as 'cognition'; but if that translation is accepted, then it seems to follow that any representation with intentional content is a mental state which is non-spatial—and, in particular, since intuitions are species of cognition, and cognitions are not in space, then intuitions also cannot exist in space.

³⁷ In the *Dissertation*, Kant tells us that the source of his own view on the nature of the mind and its relation to the body is based on the account defended by Leonhard Euler in the *Letters to a German Princess*. In the *Letters*, Euler defends a version of mind-body dualism: minds and bodies are two distinct kinds of substances, bodies are material substances whose properties include "Extension, *inertia*, and impenetrability—qualities which exclude all thought", whereas minds are immaterial substances "endowed with the faculty of thinking, of judging, of reasoning, of feeling, of reflecting, of willing, or of determining in favor of one object preferably to another", Euler, *Letters to a German Princess*, Letter LXXX. One important aspect of Euler's view is that he not only denies that the mind is extended, he also insists that it cannot occupy any location in space. Euler acknowledges that this claim requires some clarification, for since experience demonstrates that minds and bodies causally interact with one another, and that every created mind is united with some particular body in space, there must be some sense in which the mind is *present* in the physical world. What Euler proposes is that the mind is present throughout those regions of space which are occupied by the body, not in the sense that the mind is literally located there, but only in the sense that the location of the body is a region of space over which the mind exercises its causal powers. See Euler, *Letters*, XCII-XCIII. Kant explicitly endorses this account in the *Dissertation* [Ak 2:414 & Ak 2:419]. Following Euler, Kant distinguishes between two kinds of presence, the first of which is referred to as *local presence*, and which consists in the occupation of a location in space, while the second kind of presence, which he calls *virtual presence*, is defined in terms of an action whose *effects* have a location, though the action itself does not. Kant agrees with Euler that if the mind is an immaterial substance, then it does not have any spatial attributes and cannot exist in any spatial location; but, although the mind does not have a local presence in space, it is still present in the world by virtue of the causal influence it exerts on the body. Since the mind produces effects in the physical world through the causal influence it exerts on a particular body, one can attribute a kind of location to the mind in which the sphere of its causal activity defines its presence in space; but this presence is derivative, the mind is not literally extended or diffused throughout the body, nor does it occupy any location in space—the location of the mind in space instead derives from the local presence of the body it is causally connected with, and since it controls the whole body, the mind is (virtually) present throughout that whole region of space.

if that is right then surely none of its states could be spatial either.³⁸ Intuitions are representations of things that are spatial, but they are not themselves spatial, and so space cannot *literally* be the form of intuition.³⁹

³⁸ Though I am assuming that, for Kant, all representations are *mental* states, some have denied this. Falkenstein, *Kant's Intuitionism*, pp. 119-120 argues that the only kinds of cognition which Kant believes may require the presence of an immaterial substance are those which are purely conceptual in nature and involve the faculty of the intellect; others, like intuition, sensation, or any other lower-order representations, can all be reduced to physical processes in the body, and that means they are not states of an immaterial substance, but physical states of the body. In that case, even if Kant is willing to allow that the mind and its states exist outside of space, this does not mean that intuitions, sensations, or any other lower-order cognitions must also be non-spatial, for since these only exist as states of the body, they are no less spatial than the body itself. But it is unlikely that this was Kant's view in the *Dissertation*. As we have already seen, it is clear that Kant endorses some version of mind-body dualism in ID. Though Kant has little more to say about the mind and its states in ID, a similar account of the mind also appears in *Dreams of a Spirit-Seer*, where Kant again denies that the mind has any extension or local presence anywhere in space, and likewise asserts that the only sense in which the mind is present in the physical world is that the effects of its activities appear in space ("immediate presence in the totality of space only proves a sphere of external activity" [Ak 2:324]) [Ak 2:321-328 & 370-371]. Cf. *Metaphysik Herder*, Ak 28: 146-147 & *Metaphysik L1*, Ak 28: 281-282. Given these similarities, it is not unreasonable to suppose that the more detailed account provided in *Dreams* as to the nature of immaterial substances provides at least *some* evidence as to how one should understand the nature of Kant's dualism in ID. Now, in *Dreams* Kant repeatedly suggests that sensations and feelings are mental states: for example, in Ak 2:324-325 Kant discusses whether the mind is present throughout the body, and he notes that if certain *feelings* appear in different parts of the body (e.g., a pain in the toe), and the mind must also be present wherever those feelings are experienced, then the mind must be present throughout the body. Kant *accepts* this conclusion, but in that case he must be assuming that these feelings are mental states, for the question of whether the mind must be present wherever these feelings appear only makes sense if feelings are mental states that belong to the mind. Of course, there are important qualifications that need to be made here. As Kant himself notes, to say the soul is present throughout the body does not mean the soul is diffused throughout the body—since then it would be extended—and he also rejects the possibility that the mind is located in a particular place in the body, such as the brain, for nothing immaterial can be literally located in (or fill) a part of space [Ak 2:323-324 & 326]. The only sense, then, in which these feelings are present in those locations is that they are, somehow or other, virtually present (whatever that might mean in this context). No doubt there is a good deal more that needs to be explained here, but for now all that matters is that feelings are states of the soul, not the body. And, since these feelings are also referred to as sensations, it follows that at least some sensations are mental states as well. In addition, Kant also repeatedly asserts that the *soul* represents things outside itself [Ak 2:344, 326* & 328*], that representations of particular bodies in space are states of the mind; but such representations are assuredly intuitions, and in that case it follows that intuitions are states of the mind, not of the body. Admittedly none of this is decisive, but on the whole the preponderance of the evidence seems to favor the view that *all* these representations are mental states, and in that case, sensations, feelings and intuitions are all alike states of an immaterial substance, not physical states in the body. If that is right, then Kant appears to share more in common with Euler than just the latter's account of how the soul is present in the physical world. Indeed, the version of mind-body dualism which Kant appears to endorse in *Dreams*, and which is implicit throughout ID, is most likely very similar to the version defended by Euler. For Euler, feelings, sensations and perceptions are all examples of mental states that belong to a thinking substance. Sensations are qualia like smells, tastes, sounds, colors, (etc.), while the examples of feelings include pleasure and pain. As mental states, feelings and sensations cannot be identified with any mode of a material substance; they are, however, correlated to certain motions that occur in the body when external objects stimulate the nerve-endings of the sense organs. When an external object comes into contact with a part of the body, the nerve-endings in that area are disturbed, causing vibrations which, in turn, trigger certain motions in the fibers of the nerves which are then transmitted to the brain. The location in the brain where all the motions in the nerves terminate is referred to as the seat of the soul, for it is only after these motions have been communicated to that part of the brain that the mind finally has a sensation of smell, taste, sound, etc., or a feeling of pain, pleasure, etc. But while this is where the soul is said to "reside", the

Nevertheless, in spite of this initial ambiguity, it is likely from what Kant says in the remainder of the passage that the representations of sense are intuitions, not appearances. Although Kant initially uses the term ‘form’ to refer to the spatiotemporal determinations of sensible objects, in the remainder of the passage the form of sensory representation is instead identified with a certain *act* of the mind which coordinates what is sensed (viz., “the form of the same representation is...only a certain law”). Admittedly what is referred to as ‘form’ at the start of the passage is not this act of coordination, for Kant distinguishes the mind’s coordinating activity from the product of that act (i.e., that “which arises”). This means that Kant is using the term ‘form’ in two distinct senses: sometimes it refers to an act of coordination, or to the manner in which sensible things are represented, while other times it refers to the product of that coordination, to the

soul is not literally located in that part of the brain; the mind is only present there in the sense that it is there that the events which occur in the body are first communicated to the mind; the sensations and feelings experienced by the mind only occur when these material impressions terminate in the common sense, it is here that the mind receives the impressions which cause those mental states. Leonhard Euler, *Letters to a German Princess*, Letters XVIC, LXXX-LXXXIII.

³⁹ In the *Critique*, Kant does repeatedly claim that space and time are the forms of intuition. Some commentators claim that Kant is only speaking loosely, that space is not literally the form of outer intuition, but only the form of what is represented through outer intuition: “Kant also speaks of space and time as *Anschauungen* and as *Vorstellungen* (cf. A24/B38, A31/B46, B147, B160, B207). Surely he does not mean that space and time are mental states, or aspects of them. They are, rather, (intentional) *objects* of such states...and exist only *as* such objects.” Richard Aquila, “Is Sensation the Matter of Appearance?”, pp. 26-27. But others maintain that space and time are forms of both appearances and intuitions: on Falkenstein’s reading, sensations are the matter of an intuition, and, since these sensations are identical to physical states that are literally located in the nerve-endings which terminate in the brain, every sensation is ordered in time and space, and the spatiotemporal order in which these sensations appear constitutes the form of an intuition. See Falkenstein, *Kant’s Intuitionism*, pp. 9-13. Here it is worth noting that in ID Kant never says that space and time are forms of intuition, or even that time and space are pure intuitions; the most that Kant ever says is that the *concepts* of time and space are forms of intuition (or pure intuitions) [Ak 2:397, 399, 400, 402]. Kant does occasionally say that time and space are laws of sensitive intuition [Ak 2:413 & 414*], but in these passages all he means is that nothing can appear to the senses unless it appears in time and space, and this only implies that time and space are the forms of what is intuited, not themselves forms of intuition. A similar point also explains the remarks Kant makes in the following passage.

[human] intuition is bound to a certain principle of form, and it is only under this form that anything can be *apprehended* by the mind immediately or as *singular*...But this formal principle of our intuition (space and time) is the condition under which something can be the object of our senses. Accordingly, this formal principle, as the condition of sensitive cognition, is not a means to intellectual intuition. [Ak 2:396]

Here time and space are identified as the formal principles of intuition, but it is important to recognize just what Kant means by this. In this passage, Kant is offering an explanation as to why the mind cannot intuit singular entities through the intellect. At the start of the passage, he notes that the concepts which are thought through the human intellect are always general, and what this entails is that one cannot individuate particular things by means of concepts alone: no matter how determinate a general concept is, it will always be possible for at least two distinct things to fall under that concept, and that means one cannot represent (or intuit) an individual through a concept of the intellect. Instead, Kant claims that the only way something can be intuited (or represented as singular) by the human mind is if it appears in time and space; time and space are, for the human mind, principles of individuation, since the only way the mind can individuate things is by representing them in different times and places (Cf. A263-264/B319-320). The reason, then, why space and time are principles of intuition is because they are required to individuate the *appearances* represented through intuition, not because they are the forms of an intuition.

spatiotemporal determinations of the objects sensed.⁴⁰ In light of this distinction, and the fact that space itself cannot be the form of intuition, it is likely that the form of intuition is identical to this coordinating activity. The coordinating activity of the mind exists as a mode of the subject, it is a kind of innate disposition “which is inherent in the mind and by means of which it co-ordinates for itself that which is sensed” [ibid], while space is not a mode of the subject but instead the form of the appearances which the mind represents outside itself. So, while space and time are the forms of appearance, the form of intuition is identical to this coordinating activity of the mind.⁴¹

The second component present in every representation of sense is the matter, which Kant identifies with sensation. In contrast to the inconsistency with which he uses the term ‘form’, in this passage Kant consistently uses ‘matter’ and ‘sensation’ interchangeably: thus, “in a representation of sense there is, first of all, something which you might call the matter, namely, the sensation”, and again “sensation constitutes the matter of a sensory representation” [ibid]. Similarly, in §5 we are told that “There thus belong to sensory cognition both matter, which is sensation...” (my italics). The matter of a representation of sense is thus identical to sensation, and if the representations of sense are intuitions, then sensation is the matter of an intuition. This conclusion also appears to be implied by the fact that Kant later describes a pure intuition as “an intuition devoid of sensation” [Ak 2:397], for the relevant contrast here is presumably with an intuition that *contains* sensation.⁴²

⁴⁰ Patricia Kitcher, *Kant’s Transcendental Psychology*, p. 36, also recognizes that Kant’s use of ‘form’ is ambiguous in this very sense. Kitcher introduces the term “process form” to refer to the innate mechanism which *produces* the spatiotemporal features of the objects represented through the senses, and reserves “product form” to denote the spatiotemporal properties of sensible objects which arise as a result of that mechanism. I will use ‘form of intuition’ for ‘process form’ and ‘form of appearance’ for ‘product form’.

⁴¹ This interpretation also explains why Kant is willing to assert that the *concepts* of time and space are forms of intuition. As we will see later, for Kant (as well as many of his predecessors, most notably Wolff and Leibniz), *part* of what is involved in having a concept just is having certain dispositions. This dispositional account will obviously require elaboration, but for now I only want to note that if concepts are tied to dispositions, then it is natural to also assume that the concepts of time and space are identical to the law of coordination, since this is nothing more than the innate disposition the mind has to coordinate the sensations given by affection. But if the forms of intuition are identified as the *concepts* of time and space, and these concepts are nothing more than the innate disposition the mind has to order sensations in a spatiotemporal array, then the forms of intuition are identical to the law of coordination.

⁴² Though Kant identifies the matter of an intuition with sensation in these passages, elsewhere he appears to describe this matter as an effect of sensation, as in Ak 2:406 where he writes that “sensations *give* the matter” (my italics) and again in Ak 2:396, where he writes that “it is only *through* the senses that all the matter of our cognition is *given*” (my italics), and that means it is at least possible that the matter of intuition and sensation are not identical, but are only causally connected with one another. Nevertheless, although some commentators do interpret Kant in this way, I think this interpretation is unlikely given that he identifies matter and sensation in the passages cited above and because these ostensibly conflicting passages can be made consistent with this interpretation without too much difficulty. In regards to the second passage, there is no reason to assume that the matter of intuition is not identical to sensation if what is given through the senses are sensations: if what is given through the senses are sensations, and the matter of intuition is identical to sensation, then the matter of intuition is likewise given through the senses. Similarly, in regards to the first passage, sensations “give” the matter since they are identical to it.

Another passage which might appear to conflict with my claim that sensation constitutes the matter of intuition is Ak 2:406. In the course of his explanation as to how the mind first forms the representations

What we appear to have thus far is this: representations of sense are intuitions, or, mental states with intentional content. Intuitions are composed of two distinct elements: the matter, which is sensation, and the form, which is an innate disposition in the mind responsible for coordinating what is sensed. What I would like to do now is to focus on each of these components of intuition one by one, together with the elements of appearance which they correspond to. In the next section I will discuss the form of intuition, and how it is connected to the form of an appearance; in the section after that I will turn to the matter of intuition and how it is related to the matter of appearance.

§1.2 *Form of Intuition & Appearance*

Having distinguished between the matter and form of a sensory representation, Kant then proceeds to assert that the matter and form of a sensory representation both provide “evidence” for (or “attest to”) something concerning the objects we represent, though what they are said to provide “evidence” for is quite different in each case.

To begin, we are told that the matter of a sensory representation provides “evidence [*arguit*] for the presence of something sensible, though in respect of its quality it is dependent upon the nature of the subject in so far as the latter is capable of modification by the object in question” [ibid]. Though it is not entirely clear just what Kant has in mind here, a bit later we are told that sensations are “as things caused, witnesses [*testantur*] to the presence of an object, and this is opposed to idealism” [Ak 2:397].⁴³ Taken together, what these passages indicate is that the matter of a sensory representation constitutes “evidence for the presence of something sensible” in the sense that the occurrence of a sensation is evidence for the existence of an object outside the mind. What Kant is implicitly assuming, of course, is that the mind is always *passive* in acquiring sensations, or that the mind does not itself actively cause the sensations it experiences: although the *content* of what is sensed is (at least partially) dependent upon the constitution of the representing subject, as well as the state of its receptive organs, a sensation does not depend upon the mind for its *existence*, since the mind only has sensations when it is affected. And so, if the mind has a sensation, there must be some

of time and space through the coordinating activity of the mind, Kant writes that “sensations, while exciting this action of the mind, do not enter into and become part of the intuition.” But if sensations are not contained in these intuitions, how can they constitute the matter of intuition? Here it is important to recognize that Kant is only denying that sensations are contained in *pure* intuitions (which, as we have already seen, are defined as intuitions devoid of sensation). This is clear from the context: Kant first argues that the representations of time and space are not innate, since they are only formed by the mind upon the occasion of experience, but the fact that they are acquired upon the occasion of experience does not mean they are empirical concepts. Although the mind only forms these representations when sensations are first given through affection, these sensations are only required for initiating the coordinating activity which generates the representations of time and space; but that does not mean these representations are *given* by sensation, for it is the coordinating activity of the mind alone which generates these representations. What Kant means, then, is that sensations do not enter into and become a part of the *pure* intuition (i.e., the act of coordination) which generates spatiotemporal form. And in that case, Kant is not denying that sensations are the matter of intuition, but only that they are contained in pure intuitions.

⁴³ Strictly speaking, Kant refers to “concepts of sense” [*sensualis*] here, but *sensualis* is his term for ‘sensation’ throughout ID (see below).

object outside the mind which causes that sensation, which is the very thing that is supposed to “opposed to idealism.”⁴⁴

Kant then makes a parallel claim about the form of a sensory representation. The form of a sensory representation, unlike the matter, is not evidence for the presence of an affecting object, but instead “evidence of a certain reference or relation in what is sensed though...it is not an outline or any kind of schema of the object.” Rather than being a schema or outline of the object sensed, the form of a sensory representation is “only a certain law...inherent in the mind and by means of which it coordinates for itself that which is sensed” from the presence of an object. This claim is harder to understand than the first, especially because in the course of his explanation Kant once again slips back and forth between the two uses of ‘form’ identified earlier. Here it will be useful to cite the relevant passage once again so as to have right in front of us. We are told that the form of a sensory representation is

evidence [*testatur*] of a certain reference or relation in what is sensed, though properly speaking it is not an outline or any kind of schema of the object, but only a certain law, which is inherent in the mind and by means of which it co-ordinates for itself that which is sensed from the presence of the object. For objects do not strike the senses in virtue of their form or aspect. Accordingly, if the various factors in an object which affect the senses are to coalesce into some representational whole there is needed an internal principle in the mind, in virtue of which those various factors may be clothed with a certain *aspect* in accordance with stable and innate laws [Ak 2:393].

To begin, since in the first part of the passage Kant is making a claim about the act-side of representing (namely, that its matter is sensation), consistency seems to require that the form referred to here is also something involved in the act of representing a thing, rather than something in the thing represented: it is the ‘form of the same representation’, which has sensation as its matter. This is also confirmed by the fact that Kant identifies this form with an act of coordination, which is obviously not the form of an appearance but instead something which inheres in the mind and is involved in representing an object. But although Kant begins by talking about the form of the representation, he then immediately proceeds to make a claim about the form of the objects represented. This comes out in the claim that the form of a representation is evidence of a ‘reference or relation’ in what is sensed, for presumably ‘what is sensed’ is a sensible object, while the reference or relation in what is sensed refers to the manner in which those objects (or their parts) are organized: in other words, the ‘reference or relation’ in what is sensed seems to refer to a determination of the objects represented, or, to the form of an appearance.

⁴⁴ Unfortunately, Kant never specifies whether the objects which cause our sensations are things in themselves (and, if so, whether or not these are numerically distinct to the objects sensed) or, alternatively, whether these affecting objects are identical to those perceived through the senses. For reasons of space, we will have to put this issue aside.

With this in mind, what Kant then does is make a claim about the relation between the form of what is sensed, or the form of the appearance, and the form of a sensory representation, or the act of coordination involved in representing that appearance: namely, that one is *evidence* for the other. Specifically, what Kant says is that the form of a sensory representation is “evidence of a certain reference or relation in what is sensed.” Needless to say, it is not at all obvious just what this means, but I take it that Kant is making the following point: the fact that the mind represents something as having a certain form testifies to the fact that those objects (or their parts) are related or organized in a certain way, or, that the objects sensed have the form that the mind represents them as having. The next claim that Kant makes is that the form of the object represented is not an “outline or any kind of schema of the object” but instead an innate law of the mind which coordinates what is sensed. The reason Kant makes this point is because the previous remark—that the objects sensed are represented as having a certain form—might lead one to ask the following question: how is it that those objects come to appear before the mind with those forms or aspects which the mind represents them as having? When Kant then asserts that this form is not an “outline or any kind of schema” of the object sensed, he is providing an answer to this question. The answer Kant gives is that those objects only come to have those forms by virtue of the way they are represented by the mind: the mind does not represent an object as having a certain form *because* there is a reference or relation in what is sensed, rather, there is a reference or relation in what is sensed only because the mind represents that object as having that form. Now, it is important to recognize that when Kant says that the form of the object sensed is not an outline of the object, he doesn’t mean that the object represented by the mind does not have a certain form; what he means is that this form only comes to appear *by virtue of* the way the object is represented. And, when Kant asserts that this form is “only a certain law...inherent in the mind”, what he means is that the form of the object sensed is a *product* of the coordinating activity of the mind, not that it is *identical* to that innate law: the form of the object sensed is something that object appears to have only after the mind has coordinated and “clothed” what it senses with a certain aspect.⁴⁵ That this is indeed what Kant has in mind is confirmed by the fact that in the very next sentence he proceeds to give an argument which is supposed to explain *why* the form is not an “outline or any

⁴⁵ It is precisely here that Kant mistakenly runs together the two senses of ‘form’. When Kant says that ‘it is not an outline or any kind of schema of the object’, the pronoun refers back to the form of a representation and Kant then asserts that this form is only a certain law of the mind which coordinates what is sensed. But when Kant then says that the form of a representation is not an outline of the object sensed he is not merely asserting that this law of coordination is not an outline of the object. This would make the whole argument trivial: the form of representation is a mental state and, for that very reason alone, cannot be the form of the object represented (or at least not its spatial form) and so is obviously not an outline of the object itself—the act of representing an object certainly cannot have the spatial form of the object represented. Kant is again confusing the two senses of ‘form’: he does not mean that the form of what is sensed is identical to the form of representation, but rather that the form of what is sensed is a *product* of the form of representation. That this is indeed the way to interpret this passage is clear from the fact that when Kant proceeds to explain why the form is not an outline of the object sensed, his explanation has nothing to do with the fact that this law is a mental state, but instead with the fact that objects cannot strike the senses by virtue of their form: the form of the objects sensed must be a product of the mind’s coordinating activity, for the mind could not represent sensible objects as having that form unless it coordinates what it senses.

kind of schema of the object” sensed: namely, that objects do not strike the senses in virtue of their form. In other words, the reason why the form is not an outline of the object itself is because the form of the objects we sense is not given by affection; instead, that form is a product of an innate law which coordinates what is given through affection, and the product of this act of coordination is the form of the objects sensed. If this is correct, then what Kant is asserting in this passage is that the form of appearance is a product of the form of intuition, that the objects sensed only come to have a certain form (or appear before the mind with a certain form) after the mind has coordinated what it senses.

Now, for our purposes, what is most important about these remarks concerning the different things that the matter and form of a representation of sense “attest to”, is that they are drawn in parallel with a further contrast concerning the different modes of production of the various components of the representations of sense. What is evident from Kant’s remarks is that the matter and form of a representation of sense differ according to whether the mind is *active* or *passive* in their production. As we have just seen, whereas the matter of a sensory representation is passively received through affection, the form is an *act* of the mind which coordinates what is given by sense through an innate law, and the product of this act is an aspect of sensible things which is not given by affection. Now, in §4 Kant does not explicitly identify just what these forms or aspects are. But in the passages that follow he goes on to repeatedly assert that the representations of time and space are products of the mind’s coordinating activity,⁴⁶ and what this implies is that the spatiotemporal form of sensible objects must at least be included among the various forms produced through coordination. Thus, in Sec. 3 Kant argues that the representations of time and space cannot be derived from what is given by sense [§14.1 Ak 2:398-399 & §15.A 402]—indeed, in the passage on space, Kant says that “things which are in space affect the senses, but space itself cannot be derived from the senses” [Ak 2:402], a remark which should immediately remind us of the passage in §4 when Kant asserts that “objects do not strike the senses in virtue of their form” [Ak 2:393]. Of course, the claim that the representations of space and time are not given by sense does not yet tell us where they originate from; but in the corollary to Sec. 3, Kant writes that each of these representations has “*been acquired*, not indeed, by abstraction from the sensing of objects (for sensations give the matter and not the form of human cognition), but from the very *action* of the mind, which co-ordinates what is sensed by it, doing so in

⁴⁶ This claim is pervasive throughout ID. Thus, in the final paragraph of Sec. 3, Kant writes that space “issues from the nature of the mind in accordance with a stable law as a scheme, so to speak, for co-ordinating everything which is sensed externally” [Ak 2:403]; “things cannot appear to the senses under any aspect at all except by the mediation of the power of the mind which co-ordinates all sensations according to a law which is stable and which is inherent in the nature of the mind” [Ak 2:404]. Similarly, Kant writes that time is “the subjective condition which is necessary, in virtue of the nature of the human mind, for the co-ordinating of all sensible things in accordance with a fixed law...” [Ak 2:400]; and again, “the concept of time rests exclusively on an internal law of the mind, and is not some kind of innate intuition. Accordingly, the action of the mind in co-ordinating what it senses would not be elicited without the help of the senses” [Ak 2:401]. In Ak 2:398 Kant asserts that the only reason we can coordinate things in the sensible world with respect to simultaneity and succession is because of an innate and fixed law of the mind, and in Ak 2:392 he identifies this act of coordination with the concept of time.

accordance with permanent laws...For sensations, while exciting this *action* of the mind, do not enter into and become part of the intuition. Nor is there anything innate here except the law of the mind, according to which it joins together in a fixed manner the sense-impressions made by the presence of an object” [Ak 2:406; my emphasis]. Notice that Kant’s account of the different origins of the matter and form of sensory representation in this passage is identical to what we learned in §4, only now he explicitly identifies space and time as the form of the objects of sense which are generated through the mind’s acts of coordination. And, crucially, the “coordination” which is said to generate the representations of time and space when it “joins together” what is given by sense is twice explicitly described as a spontaneous “*action [actione]* of the mind” [my italics]. Putting all this together, what is evident from these passages is that for Kant the representations of time and space are not passively received through affection, but are instead *actively* generated by the mind itself when it coordinates the sensations given through affection; and, that the spatiotemporal features (or form) of the objects represented through the senses must be included among the various aspects of sensible things that only arise when the mind coordinates what is given through the senses.

This interpretation still leaves us with a number of unanswered questions. First, what is it, exactly, that is coordinated by this internal law of the mind? Is it the mind’s sensations? Or is it instead the objects represented through the senses? And in what way are either (or both) coordinated? The remarks in the passage cited above could go either way: the form of a sensible thing arises as “the various things which affect the senses are co-ordinated by a natural law of the mind” [Ak 2:392-393]; the form of intuition is that “by means of which [the mind] co-ordinates for itself that which is sensed from the presence of the object” [ibid]; and again, it is through this law that the “various factors in an object which affect the sense...coalesce into some representational whole” [ibid]. The things that are sensed from the presence of an object could either be the sensations that object produces or instead the sensible qualities of the objects represented through the senses. That the former option is indeed a possibility is evident from what Kant says at the start of §4, where he writes that what is given to the mind through affection by the presence of an object is a sensation: perhaps, then, what is sensed *from* the presence of an object is just the sensation that object produces, and if so, then sensations are what get coordinated by the mind. On the other hand, it could be that what is sensed from the presence of the object is just the object itself, or sensible appearances. This reading makes better sense of the claim that what is coordinated are the things or factors of an object which affect the senses, for presumably objects (whether sensible or not) are what affect the senses, not sensations.⁴⁷ Moreover, there are passages in ID where Kant explicitly states that the things which affect our senses are sensible objects, as in Ak 2:402 where he writes that “things which are in space affect the senses”; if, then, the mind coordinates “the various things which affect the senses”, and these things are sensible objects, then the mind coordinates the sensible objects perceived through the senses.

⁴⁷ If sensations are what get coordinated, then Kant isn't literally saying that sensations affect the senses, but that when the mind is affected it has sensations and these sensations are then coordinated by the mind.

The other textual evidence in ID is also far from clear, for there are passages which support each of these possibilities. The passages where Kant asserts that what gets coordinated by the mind are appearances, or, sensible objects, include §14.5, where we are told that time is the subjective condition

...which is necessary, in virtue of the nature of the human mind, for the co-ordinating of all *sensible things* in accordance with a fixed law...For it is only through the concept of time that *we co-ordinate both substances and accidents*, according to both simultaneity and succession. [Ak 2:400; my italics]

Again, Kant writes that “It is only under these conditions [i.e., that they appear in time and space] that *they* can be objects of the senses, *and can be co-ordinated with each other*” [Ak 2:402, my italics]. What Kant appears to be saying here is that it is only insofar as objects exist in space and time that they can *subsequently* be coordinated, or, that their spatiotemporal form can be determined through coordination.

But if the mind coordinates the sensible objects it perceives through the senses, then how is one to understand Kant’s claim that their spatiotemporal form is the *product* of this coordination? One possibility is that Kant is assuming, for some reason or other, that the objects perceived through the senses are somehow indeterminate with respect to their spatiotemporal determinations, and that it is only through coordination that they subsequently appear before the mind as determinate in these respects. Although Kant himself does not provide much to go on here, one could try to spell this out by interpreting his remarks along the lines later suggested by Gestalt psychologists. The idea that at least the spatial form of the objects we sense is not given through sensory stimulation alone, but is instead, at least in part, the product of the way the mind organizes, or in Kant’s words “coordinates”, those stimuli, might be supported by the kinds of examples commonly used by Gestaltists to establish the priority of form over matter in perceptual experience. For example, whether the mind perceives the lower-left or upper-right side of the Necker cube as its front side depends on how the mind interprets the stimuli given through the senses, for as the cube itself is indeterminate with respect to its spatial orientation, presumably one cannot explain why the mind perceives the cube in one way rather than another solely in terms of the sensory stimuli produced by that object when it affects the senses. Since these stimuli remain invariant from one time to the next, while the form or spatial orientation which the object is perceived having changes, it follows that the perceived orientation of the cube is not given by the senses but is instead an aspect which belongs to that object by virtue of the way those sensory stimuli are organized. In this example, the mind is responsible for organizing the content given by the senses when forming a representation of the spatial determinations of the object sensed. What is also suggested by this example is that the form of what is sensed is something that only arises by virtue of the way the mind coordinates the qualities given through sense alone, and is not something that belongs to those objects as they are in and of themselves, independently of the mind’s act of coordination: for surely neither the lower-left nor upper-right side of the cube is more accurately described as its front side, since neither of these orientations is intrinsic to the object sensed—the object is instead indeterminate in

this respect up and until it is represented by the mind according to one form or another. Perhaps, then, it is in this sense that the spatiotemporal form of the appearance is not an outline or schema of the object sensed, but instead an aspect that object comes to have by virtue of the way its sensory qualities are coordinated by the mind. And if these examples can be sufficiently generalized, they might support the claim that the spatiotemporal form of the objects we sense is a product of how the mind organizes, or coordinates, what is given by the senses, and that it is only by virtue of these acts of coordination that the objects sensed are perceived as having certain forms or aspects.

It is worth noting that if this interpretation is correct, then one might be tempted to deny that Kant holds the impositionist view which has been attributed to him. Indeed, if this interpretation is correct, Kant position may perhaps even be compatible with Falkenstein's view that the forms of intuition are orders of intuited matter. On Falkenstein's interpretation, the matter of an intuition is sensation, these sensations are given through affection with an inherent spatiotemporal ordering, and the forms of intuition are merely the spatiotemporal order in which these intuited matters are received. The mind represents a sensible object, in turn, when these intuitions are combined with concepts generated by the intellect: once intuitions have been processed by the intellect, sensations come to represent the sensible qualities (or matter) of an appearance, while the spatiotemporal disposition of those sensible qualities is determined both by the order in which the matter of intuition has been received, as well as by the manner in which the sensible qualities intended by those sensations are grouped together—more precisely, the way in which sensible qualities are grouped together depends on which concepts are used when representing the objects those qualities belong to. In that case, perhaps the cognitive activity which Kant attributes to innate laws in ID, is what he later described in the *Critique* as the figurative synthesis of the imagination.⁴⁸ On this reading, the mind does not generate and impose a spatiotemporal form on non-spatiotemporal sensations; rather, it merely determines the spatiotemporal disposition of the sensible qualities intended by those sensations by grouping them together in various ways. The only sense, then, in which coordination gives rise to an aspect which does not inhere in the objects we sense, is just that the particular way in which these sensible qualities are aggregated with one another is not intrinsic to them, but rather pertains to

⁴⁸ See Lorne Falkenstein, "Was Kant a Nativist?" *Journal of the History of Ideas* 51 (1990), p. 582, for his illustrations of the role figurative synthesis is supposed to play in cognition, though he denies that Kant held this view in ID. Other examples, such as those which illustrate figure-ground organization, can be used to illustrate the same point, although the different kinds of spatial relations that are perceived in these cases will also vary according to the different concepts that are employed when representing those objects. Likewise, in other examples conceptual content is always involved in the representation of spatial form, as in, for example, the duck-rabbit image, for whether we perceive the eyes facing left or right depends on whether we first perceive that image as a duck or a rabbit. In this case, the spatial relations of the parts depicted in that image change according to which concepts are being employed. That one and the same sensible appearance can be represented according to different empirical concepts, depending on how the matter of that appearance is organized by the intellect, is something that is often noted by Kant (recall the earlier example from *Jäsche Logic* V, Ak 9:33).

the manner in which the mind joins them together, as though the mind were a sort of cookie cutter carving out an undifferentiated mass of sensible qualities.

Nevertheless, even if the mind coordinates sensible qualities in something like the ways described above, this account does not exhaust the full range of things which Kant says about the coordinating activity of the mind, for there is a good deal of evidence from ID which shows that the mind also coordinates sensations, and not just the sensible qualities of the objects perceived through the senses.⁴⁹ Thus, in Ak 2:404 we are told that “things cannot appear to the senses under any aspect at all except by the mediation of the power of the mind which co-ordinates all sensations according to a law which is stable and which is inherent in the nature of the mind.” Later, in the context of an argument which is supposed to show that the concepts of time and space are acquired, rather than innate, Kant argues as follows:

For sensations [*sensationes*], while exciting this action of the mind, do not enter into and become part of the intuition. Nor is there anything innate here except the law of the mind, according to which it joins together in a fixed manner the sensations [*sensa*] made by the presence of the object.⁵⁰

In addition to this textual evidence, if sensations are the matter of intuition, then it also seems to follow that sensations are what get coordinated by the mind. After all, if coordination is the form of an intuition, but sensations are *not* coordinated, then what else could be the form of the intuitions which contain sensation? If the form of intuition only coordinates the matter of appearance, then the matter of intuition has no form—sensations would then be formless matter, which is absurd.

It seems, then, that in some passages, the mind coordinates sensations, while in others, what is coordinated are sensible objects and their qualities. Strictly speaking, what is being coordinated in each of these cases must be something different, for sensations are modes of a thinking substance, whereas sensible qualities are modes of material objects. Perhaps the best way to explain this is to allow that *both* sensations and appearances are coordinated, but that each of these coordinative acts are distinct from one another and occur at different stages of the cognitive process.⁵¹ This is in fact what is

⁴⁹ There are also a large number of passages from Kant’s Nachlass where it is clear that the mind coordinates *sensations*, not sensible qualities. These passages are cited and discussed below in §1.3.

⁵⁰ Ak 2:406. I have modified the translation of *sensa* by using ‘sensation’ rather than ‘sense-impression’, since the latter term might lead one to think that Kant is referring to the material impressions in the body which cause sensations. Although this is a possibility, I do not think it is very likely.

⁵¹ Alternatively, it is also possible that in those passages where Kant appears to assert that sensible objects are coordinated, he is using the term ‘form’ in the sense in which it was used in the opening sections of ID [Ak 2:390 & 392]. The distinction between matter and form is initially applied to the concept of a world: distinct substances constitute the matter of a world, while the form of a world refers to the coordination of those substances, or, to the set of relations that a collection of distinct substances must have to one another if they are to exist together as members of a common world—the form refers to their manner of connection. The matter and form of a world will differ according to whether that world is sensible or intelligible, and one of Kant’s main conclusions is that time and space are only forms of the sensible world. Perhaps, then, when Kant asserts that sensible substances must be coordinated in time and space (as in Ak 2:400 & 402), all he means is that those substances can only exist together as members of a common, sensible world if

suggested in Ak 2:404, where Kant asserts that the coordination of sensations is somehow *prior* to any other acts of coordination: “For things cannot appear to the senses *under any aspect at all* except by the mediation of the power of the mind which co-ordinates all sensations according to a law which is stable and which is inherent in the nature of the mind” (my emphasis). Here we are told that objects cannot appear to the senses *under any aspect at all* unless the mind has *first* coordinated its sensations; though sensible objects might be represented according to a variety of forms (all of which are, in this case, presumably conceptual), these forms are all subsequent to the initial act of coordination which is responsible for imposing form on the mind’s sensations. In that case, even if sensations and appearances are both coordinated, Kant seems to think that sensations are coordinated *before* appearances. The other thing worth noting here is that Kant also says that sensible objects could not appear before the mind *at all* unless the mind first coordinates its sensations. In order to understand what this means, the first thing to note is that the act of coordination referred to in this passage, as well as in others like it, is the very one responsible for generating the representations of time and space. Now, Kant repeatedly insists throughout ID that sensible objects cannot appear before the mind unless they are first represented in time and space. Putting these two claims together, if sensible objects can only appear before the mind when they appear in time and space, and the representations of time and space are generated when the mind coordinates its sensations, then it follows that sensible objects only appear before the mind in time and space after the mind has coordinated its sensations. This, of course, would certainly explain why the coordination of sensations is more basic than any other acts of coordination: if the coordination of sensations is the *conditio sine qua non* for the appearance of objects in time and space, then sensible objects cannot be represented under any other aspects before the mind coordinates its sensations, for it is only through the coordination of sensation that sensible objects can appear before the mind at all.

Returning now to the passage in §4, we noted above that when Kant says that the form of the object sensed is not an outline of the object, what he means is that the form of sensible objects only comes to appear after the mind has coordinated and “clothed” what it senses with these aspects, and the argument Kant gave in support of this claim is that objects do not strike the senses in virtue of their form. But if sensations are what get coordinated by the mind, then when Kant asserts that objects do not strike the sense by virtue of their form, what he means is that the spatiotemporal determinations of the objects sensed are not given by sensation; instead, the spatiotemporal form of these

they stand in spatiotemporal relations to one another. In that case, when Kant is discussing the coordination of sensible objects, the kind of coordination he has in mind is not the same as the kind of coordination involved in an *intuition*. And if that is correct, the passages cited above do not entail that it is sensible objects which are being coordinated by the forms of intuition. Although the distinction between matter and form is applied to both the concept of a world as well as to the mind’s representations, and coordination is identified as ‘form’ in both cases, the *kind* of coordination which constitutes the form of a world is quite different from the coordination involved in an intuition: in the first, coordination refers to the fact that sensible objects are all connected in time and space, while in the second it refers to that aspect of a sensory representation which is responsible for the appearance of objects in time and space. The first kind of coordination is metaphysical, whereas the second is cognitive.

objects only arises by virtue of the coordinating activity of the mind which “clothes” what is sensed (i.e., sensations) with this form. It is in that respect that the coordination of these sensations is what gives rise to the appearance of sensible objects in time and space. The spatiotemporal form of the objects sensed by the mind is not an outline of those objects, but instead a product of the coordinating activity of the mind which coordinates the sensations given through affection, and the product of this coordination is the appearance of sensible objects in time and space.

If this interpretation is correct, then it is impossible to reconcile Falkenstein’s interpretation of the Transcendental Aesthetic with Kant’s account of the forms of intuition in the *Inaugural Dissertation*.⁵² On Falkenstein’s reading, sensations are originally received in a spatiotemporal order: the spatiotemporal order of an intuition, though not *itself* a sensation, is nevertheless *given* in sensory experience, and the forms of intuition just are the orders in which these intuited matters are received. But in ID, sensations are not given in a spatiotemporal order, they are rather “clothed” with this aspect as a result of the mind’s coordinating activity. Kant is explicit that objects “do not strike the senses in virtue of their form”, which rules out the possibility that spatiotemporal form is a presentational order given in sensory experience: if the form of an intuition corresponds to the order in which our sensations appear, and that order is immediately given along with the sensations, then objects should “strike the senses in virtue of their form” [Ak 2:393], though Kant says they do not. Secondly, a closely related point is that, on Falkenstein’s interpretation, the mind is *passive* in the reception of spatiotemporal form. But in ID Kant repeatedly asserts that the form only arises through coordination, and he consistently describes coordination as an *activity*: the mind actively constructs the representations of time and space by coordinating sensations, it does not passively receive these representations from experience. If, as Falkenstein supposes, our sensations were originally received with an inherent spatiotemporal order, there would be no need for the mind to actively coordinate these sensations; but Kant repeatedly insists that spatiotemporal form can *only* arise through the activity of the subject. These remarks also count against the interpretation proposed above that Kant’s view may somehow be analogous to the Gestaltists. Putting aside the fact that it is doubtful whether Kant himself would have had the kinds examples in mind cited above, what those examples show, at best, is that some of the spatial features of the objects we sense are determined by the way the mind organizes them; but each of these examples presuppose that appearances are originally presented to the mind with *some* spatial features (such as extension, location, etc.), while others are left indeterminate (such as figure, orientation, etc.), and the only role left for the mind is to determinate those aspects of the appearance that are left undetermined by sensation. This interpretation thus assumes that sensible objects must first be presented in a spatial array before the mind can subsequently group sensible qualities together according to concepts, since the mind cannot determine the spatial disposition of those appearances unless they first appear before the mind in space. But Kant does not distinguish anywhere between those spatiotemporal features which are

⁵² As we have noted, however, Falkenstein himself is willing to concede this.

given and those which are produced through coordination, though he should have if this is what he had in mind. Rather, Kant simply attributes *all* of the formal (i.e., spatial) features to the mind's coordinating activity.

With these remarks in hand, the basic picture of sensory cognition which begins to emerge from this interpretation of §4 may now be summarized as follows. Sensory cognition begins when sensations are given to the mind through affection. These sensations are then coordinated through an innate law of the mind. As a result of this coordination, sensible objects appear before the mind with a certain form or aspect and these forms or aspects are the spatiotemporal determinations of the objects sensed. It is in this sense that the coordination of the sensations given through affection is what gives rise to the appearance of sensible objects in time and space: the spatiotemporal form of these objects is generated by the coordinating activity of the mind, while the matter of these appearances corresponds in some way to what is given by sensation.

Our account of Kant's theory of sensory cognition is still far from complete, for we have not yet explained just what these sensations are as well as how they are related to the sensible qualities which constitute the matter of appearance. To this point, we have only noted that sensations must be distinct from the sensible qualities that constitute appearances (since they are modes of thinking substances), that they are not identical to physical states of the body (since they are mental states), and that sensations are somehow or other related to the sensible qualities of appearances after they have been coordinated. But what exactly are these sensations and how exactly are they related to the matter of appearance? This will be the subject of the next section. But before we proceed to these matters, it will be useful to first discuss two additional issues that arise in connection with the forms of intuition. First, what does Kant mean by 'coordination'? Second, are the concepts of time and space innate? And if so, then in what sense?

In the *Dissertation*, Kant says remarkably little about the precise nature of these coordinating acts. The concept of coordination is initially introduced at the start of ID, along with the complementary notion of subordination, to distinguish the different ways that the parts of a world, its substances, may be related to one another. Substances are coordinated if they "are related to one another as complements to a whole", and this relationship is "reciprocal and *homonymous*, so that any correlate is related to the other as both determining it and being determined by it"; in contrast, subordinations "are related to one another as caused and cause, or, generally, as principle and that which is governed by principle" and this "relationship is *heteronymous*, for on the one side it is a relation of dependence only, and on the other it is a relation of causality" [Ak 2:390]. The distinction between coordination and subordination is supposed to mark a difference in the relations of dependence: substances are coordinated with one another if they are both parts of a single world and stand in mutual relations of dependence; in contrast, substances are subordinated to one another when they stand in a one-way relation of dependence. But although the notions of coordination and subordination are initially applied to the concept of substances in the world, they have a much wider application. Like the distinction between matter and form, the notions of coordination and subordination are

extremely general in nature; broadly speaking, they are used to denote a distinction between the different kinds of connection that a class of entities can have to one another, where these entities can include worlds, substances, causes, actions, forces, etc. Relations of coordination are described in terms of parts and wholes, while relations of subordination are characterized in terms of ground and consequent, or of condition to conditioned, or cause to effect. Moreover, like the distinction between matter and form, the distinction between coordination and subordination is also drawn at the level of cognition; and, as before, when applied to cognitions these concepts are employed to mark the different connections that the objects of cognition have to one another, where these “objects” include concepts, judgments, principles, etc.

All cognitions are either connected with one another through coordination or through subordination. Cognitions are coordinated, when they are with one another as parts to a common whole; now if many cognitions are joined together, then this is called extended cognition. The cognitions are subordinated, if they are with one another as grounds to consequents, if one is contained under the other...thus the first type of connection [*Verknüpfung*] of cognitions appear to be bound together at the same level. The other type of combination [*Verknüpfung*] (connection [*Verbindung*]) can be easily represented through a ladder.⁵³

A plurality of cognitions are coordinated when they are combined together as parts to form a whole; the relation of subordination, in contrast, has to do with the relations of dependence between the entities cognized. In Kant’s Lectures on Logic from the early-to-mid 1770s—i.e., those contemporaneous with ID—the distinction is usually applied to explain the different ways in which the marks of a concept are related to one another.

I want to make myself a clear concept of body; then I must coordinate many marks, until they together make the whole concept. I take the extension, the impenetrability...I further add the figure to it and then exhaust it. Here I have thus combined the marks, e.g., coordinated...But which will be the subordinate marks of a body? The mark of a body is, the composition, the mark of composition is divisibility, the mark of divisibility is contingency and the mark of contingency is: that it has an external cause. Here is a series of marks, where one is subordinated to the other or where one is the mark of another.⁵⁴

The different marks of a concept are connected to each other in one of two ways, either through coordination or subordination. The coordinated marks of a concept are connected with one another as parts to a whole, they consist of the various marks contained in a concept which collectively make up its content: the concepts of extension and impenetrability are contained in the concept of body as coordinated marks, they are the distinct marks which together make up that concept. In contrast, the subordinated

⁵³ *Metaphysik* L₁, K₁, H, Ak 28:171.

⁵⁴ *Bauch Logic*, pp. 119-120; Cf. *Logik Philippi* Ak 24:407 & 412-415, *Blomberg Logic* (Ak 24:9-301, early 1770s), *Bauch Logic* (Pinder, 3-267, early 1770s) *Logik Philippi* 3 (Ak 24:305-496, 1772) and *Hintz Logic* (Ak 24:943-4, 1775). The distinction tends to be employed in much the same way in Kant’s later lectures on *Logic* and *Metaphysics*.

marks of a concept are those that are derived from other marks. In order to understand what this means, the first thing to note is that the marks of a concept stand in various containment relations to other concepts: the concept of sentience, for example, is contained in the concept of animal, and the concept of animal is contained in the concept of man. These containment relations are what allow concepts to be ordered according to genus and species and, for Kant, they determine relations of subordination: if one concept is contained in another as a mark, or as a species to genus, then the concepts are connected in a relation of subordination. The reason the marks of a concept are subordinated to others is because the subordinate marks are determinations of other marks which are determinable: thus, the concept of man is subordinated to the concept of animal since man is a particular kind of animal—the marks contained in the former concept are determinations of the determinable marks contained in the latter. And, since the content of the subordinate marks contains the higher marks—or are determinations of other marks which are more determinable—the content of the one depends upon the content of the other. By reflecting on this example, one can easily explain why Kant characterizes the relation of subordination in terms of dependence, while coordination is a kind of reciprocal relation. The coordinated marks of a concept are distinct from one another; while each mark is contained in one and the same concept—or are connected with one another as parts which make up a single whole—they are not contained in one another: the concepts of extension and impenetrability are both contained in the concept of body, but the concept of extension is not contained in the concept of impenetrability, or vice versa. And, unlike the coordinate marks of a concept, which stand in reciprocal relations but are not contained in one another, the subordinate marks of a concept are connected to one another in one-way relations of dependence: the concept of animal is contained in the concept of man, though not vice versa, and this means that the latter concept is subordinate to the former. Thus, whereas coordinated cognitions complement each other, subordinated cognitions depend upon one another.

At bottom, then, coordination is a cognitive activity which consists in combining parts to form wholes, whereas subordination is responsible for determining the relations of dependence in the objects that are cognized. The mind forms a concept through coordination when different marks are combined with one another to form a single, unified whole—when distinct marks are connected with or placed alongside one another to form a more complex concept. The subordination of marks, on the other hand, involves arranging the marks of a concept according to their various containment relations so as to produce a hierarchical ordering of the marks contained in a given concept.⁵⁵ Now, as we have already noted, the relation of coordination is not only applied to the marks of concepts, for sensations are also coordinated by the mind. And if coordination, at the most general level, is a cognitive activity which connects parts to form a whole, then to say that the mind coordinates its sensations means that distinct sensations are connected to one another by the mind when forming the representation of some kind of whole. This is in

⁵⁵ Cf. Ak 2:393-394 of §5, for Kant's explanation of how the mind forms a general concept by subordinating the various marks of a concept.

fact precisely how Kant describes these coordinative acts: we are told that the mind must “join together” [Ak 2:406] the sensations given through affection, and that the “various factors in an object which affect the sense” can only “coalesce into some representational whole” through the coordinating activity of the mind [Ak 2:303].⁵⁶ The representations of time and space are formed when the mind coordinates sensations, and this coordinating activity is what results in the appearance of sensible objects in time and space; putting this together with his notion of coordination, Kant’s view must be that distinct sensations are combined through the forms of intuition when forming a representation of an appearance. This of course still leaves much unexplained, but it will have to suffice for now. We will not be in a position to further elaborate on Kant’s position until we first get clearer on just what he means by ‘sensation’, and how it is related to the sensible qualities of appearance. This will be the task of §1.3, and once this has been accomplished, we will then return to these matters and attempt to describe Kant’s position in further detail.

A final question worth briefly considering here is whether Kant’s theory is a form of nativism. Are the concepts of time and space innate? Though I will consider this issue in more detail after we have reconstructed the arguments Kant gives to show that the representations of time and space cannot be derived from abstraction by what is given through the senses, for now a few brief remarks are in order. Kant himself raises this question in the Corollary at the end of §15, where he dismisses any appeal to innate ideas as “a philosophy of the lazy...which, by appealing to a first cause, declares any further enquiry futile” [Ak 2:406]. In answer to the question of whether the representations of space and time are innate or acquired, Kant writes that “each of the concepts has, without any doubt, been acquired, not, indeed, by abstraction from the sensing of objects...but from the very action of the mind, which coordinates what is sensed by it” [Ibid]. In other words, the reason these concepts are not innate is because the mind only forms representations of time and space upon the occasion of experience when it first begins

⁵⁶ If coordination is a cognitive act which joins together, combines, connects (etc..) certain parts to form a whole, then one might naturally wonder whether coordination is connected to the concept of synthesis. And if so, how? That there is a connection between these two notions is indicated by the fact that in the opening remarks of ID, Kant explicitly connects the notions of coordination and subordination with different kinds of synthesis and analysis. The connection between the concepts of coordination and subordination, on the one hand, and analysis and synthesis on the other, also frequently appears in Kant’s lecture notes and *Reflexionen*. See Ak 24:291, Ak 16:788-789, Refl. 3342 (1764-1768?; 1769-1770?; 1773-1775??), Ak 17:341, Refl. 3913 (1769? 1768?), Ak 17:349, Refl. 3925 (1769? 1770-1775?), Refl. 2413, 2407. Coordination is also mentioned in the *Duisburg Nachlass*, where Kant appears to use it interchangeably with synthesis [Ak 17:662]. One especially interesting passage is Ak 17:354, Refl. 3935 (1769), where Kant connects coordination with synthesis and then distinguishes two different kinds of synthesis of coordination, the first of which is rational, while the second is empirical:

Die synthesis der Vernunft (g rational) oder der Erfahrung (g empirisch).

Die erste ist entweder der coordination: Ganze und Theile, Zahl und Einheit, oder der subordination: Grund und Folge.

[Empirisch] Die zweite der coordination nach raum und zeit.

An empirical synthesis is an act of coordination which combines parts to form wholes in accordance with the forms of time and space. Unfortunately, there is little else that Kant says which can shed light on how all of this is to be interpreted. But what is at least suggested is that if time and space are produced through the coordination of sensations, then what this means is that sensations must be combined in thought one after another in time and also placed next to and outside one another in space, through a synthesis.

having sensations. But all this means is that these representations are not *occurrently* innate, or that the mind does not possess fully formed representations of time and space before it begins having experiences. This does not mean that there may not be another sense in which the concepts of time and space are innate, for even if the mind does not possess *occurrently* innate representations of time and space before it begins having experiences, it does not follow that these concepts are not *dispositionally* innate. Though Kant himself doesn't clearly distinguish between these two senses of innateness, there is good reason to think that the concepts of time and space must be dispositionally innate. To begin, Kant frequently remarks that these representations are products of an innate "law of the mind, according to which it joins together in a fixed manner the sense-impressions made by the presence of the object" [Ak 2:406]; the pure forms of intuition are generated "from the very action of the mind, which coordinates what is sensed by it, doing so in accordance with permanent laws" [ibid, Cf. Ak 2:401-402]. The representations of time and space are products of an *innate faculty*, of innate laws that are present in the mind from birth as part of its innate constitution. But if the mind has an innate disposition to order sensations upon the occasion of experience, then although the representations which subsequently arise as a result of this coordinating activity do not exist in the mind as fully formed representations prior to experience, these representations are generated by the mind through an innate disposition which is present in the mind from birth. Insofar as these representations only arise by virtue of certain laws that are hard-wired into the mind as part of its innate endowment, the concepts of time and space do appear to be innate, albeit dispositionally rather than occurrently.

On my view, these innate dispositions are identical with the mind's *concepts* of time and space: the concepts of time and space just are innate dispositions present in the mind from birth to order sensations in a spatiotemporal array when affected by objects upon the occasion of experience. Here one might ask why the possession of these innate dispositions is tantamount to having the concepts of time and space. In my view, the answer to this question is given by turning to Leibniz's discussion of innate ideas in the *New Essays*. As many commentators have noted, Kant read the *New Essays* not long before composing his *Dissertation*, and there is a good deal of evidence which suggests that his own views on the question of innate ideas was inherited from Leibniz. Although we will discuss this connection in greater detail in Ch. 2, for now the following brief remarks are in order. Throughout the *New Essays*, Leibniz claims that there are certain ideas which must be innate to the mind since they could not have been acquired by abstraction from what is given through sensory experience. Leibniz maintains that these ideas exist in the mind prior to experience, but *only* in the sense that the mind has an innate disposition to form them upon the occasion of experience; these ideas are thus dispositionally, rather than occurrently, innate, and are only present in the mind from birth "as inclinations, dispositions, tendencies, or natural potentialities, and not as actualities."⁵⁷ This is not to say that the only sense in which these ideas are innate is just

⁵⁷ Leibniz, *New Essays on Human Understanding* (Cambridge: Cambridge University Press, 1981), p. 52. Cf. 106.

that the mind has a *capacity* to form them, for as Leibniz repeatedly stresses a faculty cannot exist in the mind which is devoid of all content, and so these dispositions cannot be mere capacities or pure potentialities. These dispositions are never bare, but always laden with content,⁵⁸ since they determine the kinds of ideas the mind will form when it begins to have experiences, in much the same way that the veins of a block of marble “outline a shape which is in the marble before they are uncovered by the sculptor.”⁵⁹ Like Kant, Leibniz also maintains that the mind only becomes consciously aware of these ideas upon the occasion of sensory experience, for unless the senses were first stimulated the mind could never come to (explicitly) form these ideas.⁶⁰ But although sensory experience may be a necessary condition for forming these ideas, in the sense that sensory stimulation is what first causes the mind to explicitly form them, it is not itself sufficient, since the content present in these ideas is not derived from anything given by the senses.

Innate ideas are thus identified as certain kinds of dispositions. And, as Leibniz stresses, there cannot exist *bare* dispositions, or, capacities the mind has which are empty of all content: every capacity the mind has must have some latent content, or be circumscribed in certain ways, for one never has a bare capacity to do something, but nothing in particular; one always has a capacity to do some *particular thing or other*. Now, as I will argue later, Kant inherited his own view on innate ideas from Leibniz; and, as we have already seen, for Kant the mind has an innate disposition to order sensations in a certain way, namely, by representing them outside itself in spatiotemporal locations. Putting these points together, the reason why these dispositions are concepts of time and space is because they are structured in certain ways: they are not bare dispositions, they are dispositions which enable the mind to order its sensations in a particular way, namely, by representing them in spatiotemporal locations, and the fact that these dispositions are structured in this way is what entails that the mind has an underlying grasp of the conceptual content involved in the concepts of time and space.⁶¹ On my view, the concepts of time and space just are innate dispositions present in the mind from birth to order sensations in a spatiotemporal array when affected by objects upon the occasion of experience. And if that is correct, Kant’s theory is indeed a form of nativism.

§1.3 Matter of Intuition & Appearance

Though Kant often obscures the difference between the form of intuition and the form of appearance, that distinction is at least present throughout the text. The same cannot be said for the distinction between the matter of intuition and appearance. It is

⁵⁸ Ibid p. 112, 140.

⁵⁹ Ibid p. 86; Cf. 52, 80, 87.

⁶⁰ Ibid p. 48, 77-78, 79-80, 81, 110

⁶¹ For Kant, part of what it means to possess a concept is just having certain abilities or dispositions. This is not meant to imply that the possession of a concept is to be analyzed behavioristically. There is more involved in having a concept than simply the ability to accomplish certain tasks, for the ability to accomplish these tasks is ultimately explained in terms of the underlying mental content which explains a given ability. In this case, the concepts of time and space are innate dispositions which are structured in certain ways, and the way these dispositions are structured entails that there is some underlying mental content present in the mind from birth, and this content is identical to the concepts of time and space.

clear that the matter of an intuition is sensation, but we have already seen a few reasons to doubt that sensations could be identical to the matter of appearance: sensations are modes of a thinking substance, but appearances are not mental states, they are the intentional objects of certain mental states; and, whereas appearances are spatial, the modes of thinking substances are not. But if the matter of appearance is not sensation, it is not clear what else it is supposed to be.⁶²

To begin to answer this question, it is first necessary to get clearer on just what sensations are. To this point, we have established three things about sensations: sensations are the matter of intuition, they are given to the mind through affection as the effects objects have on a subject, and they exist as states or modes of an immaterial substance. We have also established that sensations are coordinated by the mind and that the product of this coordination is the appearance of sensible objects existing outside us in spatiotemporal locations. But aside from this, there is little else that Kant says about sensations in ID. One of the few examples of sensation in any of the texts which are contemporaneous with ID is a passage from Kant's Nachlass, tentatively dated to 1769, where Kant writes that "Sensation represents individual objects insofar as they stimulate the senses, e.g., red, black, sweet, hard, warm, etc."⁶³ Here the examples given of sensations include sensible qualities like colors, tastes, warmth, etc. Similar examples are given in other texts. In the *Critique*, Kant mentions "sensations of colors, sounds, and warmth" as well as taste in A29/B44-45; in A175/B217 he cites color and taste as examples of why "The *quality* of sensation is always empirical and cannot be represented *a priori* at all"; and in the Isolation passage, Kant says that what "belongs to sensation" includes things "such as impenetrability, hardness, color, etc.," [A20-21/B35]. Likewise, in the *Prolegomena*, we are told that the "sensation of red is similar to the property of cinnabar that excites this sensation in me" [Ak 4:290]. While the proper sensibles are commonly cited as examples of sensation, other examples include inner feelings like pleasure and pain ("displeasure is not merely a lack, but a positive sensation" [Ak 2:181; Cf. Ak 2:325]), as well as emotions like feelings of anxiety or joy [Ak 2:325, 326*]. Kant also frequently identifies feelings of pleasure and pain as sensations throughout his *Reflexionen* and lecture notes on Anthropology. Other times it is unclear whether the example of a sensation is supposed to refer to a feeling or a sensible quality of some sort: for example,

⁶² Although Kant repeatedly suggests that the matter of an intuition is related to the matter of an appearance, the nature of the relation is never explained in any adequate detail. In the *Critique*, Kant explains the relation as follows:

I call that in the appearance which corresponds to sensation its **matter**, but that which allows the manifold of appearance to be intuited as ordered in certain relations I call the **form** of appearance. Since that within which the sensations can alone be ordered and placed in a certain form cannot itself be in turn sensation, the matter of all appearance is only given to us *a posteriori*, but its form must lie ready for it in the mind *a priori*, and can therefore be considered separately from all sensation. [A19-20/B33-34]

The matter of an appearance is presumably the sensible qualities of the objects we represent, and there is a correspondence between these qualities and sensation. But what does this "correspondence" amount to? Is it a relation of identity? Or does Kant mean by "correspondence" just that the matter of appearance is the intentional object of a sensation? Or is the correspondence relation something else?

⁶³ Ak 17:366, Refl. 3958 (1769; M XXXXVIII).

in Ak 2:181, we are told that the “sensation which wormwood produces is very positive”, but it is unclear whether the sensation referred to here is a certain quale (i.e., the taste of bitterness) or instead the positive feeling of pleasure associated with that taste, or both.

These passages raise as many questions as answers. The first problem is that the examples given of sensations are of quite heterogeneous kinds of entities: sensations are supposed to be feelings in the subject, like pleasure and pain, emotions such as anxiety and joy, but also, most frequently of all, sensible qualities like colors, smells and tastes. But only some of these examples may be plausibly construed as modes of a thinking substance. In particular, if some sensations are identical to sensible qualities, then it is difficult to see how these could exist as states or modes of a thinking substance. If these sensations are mental states, then when the mind has a sensation of color, smell, or taste, it literally becomes red, smelly, sweet, etc. Not only is this absurd on its face, it is also inconsistent with the idea that the mind is an immaterial substance, for at least some of these sensations appear to have spatial qualities: for example, sensations of color are generally extended, and also appear to be located in regions of space, and the same is often true of the tactile sensations of figure and shape. But if these sensations are modes of an immaterial substance, then the mind must also be extended, though this is ruled out by Kant’s insistence in ID that the mind is immaterial and exists outside of space.⁶⁴

This problem has led many commentators to distinguish between sensible qualities and sensations, and to argue that sensations are intentional representations of some sort. The texts cited above do allow for this interpretation, for many of the passages where Kant appears to assert that sensations are sensible qualities are actually ambiguous. For example, in the passage cited above from 1769, Kant asserts that sensation “represents individual objects insofar as they stimulate the senses” and he then lists sensible qualities as examples. But it is unclear whether sensible qualities like “red, black, sweet, hard, warm” are supposed to be examples of *sensations* or instead examples of what is *represented* by sensation; that is, it is ambiguous whether sensations are sensible qualities or instead certain representational states of the subject whose intentional content are these sensible qualities.⁶⁵ As Richard Aquila has noted, this ambiguity was pervasive in the early-modern period: one and the same term had a dual use, for sensations were regarded “by some philosophers at least, not only as the internal effects

⁶⁴ See Falkenstein, *Kant’s Intuitionism*, pp. 123-25, who claims that it is impossible for sensations to be both sensible qualities and effects on the subject, regardless as to whether these sensations are mental or physical effects. Falkenstein also denies that sensible qualities could be physical states of the body, since the proper sensibles are one and all secondary qualities and these cannot be real features of bodies.

⁶⁵ That sensations are representations of some sort, and not themselves sensible qualities, is also indicated by the following passage from *Metaphysik L₁* [Ak 28:230]:

Sensible cognition arises either entirely from the impression of the object, and then this sensible cognition is a representation of the senses themselves, or sensible cognition arises from the mind, but under the condition under which the mind is affected by objects, and then sensible cognition is an imitated representation of the senses. E.g., the representation of that which I see; further the representation of the sour, sweet, etc., are representations of the senses themselves.

Here, sensible qualities like ‘sour’ and ‘sweet’ are not themselves sensations, they are examples of what is *represented* by sensation.

whereby we become *aware* of objects of sensation, but also as themselves *among* the proper objects of sensation.”⁶⁶ Nevertheless, as Aquila also notes, although one and the same term is being used in each of these cases, it is a mistake to assume that ‘sensation’ can genuinely stand for one and the same thing for the same reason that it is a mistake to think that ‘representation’ can simultaneously denote both an act and an object.

Aquila argues that, strictly speaking, for Kant a sensation is a particular kind of representation with intentional content. One initial problem with this claim is that sensations cannot on their own be representations; the only representations that have intentional content are intuitions, but if sensations are more basic than intuitions, then it appears that a sensation cannot itself represent anything.⁶⁷ Nevertheless, as Aquila notes, although a sensation, considered merely as a state of the subject, does not represent anything, sensations do come to have intentionality when they are connected with the forms of intuition. For Aquila, the form of an intuition refers, very broadly, to that aspect of a representation which enables it to have intentional content, or, is responsible for the object-directedness of a representation.⁶⁸ Although a sensation, considered merely as a state of the subject, is not itself representational, the sensation does become representational when combined with an intuition. The sensation and this form are thus two distinct components of a representation that together constitute a single state with intentional content. And the sensation, in particular, is that element of the intuition which represents a sensible aspect of an appearance—these sensible aspects are the intentional content which are represented by sensations.⁶⁹

⁶⁶ Richard Aquila, “Is Sensation the Matter of Appearance?” (in Gram, ed., *Interpreting Kant*) p. 20.

⁶⁷ This is one consideration which led Rolf George, “Kant’s Sensationism”, *Synthese* 47 (1981), pp. 229-255 to his interpretation that for Kant sensations are non-intentional mental states. On his reading, although sensations are representations, they have no intentional content at all, they are just feelings in the subject. Although one virtue of this reading is that it provides a ready explanation as to why sensations are non-spatial (i.e., it makes no sense to ask about the dimensions of a pleasure or pain, for example), it does not adequately explain Kant’s other examples of sensation, such as color, smell, taste, etc. And even if it is true that feelings of pleasure and pain are non-intentional mental states, George’s reading conflicts with those passages where Kant does appear to assert that sensations are representational, which means that they must be *intentional* mental states and not *just* feelings of pleasure and pain (which do not represent anything outside of themselves).

⁶⁸ Richard Aquila, *Representational Mind*, pp. 33-48 & 62-69. For Aquila, the form of an intuition, like the sensation, is not anything spatial, it is merely what enables a sensation to represent some intentional content in space.

⁶⁹ *Ibid*, pp. 33-48 & Richard Aquila, “Is Sensation the Matter of Appearance?”, pp. 19-28. Aquila’s interpretation is closely linked to his general account of Kant’s transcendental idealism, which he interprets as a form of intentional object phenomenalism. On this reading, appearances only exist as intentional objects which “inexist” within the content of a representation. Much of this account is based on Aquila’s interpretation of Descartes’ distinction between the formal and objective reality of ideas, which Kant is supposed to have inherited and modified in various ways. The formal reality of an idea refers to an idea as it exists as a mode of a thinker; the objective reality of an idea denotes the content that idea refers to. Of particular importance is Aquila’s account of Descartes’ notion of objective reality. As Aquila notes, the objective reality of an idea can be understood in two different ways, depending on how one understands the nature of intentionality. Intentionality can be thought of as a kind of relational property: it is the relation that obtains between a representing subject and the object represented. Alternatively, intentionality can also be understood as a kind of feature of the representation itself: in particular, it is that feature of a representation which makes it a representation of some particular kind of thing. The main difference

As Aquila notes, on this reading there is a sense in which the objects represented through the senses are sensations that have been organized in a spatiotemporal form. The mind comes to represent an appearance in space when the form of intuition is added to a sensation. But this doesn't mean that sensations are being arranged in space, or, that when the mind has a sensation the form is added to it in the sense that the sensation *itself* is represented in space. Sensations are contained in intuitions, not appearances, and, as elements of an intuition, sensations *represent* a certain aspect of appearances. It is in that sense alone that the appearance of something in space is the result of sensations being organized according to certain forms. A sensation is a representation whose intentional content is a certain aspect of appearances, but the sensation is not itself the intentional object of that representation, for the objects referred to by those states are not identical with those states themselves: mental states are not the objects of intuition and appearances are not collections of mental states. The only sense, then, in which sensations are "contained" in appearances is just that they are an aspect of a sensory intuition which *designates* the matter of an appearance.⁷⁰

But even if sensations are representational states, it is not entirely clear just what sensations are supposed to represent. Aquila is somewhat ambiguous on this issue, since he occasionally suggests that sensations represent external objects in space, but elsewhere he claims that sensations only represent states of the subject's sense organs when modified by some object: sensations are internal states which direct the mind's attention to the state of its sense organs.⁷¹ Aquila supports this reading by citing those passages where Kant asserts that sensations are always *subjective* representations. Thus, in the Stufenleiter passage, sensation is defined as a "*perception* that relates solely to the subject, as the modification of its state" [A320/B376-7]; moreover, Kant contrasts these perceptions (or representations with consciousness) with those that are objective and relate the mind to some content outside the subject (i.e., intuitions and concepts) and this

between these two notions of intentionality has to do with whether or not the object of a representation exists: if intentionality is a kind of relation, then intentional representations presuppose the existence of the objects represented, for a relation cannot exist without the relata that stand in that relation; on the other hand, if intentionality is just a feature of the representation itself, then the intentional object of that representation need not exist, it merely 'inexists' as a part of the representation itself. This second account of intentionality is allegedly the very one involved in Descartes' notion of the objective reality of an idea. For Descartes, the objective reality of the idea of infinite perfection, for example, is the idea as it "exists in the understanding," and what this means is that the objective reality of an idea need not be identical to the object represented, but only to that idea *as* represented: in other words, the intentional content of that idea is not infinite perfection itself, but only infinite perfection as represented by that idea. The objective reality of an idea is thus a kind of intentional object and, as intentional objects, these ideas do not imply the existence of the objects they refer to; instead, the objective idea is something that does not exist outside of, or apart from, the idea intending it. And, crucially, the intentional object of that idea is not, qua intentional object, anything apart from the mind's awareness of it, it is, instead, merely an *aspect* of that awareness—namely, the aspect of that awareness which makes it an awareness of a certain sort of content. For a general overview of Aquila's interpretation of transcendental idealism, see Aquila, *Representational Mind*, pp. 83-118.

⁷⁰ Richard Aquila, "Is Sensation the Matter of Appearance?", pp. 25-26.

⁷¹ Richard Aquila, *Representational Mind* (Indiana University Press, 1982), pp. 59-60. In his earlier essay "Is Sensation the Matter of Appearance?" Aquila suggests that sensations represent the sensible qualities of external objects, but this is not the case in his later account in *Representational Mind*.

suggests that sensations do not represent external objects in space, but only, at most, states of the body's sense organs.⁷²

But there are two basic problems with Aquila's interpretation. First, there are a number of passages where Kant asserts that sensations represent aspects of sensible objects outside the body, not just the state of the subject's sensory apparatus: sensations appear to be representations that refer to external objects outside the subject, not just states of the subject's sense organs, and that means they must be, in some sense, *objective* representations, not just subjective representations.⁷³ Second, there are a number of passages where Kant also asserts that sensations *themselves* are in space, not just the objects (or aspects of objects) represented by sensation.⁷⁴ But if sensations are represented in space, then they cannot themselves just be representations with intentional content; rather, they appear to be themselves the intentional objects of certain mental states, or at least some aspect of those objects.

There are two ways of dealing with these problems which can be found in the literature. One solution is proposed by Falkenstein. Falkenstein, like Aquila, distinguishes between sensations and sensible qualities: sensations are modes of a perceiving subject

⁷² Timothy Jankowiak, "Sensations as Representations in Kant," *British Journal for the History of Philosophy* (2014), p. 497 notes that sensations are also described as subjective representations in A28/B44, B207, B208 and in Ak 28:547 and Ak 29:829. Cf. Ak 28:230 cited above.

⁷³ This is noted by Jankowiak, "Sensations as Representations in Kant," pp. 497-498, who cites A20/B34, B207-208, A374, Ak 4:481, Ak 5:189 and Ak 7:154 and Falkenstein, *Kant's Intuitionism*, pp. 113-117. As for those passages where Kant asserts that sensations are only subjective, Jankowiak notes that Kant applies 'subjective' and 'objective' to representations in two different ways. The first sense in which a representation is subjective is that the content of that representation depends, in part, upon the constitution of the subject; sensations are always subjective in this sense since the particular phenomenal qualities of a sensation are not properties of the objects we perceive, but are always partially dependent upon the state of our sense organs. The second sense in which a representation is either subjective or objective has to do with the intentional content of that representation: a representation is subjective when the intentional object of that representation is a state of the subject, it is objective when it represents something outside the subject. Given this distinction, Kant can consistently maintain that sensations are always subjective in the first sense—since the qualities exhibited in sensation are always partially dependent upon the state of our sense organs—but are only sometimes subjective in the second sense, for although some of our sensations represent the subject's own internal states, others represent qualities of objects outside the representing subject. See Jankowiak, "Sensations as Representations in Kant", pp. 498-505. Falkenstein, *Kant's Intuitionism*, pp. 113-114 makes a similar observation.

⁷⁴ This point is made by Falkenstein, *Kant's Intuitionism*, pp. 111-112. It is also noted in Jankowiak "Sensations as Representations in Kant", pp. 507-509 & Timothy Jankowiak, *Sensation and Intentionality in Kant's Theory of Empirical Cognition* (Unpublished Doctoral Dissertation, UC-San Diego, 2012), pp. 150-163. The key passages cited by both are A20/B34 & A23/B38, where Kant claims that sensations are represented "outside of and next to" one another and are "not merely different but in different places." The claim that sensations are spatial follows from other parts of Falkenstein's interpretation: recall that on his reading, space and time are the forms of intuition and sensation is the matter, but if sensations are the matter of intuition, and the form of intuition is the spatiotemporal order in which these sensations are arrayed, then sensations must be in space. This, along with certain passages from the *Anthropology* where Kant seems to claim that sensations are identical to material impressions in the body [Ak 7:153-157], is what leads Falkenstein to identify these sensations as physical states of the body. See Falkenstein, *Kant's Intuitionism*, pp. 119-127. Like Falkenstein, Jankowiak allows that sensations are located in space, but the sense in which they are located in space is quite different on his reading. Unlike Falkenstein, who maintains that sensations are literally located in space, Jankowiak argues that they are merely *represented* in space.

and they constitute the matter of intuition, while sensible qualities, on the other hand, are not states of the subject, but are instead the intentional objects of those states. On Falkenstein's reading, sensations exist in space since they are physical states of the body: they are the effects an object has when it affects the body's sense organs, and as physiological states of the nervous system, these sensations exist in the same place as those nerves. Like Aquila, Falkenstein also acknowledges that sensations are not themselves representational; but Falkenstein is even more stringent as to what is required for a representation to have intentional content, for even the addition of intuition is not yet sufficient for sensations to become representational. Intuitions without concepts are blind, and so sensations, considered as the matter of an intuition, are not representational; it is only after these intuited sensations have been processed by the intellect that they come to represent certain qualities in the objects perceived through the senses. On Falkenstein's reading, every sensation is "an intellectually processed version of what the sensation really is...a sensation is the way it *appears* to us through intellectual processing."⁷⁵ When affected by external objects, the subject is brought into a certain state, and these states come to have intentional content after they have been processed by the intellect; the intentional objects of these states are certain qualities of appearances, and which quality is represented depends, in turn, on how these sensations are conceptualized.

As we have already seen, while this interpretation may be true of the *Critique*, it does not seem that it can work for the *Dissertation*. The main problem, of course, is that on Falkenstein's reading the spatiotemporal order of sensations is given by experience, not by the mind's act of coordination, and that, again, is not consistent with what Kant says in ID. Certainly the mind is not responsible for producing the spatiotemporal order of the physical impressions on the nerves, for in that case the very thing which allegedly causes a sensation (i.e., a material impression) already has spatiotemporal form, though spatiotemporal form is supposed to arise only *after* the mind has first coordinated its sensations. Moreover, we have also seen that, in ID, sensations are *mental* states of a thinking substance, and what this implies is that they cannot be identical with any of the material impressions that occur in the body. In ID, and other contemporaneous texts,

⁷⁵ Falkenstein, *Kant's Intuitionism*, p. 129. As Falkenstein notes, the examples Kant gives of the kinds of qualities that sensations refer to are quite different from one another: sometimes they are properties of material objects (like 'gravity', 'impenetrability', 'weight' A169/B211), other times they are secondary qualities that appear in bodies, but do not actually belong to them, and still others qualify the mind as one of its states. The explanation for this is that sensations may be processed according to a variety of different kinds of concepts, and the exact quality of an appearance ultimately represented by a sensation depends upon how that sensation has been conceptualized. Thus, a sensible quality like weight can be thought of either "as a feeling of strain in the muscles, or pressure on the skin" or it can be thought of as something that designates a force that really exists in bodies (i.e., the moment of gravity); likewise, 'temperature' could either refer to "the phenomenal feeling of warmth" (a feeling in the mind), a "state in the affecting object that produces this feeling" (a state of an external object), or again as "the physical state induced in the affected sense organs as a result of being affected by the object" (ibid, p. 125). In each of these cases "One and the same intensive magnitude of sensation...is thought of or intended in one way in perception, in another way in objective experience, depending upon how it is conceptualized by the intellect" (ibid, p.130). See Falkenstein, *Kant's Intuitionism*, pp. 123-133.

Kant seems to distinguish between the causes of sensation (i.e., material impressions) from sensations themselves—the material impressions produced in the body are not identical with sensations, they are related as cause and effect.

Another approach has been proposed by Jankowiak.⁷⁶ On Jankowiak's reading, sensations are representational mental states whose intentional objects are the sensible qualities of appearances; but, crucially, for Jankowiak sensations are not numerically distinct from the intentional objects they represent. Unlike Aquila, who maintains that one and the same entity cannot function as both an act of representation as well as the content represented by that act, Jankowiak argues that one and the same sensation is *both* a representation with intentional content as well as the content represented by that representation—although, crucially, sensations are only able to function in this dual role at different stages of the cognitive process. According to Jankowiak, it is of the utmost importance to carefully distinguish the various ways in which sensations are described at each stage of cognition, for a good deal of the ambiguity and inconsistency in Kant's use of the term arises from the fact that the criteria he uses when describing sensations vary according to the role they play at each of these stages. When Kant asserts that sensations are modes of a subject, he is describing what *kinds* of things sensations are, or what they are like in themselves in abstraction of the role they play when representing an object. Considered in themselves sensations are non-representational mental states, they are the states the subject is in when it is affected by an object; these states have a certain sensory content, and they can be described according to the particular sensory qualities they display (i.e., a certain feeling of warmth, a particular color, tastes, etc.). But although sensations, considered in and of themselves, do not represent anything, sensations become representational at the next stage of cognition when they are combined with the forms of intuition. In those passages where Kant attributes intentionality to sensations, he is no longer describing them in their role as states of the subject, but is instead referring to them according to the role they play in representing an object as components of an intuition. And, on Jankowiak's reading, when combined with the forms of intuition, sensations are represented in time and space by being literally *projected* outside the subject. The forms of intuition are mental acts which are responsible for assigning sensations to locations in time and space, and when combined with the forms of intuition, sensations are thus transposed outside the subject and are then *represented* as the sensible qualities of appearances—the sensation which constitutes the matter of intuition then comes to represent a certain location in time and space which contains the qualities of that sensation. The phenomenal qualities of the sensations which constitute the matter of intuition are thus numerically identical to the sensible qualities which are represented in space through intuition, and what the intuition represents are the phenomenal qualities of the sensation in a certain region of space and time. Thus, when combined with the forms of intuition a collection of non-spatial, non-temporal sensations come to be represented as an organized collection of sensory qualities arrayed in space and time; one

⁷⁶ Jankowiak, "Sensations as Representations in Kant", pp. 492-513 & Jankowiak, *Sensation and Intentionality in Kant's Theory of Empirical Cognition*, pp. 49-175.

and the same sensation thus *exists* as a state of the representing subject, but is *represented* as a sensible quality of an appearance, and the intentional content of that representation is the sensation *itself* after it has been transposed outside the subject.⁷⁷

In many ways, Jankowiak's reading is similar to the kinds of interpretations one finds in earlier commentaries. Vaihinger, for example, appears to endorse a similar reading:

Also Thatsache ist, dass wir, indem wir die Empfindungen auf "Etwas" ausser uns beziehen, das Ausser- und Nebeneinander der Empfindungen zu Stande bringen. Nennt man das Erstere die Projection der Empfindungen, so könnte man das Zweite in der Kürze als Disjection (oder auch Dislocation) derselben bezeichnen. Diese räumliche Projection und locale Disjection (Juxtaposition) der Empfindungen ist nun—nach Kants Argumentation—nur möglich, wenn "die Vorstellung des Raumes schon zum Grunde liegt"; das heisst doch wohl: ich könnte die Empfindungen nicht in den Raum hinausversetzen und nicht in demselben vertheilen, wenn ich nicht dazu die Raumvorstellung schon gleichsam parat hätte, wenn ich sie nicht schon zur Verfügung hätte. Nur unter dieser Vorassetzung ist jene Thatsache erklärbar. Für jene Thatsache muss dies als Ursache angesetzt werden. Hiebei ist nun aber stillschweigende Vorassetzung, dass eben die Empfindungen selbst als solche raumlos, ortlos sind, dass sie erst durch die Raumvorstellung in räumliche verwandelt, transformirt werden müssen.⁷⁸

⁷⁷ As to whether sensations are objective or subjective representations, Jankowiak argues that sensations are represented differently according to what *kind* of sensation they are. When sensations are combined with the forms of intuition, they either come to represent a state of the subject (inner intuitions) and are thus subjective representations, or they come to represent something in external objects (outer intuitions) and are thus objective representations: some sensations are represented as states of the body (e.g., a pain in the toe), others are represented as states of the mind (e.g., emotions like anger or sadness), while others are represented as the qualities of an object in space (e.g., color, smell, etc.).

⁷⁸ Hans Vaihinger, *Commentar zur Kants Kritik der reinen Vernunft*, Vol. 2 (Stuttgart: Union Deutsche Verlagsgesellschaft, 1892), p. 165. Cf. pp. 160-167. Cf. Kuno Fischer, *Geschichte der neuern Philosophie*, Vol. 3: *Kant's Vernunftkritik und deren Entstehung* (Heidelberg: Verlagsbuchhandlung von Friedrich Bassermann, 1869; zweite rev. Auflage), pp. 342-346. This distinction between sensations before and after coordination is also highlighted in John Watson, *The Philosophy of Kant Explained* (Glasgow: James Maclehose, 1980), pp. 76-77 (I am indebted to Aquila, "Are Sensations the Matter of Intuition?", p. 17 for bringing this reference to my attention):

The phenomenon...involves two distinguishable elements, which he terms the *matter* and the *form*. There is a certain difficulty in understanding what is meant when it is said that the *matter* "corresponds" to sensation. The most reasonable view seems to be this...sensations, which in themselves are merely affections of the knowing subject, have been ordered or arranged in a certain way; in other words, we find that the object as perceived is a complex of two elements. When we analyse this complex, we see that the sensations, apart from the manner in which they are ordered, are simply affections of the subject, while in the "object" they are presented as ordered, and, in fact, only as so presented can they be called an "object." Thus a change has been effected in the sensations, from the fact that they have been reduced to order. The sensations are in *content* the same as before, but this content is now *formed*. Now, as "matter" and "form" are correlative, we cannot call the sensations *before* they are ordered the "matter" of the object; what we must say is, that in the object they *become* "matter." Hence, in the perceived object the "matter" *corresponds* to what is prior to this object was pure sensation. Kant's point is, then, that sensation becomes an

On Vaihinger's interpretation, 'sensation' does in fact have a kind of dual use similar to the one identified by Aquila, but it isn't that one and the same term denotes two distinct entities, an act of representation and an object that is represented; rather, 'sensation' has a dual sense because one and the same thing is referred to at different stages of the cognitive process. At bottom, 'sensation' always denotes a certain kind of phenomenal content, but this content can be considered either with respect to its existence as a state of the subject having that sensation, or with respect to the way this content is represented after it has been coordinated. What is originally given through affection is a certain sensory content, and this content, considered in abstraction of any relation to the forms of intuition, is something non-spatial and non-temporal. But when these sensations are combined with the forms of intuition, this sensory content is then projected (*projeciert*) outside the subject, and different sensations are arranged and juxtaposed (*disjeciert*) alongside one another. It is in this way that these sensations come to be represented in spatiotemporal locations as the various sensible qualities of outer appearances. Thus, what is initially given is a sensory content which is non-spatial and non-temporal, but this content is then transformed through coordination in such a way that it comes to be represented as a sensible quality of an object outside the subject in time and space: one and the same sensory content which *exists* as a state of the subject comes to be *represented* as a property of an object outside the mind.

Before we proceed any further, there are two aspects of this interpretation that need to be clarified. First, the distinction between a sensation as it exists in itself, prior to being coordinated—where this sensation is a kind of non-spatial, non-temporal, sensory content which exists as a state of the subject—and the same sensation, or sensory content, as it appears once it has been coordinated by the mind and projected outside the subject, does not require that the mind have the power to *intuit* these non-spatial, non-temporal sensory contents independently of the forms of intuition. For Kant, this would be impossible: sensations cannot be represented independently of intuition, since intuitions are the most basic kinds of representational mental states. It is not possible for the mind to intuit these non-spatial, non-temporal sensory contents, for as soon as the mind is affected, it is innately disposed to immediately impose spatiotemporal form on the them. But while it is not possible to intuit sensations as they are in themselves, prior to coordination, it does not follow that Kant is not entitled to the claim that the sensations originally given through affection are non-spatial and non-temporal; all that is required for maintaining this distinction is that the mind have the ability to abstract, in thought, the sensory content that is proper to sensation, and to be able to consider these contents on their own, independently of the way they appear in intuition; and if, in turn, reflection on these sensory contents should reveal that they must be, prior to coordination, both non-spatial and non-temporal, then Kant would be entitled to infer that sensations only come to appear in time and space after the mind has coordinated them, even if the mind is unable to directly intuit these contents as they exist before they are coordinated.

element in the perceived object *when* it receives "form," and that in this new relation it is no longer mere sensation, or the "matter" of the phenomenon.

Whether or not the arguments which Kant gives to establish that sensations only come to be represented in time and space through coordination are adequate will be the subject of the fourth chapter; for now, it is only important to recognize that the mind's inability to directly intuit sensations prior to coordination does not necessarily pose an insurmountable obstacle which would prevent Kant from distinguishing between sensations as they appear before and after coordination, and from characterizing sensations prior to coordination as non-spatial and non-temporal.

The second important aspect of this interpretation which requires discussion is that, if it is correct, then there is a sense in which sensations do, after all, constitute the matter of appearance, for on this reading the intentional content of an intuition, the appearance, just is, in some sense, a collection of sensations arrayed in time and space. But as we have already seen, if sensations are in space, and constitute the matter of appearance, then Kant appears to be guilty of reducing appearances to mental states and of spatializing the mind's sensations: if sensations exist in space, then so too does the mind, for every sensation is a mode of the mind; likewise, if sensations constitute the matter of appearance, then appearances must also be mental states. And yet both of these claims are absurd, for the mind is an un-extended thinking thing which does not occupy a space, and appearances are not the mental states of a thinking substance but are instead the intentional objects of those states. This implication is recognized by Jankowiak, but he stresses that this interpretation does not entail that appearances are literally constituted out of sensory states. Jankowiak responds to this objection by adopting Aquila's account of the intentionality of intuition. For Jankowiak, as for Aquila, the intentionality of intuition is not a relational property between a representation and what is represented: an intuition is a mental act with intentional content, but the intentional content of that act isn't itself some object which is related to that representation; the intentional content of a representation is instead an intrinsic feature of the representation itself. Intuitions and appearances are not two distinct items which stand in a relation to one another, for the intentional content of the intuition, the appearance, just is an aspect of the intuition itself: the intuition is an intentionally directed act of awareness, the intentional content of that act is just an aspect or mode of that act of awareness, and appearances, in turn, are the contents which only "inexist" as aspects of those intuitions.⁷⁹ Consequently, when the mind represents an appearance by assigning sensations to locations in time and space, the intentionality of the intuition just is the way in which the mind is aware of its sensory states, or, the manner in which those sensations are represented. But in that case, although sensations are represented *as* spatial, it does not follow that they *are* spatial, for as intentional contents of the intuition, these sensory contents only "inexist" in appearances as aspects of that intuition. Although sensations are represented *as* spatial, as modes of a thinking substance they are not genuinely

⁷⁹ See pp. 42n59 above. Jankowiak also follows Aquila in interpreting Kant's transcendental idealism as a form of intentional object phenomenalism. See Timothy Jankowiak, "Kantian Phenomenalism Without Berkeleyan Idealism," *Kantian Review* (Vol. 22, Issue 2, 2017), pp. 205-23 & Jankowiak, *Sensation and Intentionality in Kant's Theory of Empirical Cognition*, pp. 98-125 & pp. 163-175.

spatial; and while sensations are represented in space, they are not represented as sensations (or as states of the subject), but instead as sensible qualities of appearances.⁸⁰

With this in mind, one can respond to the objection that Kant is guilty of spatializing sensations, or of reducing appearances to mental states of a perceiving subject, by noting the different representational relations that sensation plays in cognition. While every sensation *exists* as a mental state, they are not *represented* as mental states, they are represented as sensible qualities of bodies; and since a sensation, after it is coordinated, is not represented as a mental state, the appearance, of which it forms a part, is also not represented as a mental state of the representing subject. Conversely, though sensations constitute the matter of an appearance when they are represented as sensible qualities, since that appearance is also represented in a spatial location outside the representing subject, it is also not represented as a state of that subject. The matter of appearance is thus constituted by sensation, but only under a certain form; the sensation exists as a mode of the subject, but this state is represented as a sensible quality of an appearance when these states are coordinated.⁸¹

⁸⁰ Recall, once again, that every sensation has a dual aspect, since it can either be considered with respect to its existence as a mental state or with respect to the role it plays in a representation. In the same way that, for Descartes, every idea can be considered either with respect to its formal reality, as a state or mode of a thinker, or from the perspective of how that idea represents whatever it is an idea of, its objective reality, likewise, every sensation *exists* as a state of the subject, but the objective reality of a sensation is a sensible quality of the object represented.

⁸¹ Jankowiak, "Sensations as Representations in Kant", pp. 509-513 & Jankowiak, *Sensation and Intentionality in Kant's Theory of Empirical Cognition*, pp. 160-163. As intentional objects, appearances are dependent upon the representational states of the mind, but this does not mean that appearances should be identified with the *acts* of representation which intend those contents; they are the objects intended by those states, not themselves the states which represent those objects, and so, even if it is true that appearances, as intentional objects, do not exist apart from these representations, it does not follow that they are identical with those *acts* of representation themselves. As Jankowiak puts it, "appearances are representations in that they are represented, but not in that they are that which does the representing." Jankowiak illustrates this with the following helpful analogy:

Consider an otherwise blank canvas with a single, tiny dot of red paint in the center. Surely the red dot would not be said to represent anything...But if we consider that exact same red dot in a painting of, say, a still life with an apple, now we'd say that the red dot functions to represent a part of the skin of the apple. The red dot comes to acquire this function in the context of the rest of the daubs of paint arranged and organized in a coherent way. There's nothing contradictory in saying that the red dot on its own and independent of its combination with other colored shapes does not represent, yet that it does represent once it is in that context. Furthermore, when we say that the red paint represents part of the apple, we obviously do not mean that the paint itself possesses any kind of intentionality...But just as the red can nevertheless represent the apple *for the viewer*, sensations represent features of the intuited object *for the sensing subject*. It is this latter sense of 'represents' that Kant must have in mind when he describes *Empfindungen* as *Vorstellungen*. Sensations represent objects in the sense that they are the medium out of which our sensory representations of objects are constituted. (ibid, p. 508)

And again,

It is true that sensations are projected in space and thereby constitute the appearances about which we make judgements in cognition. But just because the undetermined *appearance* is constructed out of sensory contents, this does not require that the judgements I make about the *object* (when I determine the appearance with concepts) assert that the object is made up of sensory states. When the object is judged in cognition, the sensory states constituting the intuited appearance are not conceptualized as sensory states...if I use red paint to depict an apple on a canvas, I do not thereby

Now, among the various interpretations we have just discussed, the one proposed by Jankowiak seems to be the one that is most compatible with Kant's theory of empirical cognition in the *Dissertation*. As we noted above, there is very little that Kant says about sensation in ID, and so the textual evidence from that work alone will not enable us to establish this. But the theory of empirical cognition sketched in the *Dissertation* is also outlined in a number of *Reflexionen* that were likely written around the same period. In each of these passages, sensation is the matter of intuition (or empirical cognition), while coordination is the form; likewise, the spatiotemporal form of appearance is not given by sensation, but is rather produced by the mind when it coordinates sensations. Given the similarity between these passages and the theory of empirical cognition defended in ID, the other claims Kant makes in these passages—specifically those concerning sensations and the relation they have to the matter of appearance—can surely provide us with at least *some* evidence for interpreting the *Dissertation*. Indeed, given the paucity of direct textual evidence available in ID itself, these passages are perhaps the best supporting evidence that any interpretation can hope for. What I would like to do now is to go through these passages and show that they do indeed support the interpretation that we are proposing. Since each of these passages go over much the same ground, I will discuss them together to avoid needless repetition; moreover, each passage is best read alongside the others, for what is left vague in one is often clarified in another, and the most plausible interpretation of any individual passage will be the one that is maximally consistent with the others, together with the direct textual evidence from the *Dissertation* itself.

All cognitions are either empirical, insofar as they presuppose sensations, or pure cognitions, insofar as they have no sensation as their ground. The latter, namely the pure cognitions, are either [crossed out: individual] *conceptus singulares* and are called *intuitus puri* or general [crossed out: concepts] and are pure rational concepts. The empirical cognitions are sensation, appearance, and the empirical concept; from the first the matter of all cognition is derived; the second adds the form of intuition; the third brings both under a general concept.⁸²

...in all empirical cognition we can look first merely to the matter, and this consists of sensation; second, to the form of intuition; third, to the form of reason in concept. The form of appearance rests solely on space and time, and these concepts do not arise through the senses or sensation, but rather rest on the nature of the mind, in accordance with which the various sensations can be represented under such relations.⁸³

commit myself to the apple being made out of red paint. I take the depicted apple to be made out of *fruit*. Similarly, if sensations are the medium out of which I construct appearances in intuition, I do not thereby commit myself to judging these objects to be made out of sensations. I judge that the object I intuit is made out of physical, mind-independent stuff (the stuff described by physics). For again, the medium is not the message. (ibid, p. 513)

⁸² Ak 17:364, Refl. 3955 (1769; M XXXXVII).

⁸³ Ak 17:365-366, Refl. 3957 (1769; M XXXXVII-XXXVIII). In both of these passages Kant once again distinguishes between the matter and form of cognition, but he also seems to use 'cognition' and 'intuition' interchangeably, since he begins by talking about empirical cognition, whose matter is identical with

All cognitions from experience are called empirical and are either sensations or appearances or concepts. In the first, everything is given by means of sense and is merely the matter for cognition; the second contains the sensations in accordance with the form of space and time; the third contains the sensations or appearances made general through reason. If one leaves aside both of the latter actions, sensation remains. If one leaves this aside, then there remain pure concepts 1. of the understanding: of coordination, 2. of reason: of subordination.⁸⁴

All cognitions from experience (empirical) belong either to sensation and contain the matter of empirical cognition, or to appearance and contain at the same time the form, or to the concept and contain what is general in different sensations or appearances. Sensation represents individual objects insofar as they stimulate the senses, e.g., red, black, sweet, hard, warm, etc., consequently only the matter of empirical cognition. The form of objects is thought in accordance with space and time. The form of empirical cognition is that of coordination; the form of rational cognition is that of subordination. If one removes all matter of cognition, consequently everything that stimulates the senses, then the empirical form of the appearances still remains; if one also removes this, then the rational form remains; and cognitions of the first kind are pure concepts of intuitions, cognitions of the second kind are pure concepts of reason.⁸⁵

In each of these passages, Kant begins by listing the various kinds of empirical cognition alongside the sources from which they originate. Everything belonging to empirical cognition is either a sensation, an appearance, or an empirical concept; sensations are given through affection, appearances arise when sensations are combined with the forms of intuition (which rest on coordination), and empirical concepts are formed through reason (which rests on subordination) by abstracting whatever it is that different sensations or appearances share in common with one another.⁸⁶ Throughout, sensation is identified as the most basic component of empirical cognition: sensation is the starting point for all empirical cognition since it provides the basic contents from which all other

sensation, while in the second part we are told that empirical cognition also contains a certain form, which is the form of the intuition. Moreover, in each of these passages Kant claims that the form of appearance is not given by sensation, but instead through coordination. In the first passage, Kant contrasts pure and empirical cognitions: pure cognitions are those that are not given by sensation (or “have no sensation as their ground”), and these include singular concepts, i.e., the concepts of time and space. In the second half of the passage Kant lists the different kinds of empirical cognition as well as the source from which each cognition is derived: while the matter of cognition is derived from sensation, the appearance is given when the form of intuition is added to the sensation. This suggests, once again, that the spatiotemporal form of appearance is not given by sensation, as in ID. In the second passage we are told that the form of an appearance, its spatiotemporal determinations, rest on time and space, and these concepts are not given by sensation but are instead given through the nature of the mind; though not explicitly stated here, the sense in which these concepts are given by the nature of the mind is that there is an internal law present in the mind which coordinates sensations.

⁸⁴ Ak 17:367, Refl. 3961 (1769; M II).

⁸⁵ Ak 17:366-367, Refl. 3958 (1769; M XXXXVIII).

⁸⁶ In Ak 17:371, Refl. 3974 (1769; M LIII), Kant notes that all sensible concepts are either of sensations or appearances. Cf. Ak 17:365-366, Refl. 3957 (1769; M XXXXVII-XXXVIII).

empirical cognitions are subsequently derived. What is clear from each of these passages is that empirical cognitions are ordered hierarchically, beginning with sensation, which is the lowest form of empirical cognition, and then ascending to appearances and empirical concepts, which are higher forms of empirical cognition. Empirical cognitions appear to be ordered according to the amount of mental processing involved in their formation: after sensation, each subsequent cognition is given after the content provided at one stage has been processed by the mind through some kind of cognitive act, either coordination or subordination, and each of these cognitive acts are added in stages, so that what is given as an input at any one stage becomes an output for the next after that initial input has been processed.⁸⁷ Thus, in the same way that the form of intuition is added to the sensation to produce an appearance, a concept is added to the appearance or sensation when the mind makes that content general by representing it through a concept. Although Kant says that the matter of empirical cognition is given by sensation,⁸⁸ the distinction between the matter and form of a cognition is implicitly drawn at every level of empirical cognition, so that what constitutes the matter or form of any given cognition is always relative to the stage of cognition under consideration: the matter of an intuition is sensation, while form is the act of coordination, but the matter of an empirical concept are the individual appearances (or sensations) that fall under that concept, while the form is the act of representing those individuals according to what they share in common with one another. In the most general sense, the matter at any given stage of cognition is the content, while the form is the cognitive act according to which that content is organized and represented.⁸⁹ This distinction between matter and form is especially evident in the last two passages, where Kant suggests that the components of empirical cognition are related to one another as parts to a whole, or, that their relations are mereological in nature: thus, sensations are contained in appearances as one of its components or parts, but only *after* those sensations have been coordinated; likewise, empirical concepts contain sensations or appearances, but again, only after those cognitions are made general through abstraction. These part-whole relationships underlie the various remarks Kant makes about how the form or matter of a given cognition can be discovered by isolating the elements of that cognition through a kind of subtraction. In the same way that higher-order cognitions are given when the content provided in a previous stage is modified through some cognitive act, one can also go in the opposite direction and subtract the form given by that cognitive act so that only the matter remains: thus, an appearance contains the sensation in accordance with the forms of time and space, but if

⁸⁷ While the mind is passive in sensation, it is partially active in forming the representation of an appearance or (empirical) concept. In the former, the mind adds the form of time and space to the sensation through coordination, whereas the latter makes the sensation, or the appearance, general through an act of subordination. Both coordination and subordination are characterized as mental acts: the mind is active when forming representations of appearances or concepts, in contrast to the way in which it is passive in sensation. See Ak 17:365-366, Refl. 3957 (1769; M XXXXVII-XXXXVIII).

⁸⁸ Although Kant says that the matter is derived from sensation in the first passage, what he means is that sensation gives the matter because the matter *is* or *consists* of sensation, as in the second and third passages.

⁸⁹ Recall that at the level of cognition, the matter of a cognition is defined as the object represented, while the form is the manner or way in which that object is represented. See *Jäsche Logic* V, Ak 9:33.

one leaves aside the act of coordination which modifies the sensation, the sensation is what remains; likewise, a concept contains the sensations and appearances according to a certain form, but if one leaves aside the act of subordination which makes a sensation or appearance general through a concept, what is left behind is the original sensation or appearance. The form of a cognition is discovered in much the same way, namely, one isolates the form by removing the elements that constitute its matter so that only the manner in which those elements are represented is left behind: so, the form of an appearance is given when sensation is removed, while the form of a concept remains after sensation and appearances have been removed.⁹⁰ The reason one can isolate the various elements or components of cognition by subtraction, and consider them in abstraction of the others, is because they are, *in some sense*, contained in one another. What is given at any stage as the matter is also present at the later stages as well, though that matter may have been modified in different ways at each stage; what changes, however, is not the qualitative content given by the matter, but only the way that matter comes to be *represented* after it has been processed by the mind.

With these general remarks in mind, we can now focus on what Kant has to say in these passages about sensation in particular. Sensation seems to be involved in appearance by being contained in it. Admittedly this is not explicitly stated in the first passage, but it is at least implied when we are told that the matter of cognition is derived from sensation while the appearance is given by *adding* the forms of intuition (“the second *adds* the form of intuition”, my italics): presumably what the forms of intuition are added to are the sensations, and although this alone does not imply that sensations are also the matter of appearance, it is implied by his further claim that an appearance is given through the forms of intuition. The sense in which an appearance is given after the mind has coordinated its sensations is explained in the second and third passages. In the former we are told that in empirical cognition, there is both matter, which consists of sensation, as well as form, or the mind’s act of coordinating its sensations. The objects of empirical cognition, in turn, are appearances: the spatiotemporal determinations of an appearance constitute its form, and this form is given through the internal law of the mind which coordinates sensations. We are then told that it is by means of this internal law that “various sensations *can be represented under such relations*” (my italics). In other words, the form of appearance is given when the mind coordinates sensations by *representing* them in spatiotemporal relations. Note that *sensations* are represented in those relations, not the things which are represented *by* sensations (as one would expect on the readings defended by Aquila and Falkenstein). Likewise, in the third passage Kant explicitly states that an appearance “*contains* the sensations in accordance with the form of space and time” (my italics), while in the fourth, Kant says that all empirical cognition is either sensation, and contains the matter of empirical cognition, or, belongs to appearance, and then “*contain[s] at the same time* the form” (my italics)—that is, the appearance contains the sensation and at the same time a certain (spatiotemporal) form. The sense, then, in which the form of intuition is added to the sensation is that, through coordination, the

⁹⁰ Cf. Isolation Passage at A20-21/B34-35 & B5-6.

mind represents sensations in space and time: while the spatiotemporal determinations are the form of an appearance, sensations are the matter of an appearance when they are *represented* in spatiotemporal locations *as* the sensible qualities of an appearance.⁹¹

That sensations are not only contained in intuitions, but also in the appearances that are subsequently formed after these sensations have been coordinated, is also implied by the remarks Kant makes in the final two passages, when he attempts to discover the matter and form of a given cognition through the method of isolation. Thus,

⁹¹ There are other passages from this period where Kant asserts that an appearance is given when a sensation is represented in spatiotemporal relations:

Since space and time are the universal *conditiones* of the possibility of objects in accordance with rules of sensibility, the concordance of appearance or sensation in the relations of space and time together with the universal law of the subject for producing such a representation of form belong to that which necessarily corresponds to every sensibility, thus to taste.

Here, the disjunction after ‘appearance’ seems to be a parse on that term, viz., an appearance is ‘sensation in relations of space and time.’ Ak 15:311, Refl. 702, 1771? 1769-70? 1773-1775? (M178). Also, in Ak 15:323, Refl. 733 (1771? 1769-70? 1773-75?; M248), we find the following:

The objects of sight are alone capable of beauty because they come closest to pure intuition, in that they represent the object through an appearance which contains the least sensation. Hence even colors, as prominent sensations, belong more to charm than to beauty.

In this passage, color is identified as sensation and that sensation is said to be contained in appearance (the objects of sight are those which *contain* the least sensation). As Jankowiak, “Sensations as Representations in Kant”, pp. 500-503 notes, similar remarks appear later in the *Critique of Judgment*. In another passage from the same time period, Kant again explicitly attributes spatiotemporal locations to sensations:

In order for our sensations to acquire a determinate position* in space and time they need a function among appearances; however, position in space and time is determined by proximity to other sensations in space and time; e.g., from the condition of my sensations that has something in common with the preceding ones another one follows; the sensation of a resistance is at the same time combined with weight in the same space. Through the determination of the logical position the representation acquires a function among the concepts, e.g., *antecedens*, *consequens*. Yet the sensitive function is the ground of the intellectual one. *(a determinate position is different from an arbitrary one.)

Ak 17:614, Refl. 4629 (1772-73; M XX). Though it is not clear what Kant is up to here, what he appears to be proposing is that when a sensation comes to be represented in time and space *as* a sensible quality, it may come to be associated with others by observing their proximity to one another in time and space, and that when this occurs these sensations are represented as distinct sensible qualities of a single object. Sensible appearances are represented as being composed of a variety of distinct sensory qualities (e.g., red, sweet, hard, etc.), and although each of these qualities are distinct from one another, they are related to one another when the mind represents one and the same object as red, sweet, hard, etc. None of these sensory qualities are subordinated to one another, they appear instead to be distinct parts of a single whole (although those sensible qualities do stand in relations of subordination to other marks of that object). But these sensory qualities can only be coordinated with one another, or represented as distinct qualities of a single object, if they are first represented in certain spatiotemporal relations with one another: unless the redness, sweetness, and hardness were spatiotemporally contiguous, one wouldn’t assign each of these qualities to one and the same sensible object. It is only after these qualities are represented in certain locations in time and space that they are subsequently represented as qualities that belong to a single thing. Now, the coordination of the sensible qualities of appearances is posterior to the coordination of sensations, and if that is correct, then perhaps the coordination of sensations is what is originally responsible for assigning these sensory qualities to distinct locations in time and space; or, that these sensory qualities only appear in certain locations in time and space after the mind has combined the sensations which correspond to those qualities, and the way it combines those sensations by representing them in locations in time and space. If so, then the sense in which the mind combines sensations is by assigning them (or the sensible qualities they correspond to) in distinct locations in time and space.

in the third passage, when the concepts given through reason, and the spatiotemporal form given through coordination, are both removed from empirical cognition, what remains is sensation, and what that suggests is that sensation was originally present alongside of whatever was subsequently removed—and, in particular, that it was contained in the appearance. Likewise, in the fourth passage, Kant writes that the “empirical form of the appearance still remains” after the matter of cognition is removed: Kant does distinguish here between the forms of appearance and the form of empirical cognition (or intuition), but Kant appears to be referring to the form of appearances, not the form of intuition.⁹² Since, once again, sensation is identified at the start of the passage as the matter of empirical cognition, Kant is asserting that the form of an appearance is what remains after this matter is removed; but if removing this matter from an appearance leaves us with the form, then sensation must have originally been contained in the appearance as its matter.⁹³ Though Kant initially only asserts that sensation is the matter of empirical cognition—which suggests that he is identifying sensation with the matter of intuition—in the next sentence he claims that appearances contain *this* matter as well as form, and that suggests that sensation is the matter of intuition *and* appearance.⁹⁴

These claims also appear in another passage which appears to have been written a few years after the *Dissertation*, in which Kant once again asserts that sensations are represented in space and time through the coordinating activity of the mind and that these sensations, after they have been coordinated, constitute the matter of appearances.

That through which an object of experience is given to us is called appearance. The possibility of appearances on the side of the human mind is sensibility. In sensibility there is a matter, which is called sensation, and with respect to that and

⁹² This may appear to be contradicted a moment later when he refers back to the empirical form of an appearance and says that these “cognitions...are pure concepts of intuitions”, but what he is saying here is that *cognitions of* the form of appearance (or the act of cognizing that form) are pure intuitions. By eliminating sensation, one forms the concept of a pure intuition, which is just the concept of the coordinative act of the mind in abstraction of the contents that are coordinated.

⁹³ In our initial remarks on this passage, we noted that Kant appears to be asserting that sensation is not itself a sensible quality but instead a representation *of* sensible qualities: sensations are not identical to sensible qualities like colors, smells, and tastes, but are instead mental states with intentional content, while sensible qualities are the intentional objects of those states. But as we have seen, this is still consistent with the interpretation proposed by Jankowiak, for the phenomenal qualities of the sensations which constitute the matter of intuition are numerically identical to the sensible qualities which are represented in space through intuition, and what the intuition represents are the phenomenal qualities of the sensation in a certain region of time and space. Kant also claims in this passage that sensation represents that in the object which stimulates the senses, and that suggests that the intentional objects of those mental states are the features of the objects which cause those states. This is not to say that the mind represents those sensible qualities as the causes of the sensation—as though the color red is what causes a sensation—but rather that the cause of the sensation corresponds to something in the object (e.g., the surface properties which reflect light of a certain wavelength) which we represent *as* red. On this reading, the intentional object of a sensation corresponds to the features of an object which cause those states and these features are represented *as* sensible qualities, like red, black and sweet.

⁹⁴ Although, crucially, the only way this can make any sense is if the way sensation is contained in an appearance is by being *represented* as its matter, and not literally contained in it.

its diversity we are merely passive, and the multiplicity of impressions determines that we do not find anything in us *a priori* which we could have known from ourselves *a priori* before the impressions. One can never represent in thought any impression of a new kind. But the appearances also have a form, a ground lying in our subject by means of which we order either the impressions themselves or that which corresponds to them and assign each part of them its position. This can be nothing other than an activity, which is to be sure naturally aroused by the impressions, but which can still be cognized prior to them. (If we place something in space and time, we act; if we place it next to or after another, we connect. These actions are only means to bring about each position; but one can take them separately; if we take several at once or posit one action simultaneously with another, this is a kind of action, through which we posit something in accordance with the rule of appearances, where this positing must have its special rules, which are distinct from the condition of the form with regard to which they are to be located in appearance.)⁹⁵

To begin, it is important to note that in this passage Kant is not describing the matter and form of appearance, at least not initially, but rather the *grounds* of appearance. Sensations are a partial ground of appearances since an object cannot be given unless the mind first has sensations. While sensations ground the matter of an appearance, the form of appearance has a “ground lying in our subject”, and this ground surely refers to nothing other than the internal law of the mind which coordinates sensations,⁹⁶ for Kant describes this ground as that “by means of which we order either the impressions themselves or that which corresponds to them and assign each part of them its position”, which, of course, is the same way he characterizes the form of intuition in the passages cited above as well as in ID.⁹⁷ Thus, while sensation grounds the matter of an appearance, the coordinating

⁹⁵ Ak 17:618-619, Refl. 4634 (1772-73; M XXII-XXIV).

⁹⁶ It is not entirely clear whether Kant is using ‘sensation’ and ‘impression’ interchangeably here, but it seems likely, for after identifying sensation as the matter of sensibility he then proceeds to refer to them as impressions in the remainder of the passage. It is possible that ‘sensation’ and ‘sense-impression’ are not equivalent for Kant; perhaps ‘sense-impression’ refers to the immediate effect given to the mind through affection, the sensory content which initially exists as a mode of the subject and qualifies the mind; ‘sensation’, in turn, is perhaps used to refer to the sense-impressions after they have been coordinated by the mind, and which are then represented as the sensible qualities of objects. In other words, sense-impressions are uncoordinated sensations, while sensations are sense-impressions after they have been assigned locations in time and space. This second reading is the one proposed by Jankowiak, *Sensation and Intentionality in Kant's Theory of Empirical Cognition*, p. 59. Aside from these alternatives, it is hard to see what else sense-impressions could be. They are surely not the material impressions produced in the sense-organs, as on Falkenstein’s reading, for the spatiotemporal order in which those material impressions appear in the body is *given* through affection, not *produced* by the coordinating activity of the mind, though Kant is explicit in these passages that sensations, or sense-impressions, are assigned positions in time and space by the mind, that they only come to be represented in spatiotemporal locations through coordination.

⁹⁷ Note, once again, that while the mind is passive in sensation, it is active when producing the spatiotemporal form of an appearance, for the law of the mind which coordinates sensations “can be nothing other than an activity.” In the *Dissertation*, the reason the mind is passive in sensation is because it is not causally responsible for the existence of sensations. But in this passage, the mind is passive for a different (albeit related) reason, namely, in regards to its ability to know the sensory content given by affection: we cannot discover what kinds of sensations we will have before being affected by objects, since we cannot ever

activity of the mind is the ground of the form of appearance. Kant is explicit in this passage that the spatiotemporal form of appearances only arises when the impressions given through affection are actively arranged by the mind, which orders these sensations by assigning them, or projecting them onto, locations in space and time. This explains the sense in which appearances are grounded in intuition: when the mind orders its sensations into spatiotemporal relations, it is then presented with an appearance, which seems to be nothing more than a collection of sensory qualities arrayed in time and space. Appearances are thus grounded in intuition in the sense that the mind comes to represent sensible objects in time and space when the sense-impressions received through affection are coordinated by being assigned locations in time and space.⁹⁸

There are two additional comments worth making about this passage. First, if the mind must order sensations in time and space, then that appears to suggest that sensations, before they are coordinated, are neither spatial nor temporal; if they were, there would be no need for the mind to actively assign them positions in time and space. But Kant is explicit that the spatiotemporal positions of sensations are brought about by the mind itself: the coordinating activity of the mind is that by means of which we “place something in space and time” and “place it next to or after another”, and as actions performed by the mind itself, they are the “means to *bring about each position*” (my italics).⁹⁹ Second, if this is correct, then although sensations constitute the matter of

“represent in thought any impression of a new kind.” This idea will be familiar to any reader of Locke or Hume: one cannot anticipate, prior to experience, what sensations a pineapple or wine will produce before tasting them, and anyone who lacks the requisite sense organs will be unable to form an idea of the sensory content those objects produce when they affect the senses—the mind only comes to acquire these ideas through experience. In contrast, the forms of intuition are knowable a priori, since we can anticipate, prior to experience, that all representations will have spatiotemporal form, for insofar as time and space are the conditions for any possible sensory experience, any object represented through the senses must appear in time and space—and one can also anticipate the basic structural features that any appearances will have, i.e., that they will be three-dimensional, continuous, etc.

⁹⁸ And, as Kant notes, these appearances can *then* become objects of experience when they are represented through general concepts. Note once again that higher-order cognitions are based on the (comparatively) lower-order conditions that make them possible: an object of experience is made possible after an appearance is first given, while an appearance is made possible when sensations have been coordinated.

⁹⁹ In the parenthetical remark, Kant alludes to certain “special rules of appearance,” and although he does not explain just what these rules are, it is likely that he is referring to the categories of relation and the role they play in determining the objective order of succession, simultaneity, (etc.) among appearances, and distinguishing that order from the subjective order of perception. The coordinating activity of the mind, which is likely the ground of the subjective order of succession and simultaneity, is not identical to any of these “special rules”, whatever they might be, for Kant is explicit that these rules are “distinct from the condition of the form with regard to which they [i.e., sensations] are to be located in appearance.” The internal law of the mind which coordinates sensations is the condition according to which sensations are “located in appearance”, it is that which explains how the mind is first presented with an array of sensory qualities arranged in spatiotemporal locations, though the objective order of these appearances may need to be determined through the additional application of the categories of substance, cause-effect, community, (etc.) i.e., the “special rules of appearance”. That is, when we take these acts of positing together, and compare them with one another, we may find that the most coherent ordering of these perceptions changes the objective order according to which they are represented. So, when I perceive the parts of the house one after another, the parts of the object don’t succeed one another though my representations do. In order, then, to make these two representations coherent, we have to distinguish

appearance, they only do so *after* the mind has projected sensations outside itself by coordinating them. Sensations are nothing more than modes of the subject, and they only come to be represented in a spatiotemporal array as the sensible qualities of appearances *after* they have been coordinated by the mind.

To conclude, the interpretation suggested by these passages, together with the textual evidence from ID, is that there is indeed a sense in which sensations constitute the matter of appearance. Sensations are first given to the mind through affection, and they only exist as mental states or modes of a thinking substance. Each sensation is a quale of some sort or other, and, considered in abstraction of the mind's coordinating activity, these sensations are neither spatial nor temporal. But when sensations are combined with the forms of intuition, spatiotemporal form is then imposed upon them, and sensations are then projected outwards and come to be represented outside the mind in spatiotemporal locations. It is in this way that these sensations come to "constitute" the matter of appearance, namely, by being represented as the sensible qualities of external objects. Although sensations only exist as states of the subject, they are not represented in that way.

But although this is what Kant says, it is far less clear what his motivations were for adopting this peculiar view of empirical cognition. That spatiotemporal form is something imposed upon the mind's sensations though its own innate activity is assuredly an aspect of Kant's view, but his reasons for asserting that sensations are themselves intrinsically non-spatial and non-temporal, and only come to be represented outside the mind through coordination, have yet to be uncovered. The answer to these questions will be given in chapter 4, and it is really only then that we will finally be able to come to terms with his account of sensory cognition. But before we turn to these matters, it is first necessary to get clearer on Kant's theory of the intellect, and this will be the subject of the next chapter.

between the objective order of succession from the subjective order, and the only way to do that, Kant thinks, is by representing the house according to the category of substance-attribute.

Chapter 2

Having outlined Kant's theory of sensory cognition in Ch. 1, the goal of this chapter is to explain Kant's theory of the intellect as it appears in the *Inaugural Dissertation*. Not only will this help us get clearer on how Kant intended to accomplish his main goal of providing a method for metaphysics, it is also of the utmost importance for understanding Kant's account of the concepts of time and space. In the introduction, we noted that the central project of the *Dissertation* is to secure a proper method for metaphysics and that the key to this new method revolves around Kant's distinction between the faculties of sense and intellect. As we have already observed, the ultimate viability of Kant's proposals depends upon whether he can establish, first, that sense and intellect are distinct sources of cognition, and second, that time and space are not representations that belong to the intellect. There were two major problems that we encountered in the course of our discussion. First, it is not at all clear what the distinction between sense and intellect is based on. When Kant introduces the distinction at the beginning of §3, he appears to formulate it in terms of receptivity and spontaneity, but in the last chapter we demonstrated that the spatiotemporal form of what is sensed is produced through a spontaneous act of the mind which orders the sensations given through affection by actively arranging them in a spatiotemporal order. What this seems to entail is that the distinction between sense and intellect cannot be given in terms of spontaneity and receptivity, at least not in the *Dissertation*, for although the mind is active when generating the representations of time and space, they are assuredly not representations that belong to the intellect. Another possibility we considered is that the distinction is based on something having to do with the content of our representations, or on certain fundamental differences in the nature of the things which the mind represents. The problem with this proposal is that it was not at all clear just what these differences are supposed to be. What initially appeared to be the most promising option is that the distinction is based on whether the content of a representation is something singular or general: through the intellect the mind represents general concepts, while the representations that belong to sensibility are singular intuitions. But there are also strong reasons to doubt whether the distinction can ultimately be grounded on the difference between singular and general representations. The first problem is that Kant never attempts to show why these representations are not reducible to one another, though he should have, since many of his contemporaries tried to do just that: Hume, Condillac and the French Materialists all argued that the ability to represent general ideas does not require a faculty other than sense, while others, like Wolff, proceeded in the opposite direction, arguing that the singular ideas given by the senses are all confused concepts, and that once these have been analyzed by the intellect, they will then be general concepts of the understanding. The second problem, even more serious than the first, is that there is strong textual evidence which suggests that Kant himself does not think that the difference between singular and general representations is what grounds the distinction between sensory and intellectual cognition. When Kant outlines his theory of the intellect in §5, one of the key points he stresses is that the generality of a cognition does not entail

that it belongs to the intellect, for a cognition can be of something general and yet remain sensory. The basic problem, then, is that neither of the two criteria which are supposed to ground the distinction between sense and intellect (receptivity and spontaneity on the one hand, singularity and generality on the other), seem to adequately ground the distinction.

The goal of this chapter is twofold. The first is to explain Kant's theory of the intellect as it appears in the *Inaugural Dissertation*. The second is to combine the results we obtain in the course of our discussion with the findings of the previous chapter so as to explain the true grounds for the distinction between sense and intellect. As will become clear in §2.2 and §2.3, Kant's conception of the intellect, as well as his account of the true method of metaphysics, involves a rejection of certain key elements of the views of Christian Wolff and his followers. For this reason, in order to set the scene for Kant's own account of intellectual cognition, we will begin with a preliminary discussion of Wolff's conception of the intellect, as well as a brief overview of Wolff's views on philosophical methodology, especially as it applies to metaphysics. We then turn in §2.2 to Kant's account of the intellect. In §5 of ID, Kant draws a distinction between what he calls the real and logical use of the intellect; as I will show, much of what Kant says about the intellect in ID revolves around this distinction, and our main task in section §2.2 will be to get clear on the nature and characteristic functions of each of these forms of the intellect. With these results in hand, in §2.3 I will then explain how Kant used the distinction between the real and logical use of the intellect to reject Wolff's theory of the intellect. I will then show in §2.4-2.5 that Kant's views on the nature of the intellect are largely derived from Leibniz's account in the *New Essays*, and that a careful overview of this text is of great use in shedding further light on Kant's views in ID. The results obtained in each of these separate sections are then taken up in §2.6, where I provide an analysis of the grounds of the distinction between sense and intellect. I will argue that this distinction cannot ultimately be based on the origins of a representation, but must instead be based on the content of a representation; but singularity and generality are not what ground the distinction. Rather, what grounds the distinction is the difference between representations whose intentional content is abstract and those which are concrete.

Section §2.1: Wolff on Philosophical Methodology & Intellectual Cognition

Wolff's most detailed exposition of his conception of philosophical method appears in the *Preliminary Discourse on Philosophy in General*. According to Wolff, philosophy will only become a genuine science when it is able to provide demonstrations of propositions "by legitimate sequence from certain and immutable principles."¹⁰⁰ The paradigm of a scientific discipline is mathematics, which Wolff regards as a model for all scientific reasoning:¹⁰¹ in mathematics one begins with concepts that are clear and distinct, basic principles and axioms which are certain, and rules of inference which guarantee the truth of the propositions derived from the axioms of the system, so that

¹⁰⁰ Christian Wolff, *Preliminary Discourse* (Indianapolis: The Bobbs-Merrill Company, Inc, 1963), 2.30. Henceforth, this title will be abbreviated as PD.

¹⁰¹ PD 4.139

every proposition that is proven is known with absolute certainty. Wolff tells us that the method of philosophy should be identical to the method of mathematics; this does not mean, however, that philosophy must “borrow its method from mathematics”,¹⁰² for the method which is best exemplified by mathematics is not specific to any one science, but is instead common to all sciences. This method is derived from a common root, namely “the notion of certitude”; that is, the common source which gives the method for these disciplines, as well as any other which deserves to be called a “science”, are the rules which any discipline must follow in order “to arrive at certain knowledge”.¹⁰³ In order, then, to have the certainty necessary for being a science, philosophy must be organized as a deductive system. This requires, first, that the terms which appear in philosophical propositions are all rigorously defined; second, that the basic principles are all certain; and third, that every proposition admitted into the system is ultimately derivable from basic principles by means of deductively valid inferences.¹⁰⁴

The ability to correctly apply the rules for constructing a science requires an understanding of logic, for it is “logic [which] explains how to define accurately, how to formulate determinate propositions, and how to demonstrate legitimately.”¹⁰⁵ Logic is defined as “the science of directing the cognitive faculty in the knowing of truth”,¹⁰⁶ and the purpose of logic is to show “how we may use the understanding in the knowledge and search of truth.”¹⁰⁷ The mind acquires knowledge through the use of the understanding, which Wolff defines as the “faculty of conceiving possible things.”¹⁰⁸ Wolff, along with many others in the early modern period, shares the traditional view that there are three basic operations of the understanding:¹⁰⁹ the first consists in the bare representation or apprehension of a thing, or, is that which enables the mind to form concepts¹¹⁰; the second operation is judgment, which occurs when the mind connects, or separates, different concepts¹¹¹; and the third operation is inference, or ratiocination, which consists in deriving one judgment from others by means of a deductively valid inference. Logic

¹⁰² Ibid.

¹⁰³ Ibid.

¹⁰⁴ PD 2.33, 4.116-118 & 4.139; cf. PD Ch. 4 for details of this method.

¹⁰⁵ PD 4.135

¹⁰⁶ PD 3.61

¹⁰⁷ Christian Wolff, *Vernünfftige Gedanken von den Kräften des menschlichen Verstandes und ihrem richtigen Gebrauch in der Erkenntnis der Wahrheit* (Halle, 1754, 14th ed), lxvi. Henceforth, I will refer to this work using the abbreviation DL (for *Deutsche Logik*). All translations of this work are from *Logic, or Rational Thoughts on the Powers of the Human Understanding* (London: L. Hawes, W. Clarke, & R. Collins, 1770).

¹⁰⁸ DL 1.15

¹⁰⁹ DL lxvi. In the *Vernünfftige Gedanken von Gott, der Welt und der Seele des Menschen, auch allen Dingen überhaupt* (Halle, 1751, 7th ed), §284, Wolff notes that ‘understanding’ is often used ambiguously. In the broadest sense, ‘understanding’ is used to refer to the power the mind has to apprehend something through a concept; as Wolff notes, however, in this sense of the term even sensations and images are all alike acts of the understanding. But Wolff also uses the term more narrowly to refer to the faculty which enables the mind apprehending something through a *distinct* concept, or, to form distinct concepts of the things the mind represents. We will discuss this narrower sense of the term below. Henceforth, I will refer to this work using the abbreviation DM (for *Deutsche Metaphysik*)

¹¹⁰ DL lxviii

¹¹¹ DL 3.1-2

investigates each of these operations in a systematic order, beginning with apprehension, then judgment and finally inference; the reason these operations are dealt with in this order is because the elements involved in one operation are the products of the operation which immediately precedes it: a judgment is an operation performed on the concepts the mind represents, while an inference can only be made after the mind has made judgments whose relations it can then investigate. The analysis of concepts is thus at the very foundation of any scientific system, for concepts are the building blocks upon which all subsequent judgments and inferences are based. If the propositions which make up a system of philosophy are to have the certainty required to be a science, the concepts which appear as the constituents of these propositions must all be rigorously defined; similarly, inferences made from uncertain propositions will not be able to guarantee the certainty of their conclusions. Conceptual analysis is thus at the very core of the Wolffian program, for “in the sciences, all depends on distinct and complete notions”¹¹²; it is through definitions, or distinct and complete notions, that “the foundation of all solid knowledge in the sciences is laid.”¹¹³ Since Wolff’s account of conceptual analysis is the only element of his logic that is important for our purposes, in what follows we will ignore his theory of judgment and ratiocination and focus instead on his theory of concepts.

Wolff discusses the nature and origin of concepts in Ch. 1 of the *Deutsche Logik*.¹¹⁴ Wolff’s use of the term ‘concept’ is very broad, since it is used to refer to “any representation of a thing in our minds” (“Einen Begriff nenne Ich eine jede Vorstellung einer Sache in unseren Gedancken”¹¹⁵); throughout his discussion, the term is used to refer both to representations of individual objects, which are singular concepts, as well as the characteristics that a number of individual objects share in common with one another, to general or discursive concepts.¹¹⁶ Every concept is initially obtained through sensory experience, for the senses are what first “give occasion to thoughts or representations of the things outside us.”¹¹⁷ The concepts originally given by experience are all obscure: the mind’s understanding of the things it represents is limited to what it immediately perceives through the senses, and that means that the various features contained in those things have not yet been adequately identified and distinguished from one another. But once these concepts have been given, the mind can then begin to examine these concepts

¹¹² DL lxxi

¹¹³ DL lxxvi

¹¹⁴ Similar discussions appear in *Philosophia Rationalis sive logica* (Frankfurt: 1728), §30-115; *Psychologia empirica methodo scientifica pertractata* (Frankfurt & Leipzig, 1732) §325-424; DM, §198-325.

¹¹⁵ DL 1.4

¹¹⁶ As Wolff tells us in the preface, this division is based on the fact that all our representations “are either of singular or individual things, or universal” (DL lxxi). Although it is more common to use the word ‘concept’ to only refer to general representations, the distinction between singular and general concepts was customary among the Wolffians. See Alexander Baumgarten, *Acroasis Logica* (impensis C.H. Hemmerde, 1773), Ch. 1, sec. 1, §51; Georg Friedrich Meier, *Auszug aus der Vernunftlehre* (Halle, 1752), §260 pp. 71-72 & §262, pp. 72-73; Cf. *Vernunftlehre* (Halle, 1762), Pt. I, sec. 8. Meier distinguishes between singular and abstract concepts, where the former refer to everything we represent immediately through experience (including sensations, *ibid.* §255, p.70), while the latter are those formed by abstraction; Meier also distinguishes between universal, particular and singular concepts.

¹¹⁷ DL 1.5

by subjecting them to various kinds of analysis so as to gradually improve its understanding of the things it represents. These operations include: carefully observing the things presented by the senses to discern their various features; comparing several things together to determine whether they are similar or different; distinguishing one thing from another when the mind notices that they have different features; and comparing several instances of the same *kind* of thing together to see in what respects those particulars agree and in what respects they differ.

Through these various operations the mind gradually comes to refine the concepts it has of the things it represents. For Wolff, concepts may be classified according to the degree and manner in which their structure is grasped by someone in possession of that concept. A concept is either clear or obscure, distinct or confused, complete or incomplete, adequate or inadequate. This elaborate classification corresponds to the different levels of understanding that one can have of the things one represents through a concept.¹¹⁸ The analysis of the concepts originally given through experience is a process that proceeds in a series of stages; each stage results in a certain level of understanding which builds upon the results attained in the earlier stages. The ultimate goal is to discover the definition of a concept, which consists in the ability to enumerate the various marks which are both necessary and sufficient for a thing to fall under that concept. The possession of a concept is thus something that comes in degrees; the sense in which one *has* a concept depends upon how well one understands the structure of that concept, and this understanding is measured, in turn, by how proficient one is at accomplishing different kinds of tasks.¹¹⁹ At a minimum, the very least that is required for having a concept in the first place, or, in other words, the lowest level of understanding which makes the difference between having a concept and not having it at all, consists in the ability to classify things according to their similarities and differences. This is the lowest level of proficiency, or understanding, one might have with a concept, and this proficiency can of course come in degrees depending on how accurate one is in their classification. A concept is clear when its possessor has the ability to always correctly distinguish the objects which fall under that concept from those which do not, e.g., my concept of red, or

¹¹⁸ As Nicholas Stang, *Kant's Modal Metaphysics* (Oxford: Oxford University Press, 2016), p. 21n39 has helpfully noted, these terms do not apply to concepts *simpliciter*, for whether or not a concept is clear or obscure, distinct or confused (etc.), depends upon how well it is understood by the mind that has that concept, e.g., one and the same type of concept might be, for example, clear in one mind and obscure in another. Stang suggests that we distinguish between concept types and concept tokens. The concept C can either refer to a token of that concept, which is just a mode of the individual thinker that has that concept, or the type of that concept, where this refers to whatever it is all the token concepts have in common with one another which makes them tokens of a single type. To say, then, that a concept is clear for one mind and obscure for another just means that different tokens of this concept can exist in different minds, and in some of these minds that token concept is clear while in others it is obscure.

¹¹⁹ Among these various tasks are included the ability to (1) correctly categorize objects into classes; (2) explain why objects are grouped in one class rather than another; (3) to accomplish both (1) and (2) for each of the marks of a concept. This is not meant to imply that the possession of a concept is to be analyzed behavioristically. There is more involved in having a concept than simply the ability to accomplish certain tasks, for the ability to accomplish these tasks is ultimately explained in terms of the underlying mental states which *explain* someone's ability to accomplish a given task.

of triangularity, is clear if I can always distinguish objects which are red, or triangular, from those that have some other color or shape.¹²⁰ Concepts that are not clear are obscure, and this obscurity may come in degrees, depending on how accurate one is in their ability to correctly recognize the objects that fall under that concept. Clear concepts are, in turn, either confused or distinct. A clear concept is distinct when one can enumerate the various marks one uses to distinguish one thing from another, either explicitly through language or privately in thought.¹²¹ One has, for example, a distinct concept of triangularity if one can say that it is something with three-sides, three-angles, that its interior angles equal 180 degrees, etc. A concept that is not distinct is confused, and this again can come in degrees, depending on how many marks can be enumerated by the possessor of that concept: I have a clear concept of the color red if I can recognize red objects when I encounter them, and can distinguish between those objects which are red from those which are not, but unless I can articulate the various marks contained in this concept, or the characteristics of an object which make something red as opposed to some other color, the concept will be confused rather than distinct.

Wolff next distinguishes distinct concepts into those that are complete and those that are incomplete. A distinct concept is complete “when the characters or marks assigned, are sufficient to distinguish the thing at all times from all other things.”¹²² That is, a concept is complete whenever someone in possession of that concept can enumerate enough of the marks contained therein so as to be able to always distinguish the objects falling under that concept from those which do not—otherwise, it is incomplete. A concept that is merely distinct will not allow its possessor to determine, in every possible case, whether an object falls under that concept or not. In order to have a distinct concept, one must be able to list some of the marks that distinguish one thing from another, but if the list of marks one has is not complete, these marks may not always enable one to determine, for every possible thing, whether it falls under that concept or not. For example, the Cartesian concept of body (i.e., “a thing extended in length, breadth, and depth”) is incomplete, for although being extended in length, width, and breadth is characteristic of all bodies, these marks alone are not sufficient for distinguishing all bodies from non-bodies; in particular, by “this character or mark alone, we cannot distinguish Body from Space, which, therefore, the Cartesians hold to be the same with body”, though they are certainly different.¹²³ Likewise, being a polygon is a characteristic of every triangle, but this mark is not by itself sufficient to always distinguish triangles from non-triangles, since there are polygons that are not triangles. In order to have a complete concept of triangularity one must be able to enumerate the marks that are both necessary and sufficient for something to be a triangle, one must be able to say, for example, that a triangle is a “space contained under three straight lines”,¹²⁴ or, a three-sided polygon. Thus, a concept is complete when its possessor can give the necessary and

¹²⁰ DL 1.9

¹²¹ DL 1.13

¹²² DL 1.15

¹²³ Ibid.

¹²⁴ DL 1.27

sufficient conditions that any object must satisfy to fall under that concept, where these conditions are all the essential characteristics of the things that fall under that concept.

Finally, complete concepts can be either adequate or inadequate. A complete concept is adequate when “we have clear and distinct notions also of the characters or marks, by which we know a thing”; on the other hand, if we have “confused notions of the characters which distinguish a thing”, the concept is inadequate.¹²⁵ In order to have a complete concept of triangularity, one must be able to enumerate all and only those marks which are necessary and sufficient for something to be a triangle; but the marks contained in the concept triangle include the concepts of polygon and three-sided, and these concepts can be either obscure or clear, distinct or confused, complete or incomplete, depending on how well one understands the various component marks of each of these concepts. In order to have an adequate concept of triangularity, not only must the possessor of that concept be able to enumerate all the marks it contains, they must also have clear and distinct concepts of each of the marks that are involved in the enumeration of that initial concept.¹²⁶ One must be able, in other words, to give the marks which belong to the concept polygon, three-sidedness, etc., so that one’s possession of those concepts is also clear and distinct.

This elaborate classification of concepts is closely connected to Wolff’s theory of definition. Wolff, following Leibniz, draws a distinction between two kinds of definition, nominal and real. The nominal definition of a concept corresponds to the complete concept of a thing¹²⁷; to have a nominal definition of a concept one must be able to enumerate the marks which are both necessary and sufficient for any object to fall under that concept. A real definition explains “the Origin or Formation of a thing”,¹²⁸ or how it is possible for any objects to fall under that concept.¹²⁹ The real definition of a concept requires one to specify “What things are requisite to its formation” and “What it is that each of them contributes”.¹³⁰ When Wolff tells us that a real definition explains the origin or formation of a thing, it is important to understand precisely what kind of explanation he has in mind, especially since many of his examples might easily lead one to suspect

¹²⁵ DL 1.16

¹²⁶ Ibid.

¹²⁷ DL 1.36

¹²⁸ DL 1.49

¹²⁹ The reason why it is important to provide real definitions is because many of the concepts we have which can be defined nominally cannot, in fact, be satisfied by any possible object since they implicitly contain a contradiction. One of Leibniz’s examples is the concept of the most rapid motion: while the individual marks of this concept are each consistent on their own, a contradiction results when they are combined together into a single concept, and what this shows is that not every concept which has a nominal definition does in fact correspond to a possible object. And if that is correct, we should not attempt to base any inferences or judgments on concepts until we have first shown that they are in fact consistent. Leibniz famously drew this distinction between real and nominal definitions to show that there is a gap in Descartes’ ontological proof for the existence of God: one cannot show that existence is contained in the concept of a perfect being unless one first proves that the latter is a possible concept and does not contain a covert contradiction. See Leibniz, “Meditations on Knowledge, Truth and Ideas” (in *Philosophical Papers and Letters*, Dordrecht: D. Reidel, 1969, ed & translated by Leroy Loemker, 2nd ed), pp. 292-293.

¹³⁰ DL 1.49

that a real definition explains how something comes to be by specifying the efficient causes which bring that thing into existence.¹³¹ This, however, would be a mistake. Wolff distinguishes between providing a “reason of being” (*ratio essendi*) and a “reason of becoming” (*ratio fiendi*). A reason of being explains the origin of a possible thing by showing how that thing is possible. A reason of becoming explains the origin of actual things by explaining how it is that something that was merely possible became actual.¹³² A real definition specifies the *ratio essendi* for a possible being, it explains the origin of a thing in terms of its being. Something is possible just in case the set of determinations¹³³ which constitute its nature are consistent with one another. The *ratio essendi* for a possible being explains how the various determinations which make that thing what it is may be combined together without contradiction so as to give that being, or, how a being becomes possible through the combination of the determinations which constitute its nature. It is in this sense that a real definition explains the “Origin or Formation of a thing”¹³⁴: a real definition explains the origin or formation of a thing by enumerating all the different determinations which make it the kind of thing it is and how those determinations can be combined together into a single thing without contradiction, or, in other words, how the combination of these determinations results in a possible being.

Wolff describes a number of ways to acquire a real definition. One way is to begin with a nominal definition of a concept and then attempt to discover, through analysis, the “distinct notions of all the characters or marks contained” in its nominal definition.¹³⁵ Once one has obtained distinct concepts of all the marks contained in a concept, one may then proceed to try and determine which of the marks are more fundamental than the others, by comparing one with another to see which explain the presence of the others contained in that concept.¹³⁶ Once one discovers which of these marks are fundamental, one has obtained the real definition of that concept. One can also discover the real definition of a concept by going in the opposite direction, so to speak, by constructing the concept of a thing from concepts one already understands to show how a concept can be obtained or produced by combining those other concepts together.¹³⁷ In this case, we begin with certain concepts which we already know are possible, and then show that no contradiction arises when they are combined to form a more complex concept.

One cannot have a real definition unless one also has a proof that the concept defined is possible. Wolff says that one can determine whether a concept is possible, or,

¹³¹ See, for example, his account of the real definition of the concept of vapor (DL 1.54).

¹³² Christian Wolff, *Philosophia prima sive ontologia* (Frankfurt, 1730), §866 (henceforth, *Ontologia*). I am indebted to Corey Dyck, “Christian Wolff”, *Stanford Encyclopedia of Philosophy*, §5.1 for bringing this distinction to my attention.

¹³³ For Wolff, ‘determination’ is used to refer to the ontological correlate of a predicate. At times, Wolff uses the term to denote a feature or characteristic of some object; other times, he uses it to refer to a mark of a concept. I use ‘characteristic’ and ‘feature’ below as synonyms for ‘determination’, when the later term refers to something in an object. A mark is a component of a concept, and concepts are mental states of some sort.

¹³⁴ *Ibid.*

¹³⁵ DL 1.54

¹³⁶ *Ibid.*

¹³⁷ DL 1.51

whether the thing defined could genuinely exist, in one of two ways, either through experience or through a demonstration. The first way to determine whether something is possible is through sensory experience: if we encounter an object in experience, we know the concept that object corresponds to is actually instantiated, and that means we also know that it is a possible concept, for anything actual must also be possible.¹³⁸ The second way to guarantee the possibility of a concept is by giving a demonstration, where this requires that we show “the manner of the Rise and Origin of a thing; or when we examine whether any thing flows from it, the possibility of which we already know”.¹³⁹ The basic idea here is that we can show that a concept is possible if we can explain the manner in which it is formed from other concepts which we already know are possible: “For, when we understand in what manner a thing can rise, we no longer doubt of its possibility. If from any notion impossibility should flow, that notion itself cannot be possible; but if possibilities flow, the notion must of necessity be possible: For, what flows from another, can itself therefore be possible, because, that other is so”.¹⁴⁰ What Wolff appears to have in mind here is that the possibility of a concept can be demonstrated if we can explain how an object corresponding to that concept can be created, presumably in the sense of a *ratio essendi*. If we start with certain concepts which we know are possible, and then show that no contradiction arises when those concepts are combined, then we will have a demonstration that the concept is a possible.¹⁴¹

¹³⁸ DL 1.31. Even though experience may show that a concept is possible, this alone does not yet amount to a demonstration, or an explanation of *how* that thing is possible. It is only after we have completely analyzed that concept into its constituent marks, and shown that there is no contradiction involved in combining them to form a composite concept that we have a *demonstration* that the thing is possible (DL 1.32). In “Meditations on Truth, Knowledge and Ideas”, p. 293, Leibniz explained how one demonstrates that a concept is possible by analyzing all the marks contained in its nominal definition into their constituent marks, and then broken down these marks into their own constituent marks, and so on, until one has completely reduce it to its most primitive components: the concept is demonstrated to be possible if one has managed to identify the primitive concepts of a complex concept, demonstrated that these concepts are not self-contradictory, and then shown how the composite concept can be produced without contradiction by combining these simple concepts. This method, which demonstrates the possibility of a concept after breaking it down to its simple components, is regressive since one begins with something complex and then reduces it to simples; in contrast, the alternative method is progressive, beginning with simple concepts and then showing to form complex concepts through combination.

¹³⁹ DL 1.35

¹⁴⁰ Ibid.

¹⁴¹ Ibid. The examples Wolff gives include Euclid’s demonstration of the possibility of an equilateral triangle “when he teaches how to describe such a triangle on any given right line”; similarly, the possibility of a machine is demonstrated when we show “its method of construction”. This method of establishing possibility is, as Wolff notes, more difficult than the others. If I determine a concept by adding marks to it “arbitrarily”, or determine a concept to have certain marks not presented in experience, I cannot be sure that the concept which is thereby formed is actually possible (“...if we determine any notions arbitrarily (DL 1.30.); we cannot know, whether these notions are possible, or whether we are deceived by empty sounds, as our arbitrary will can render nothing possible” (DL 1.33)). There is always a danger that a concept formed in this way may contain an implicit contradiction, for although each of the marks that are combined to form a new concept may be possible by themselves, when they are combined together they may result in a concept that has inconsistent marks. Thus, “...it is equally possible for two lines to be either right or curve; but, if you farther add, that they contain a space, or that both ends shall meet; this, indeed, answers in the case of curve, but not of right lines” (ibid). It is of the utmost importance, then, that we be

As we noted above, for Wolff every concept the mind has is either of something singular or general.¹⁴² Concepts of individuals are formed by discerning the different features that make them up; the concept of an individual is made distinct by carefully examining all its particular features and parts, until the marks contained in that concept can be easily distinguished from one another and then compared with respect to their order and connection.¹⁴³ After we form concepts of distinct individuals, general concepts are acquired by “comparing the notions of different things together”, so that “we either meet with some things, which they have in common, whereby they are similar; or with things peculiar to each, whereby they are different.”¹⁴⁴ It is in this way that the mind forms general concepts, or a concept that refers to a collection of features which a set of particulars share in common with one another. When particular things are observed to agree with one another in certain respects, we form a general concept by focusing solely on what they all share in common, while ignoring those characteristics which are peculiar to any one individual. As Wolff explains, by “comparing the notion of a right lined Triangle with that of a Square, I find, that both are contained under right lines”, and once these concepts are found to agree with one another in this respect, one can “seclude or select that which is common in both notions” so as to form a new concept “which agrees to both”, namely that “it is a space, contained under right lines.”¹⁴⁵ More general concepts can be obtained through further acts of abstraction, for by omitting more of the marks in a concept the mind can “ascend to notions still more general.”¹⁴⁶ Thus, by leaving out “the species of lines” from the concept of a right-lined triangle, we acquire the concept of a triangle in general, and again, by “omitting the number of lines, there remains the notion of a right-lined figure”; finally, if one abstracts “both the species and number of sides, there remains the notion of a plane figure in general.”¹⁴⁷ Again, beginning with the concepts of man and beast, the mind can form a general concept of animal, “and from the concepts of animal and vegetable”, the general concept of a living creature can be acquired by abstracting the marks peculiar to each of these two concepts.¹⁴⁸

able to determine whether, and how, “by this arbitrary combination of some things, the genesis or formation of any thing is discovered” (DL 1.53).

¹⁴² DL lxxi.

¹⁴³ DL 1.19

¹⁴⁴ DL 1.26

¹⁴⁵ Ibid.

¹⁴⁶ DL 1.27

¹⁴⁷ Ibid.

¹⁴⁸ DL 126. Cf. DM §832-836. These operations correspond to the three different ways in which the mind can acquire distinct concepts. The first way of forming a distinct concept is by carefully examining all the parts of an individual thing; the second way is by abstraction; the third and final way is by combining together distinct marks that are not already in a concept to form a new, distinct concept. This third way of acquiring distinct concepts consists in determining “what remains still undetermined, in a possible manner” or by determining what is already determined in a different way (DL 1.30). Beginning with the concept of a thing which is already determinate in certain respects, one can then acquire a new concept from that one either by adding additional marks which it does not already have or by replacing some of its marks with others. Thus, the general concept of triangle is determined with respect to the property “space contained under three lines”, but it is not yet determined with respect to the length of its sides, or its particular size or magnitude; by adding new marks so as to specify this concept, one may acquire new

Through these acts of abstraction, the mind gradually comes to acquire more and more general concepts. Concepts that are more general are formed by leaving out the marks contained in a less general concept, and the more marks that are left out, the more general is the concept thereby acquired. Wolff classifies general concepts using the traditional terminology of ‘genus’ and ‘species’: concepts are of the same species “if the notion is common to several singular or individual things” while they are of the same genus “if the notion is common to different species”.¹⁴⁹ Concepts that are more general are said to be contained in the more specific concepts from which they were originally abstracted, for these more general concepts are formed when the other marks present in a more particular concept are omitted, so that only the marks of the more general concept are left behind. These general concepts are contained in those that are less general since they are nothing more than that less general concept with some of its marks left out (these “universal and general notions contain nothing but what is in the particular notions, from which they are abstracted”).¹⁵⁰ The marks of the general concept are thus contained in the more specific concept since they originally coexisted alongside the other marks that were omitted when forming the more general concept, they form part of the content of the less general concept from which it has been abstracted. Conversely, while more general concepts are said to be contained in those that are less general, less general concepts are said to be subordinated under those that are more general. A less general concept is one that has a more determinate content than the more general concept abstracted from it and these less general concepts are said to be derived from those that are more general since they are obtained by adding marks to a more general concept.

The method of conceptual analysis sketched above is common to all the sciences, but for our purposes what is most important is how this method is applied to philosophy in particular, specifically the science of ontology. Wolff defines philosophy as “the science of all possible things, together with the manner and reason of their possibility”.¹⁵¹ Wolff provides a highly elaborate classification of the different parts of philosophy, each of which investigates a specific subject matter—physics deals with the nature of body, psychology studies the soul, etc.—and is organized as a deductive system, with its own fundamental concepts and principles which are employed to demonstrate the various truths belonging to that discipline. Each of the different branches of philosophy are organized, in turn, so that “those parts come first which provide principles for the other parts”¹⁵²: in other words, one branch of philosophy is subordinate to another when the latter provides demonstrations of the basic concepts and principles assumed by the former. According to Wolff, if philosophy is to become a science the different parts of philosophy must be dealt with in a systematic order, beginning with those branches which

concepts such as the concepts of equilateral, scalene or isosceles triangles. Similarly, one might replace one of the marks with another to form a new concept, for example, “if, in the place of right lines, I put curves, a procure a curvilinear Triangle” (DL 1.30).

¹⁴⁹ DL 126.

¹⁵⁰ DL 1.32

¹⁵¹ DL Preface.1; cf. PD 2.29

¹⁵² PD 3.99

demonstrate the fundamental concepts and principles presupposed by the other parts. The more detailed branches of philosophy will not be certain unless the fundamental concepts and principles which they rely on are themselves demonstrated, so that the proper way to develop each of these branches is to begin with the most fundamental part of philosophy and then proceed by developing the more specific branches in light of the results obtained in the more fundamental parts. The most fundamental branch of philosophy is the one which demonstrates the concepts and principles employed by all the others, and for Wolff, this branch is ontology, which he defines as “the science of being in general”.¹⁵³ Ontology is the science that studies the most fundamental principles and categories of being, or the most general concepts which are common to every possible being: “...all things, whether bodies or spiritual beings, in some things agree, and in some others disagree or differ; their general agreements, and general disagreements or differences, comprising the general knowledge of things, constitute that branch, which we call Ontology”.¹⁵⁴ Included among these fundamental categories are “the notions of essence, existence, attributes, modes, necessity, contingency, place, time, perfection, order, simplicity, composition, etc.”¹⁵⁵ As the science of the most fundamental concepts and principles common to every other branch of philosophy, ontology is the most basic scientific discipline which “provides principles for all the other parts”.¹⁵⁶

Wolff’s system of ontology is laid out in the first volume of his Latin Metaphysics, the *Philosophia Prima sive Ontologia*, though a similar, albeit far less elaborate presentation also appears in Book 1 of his *Deutsche Metaphysik*. Wolff identifies the Principle of Non-Contradiction (PNC) as the most basic principle of human knowledge, and the concept of a possible being (which is defined in terms of the PNC as anything that does not contain a contradiction), as the most basic concept of thought. From this starting point, Wolff then shows how one can obtain other, less basic concepts and principles, by deriving them from the PNC and the concept of possibility through logical division. From the PNC, Wolff derives the Principle of Sufficient Reason, Principle of Identity and the Law of Excluded Middle,¹⁵⁷ along with the concepts that are involved in the formulation of these principles, such as the concepts of determination, ground, identity, etc., all of which are defined in terms of the concept of possibility, together with certain attendant notions like negation. Once these concepts and principles have been obtained, they are then employed in the derivation of further concepts: the concept of similarity is defined in terms of identity and determination, viz., two things are similar when they share a certain number of identical determinations in common with one another; the concept of difference is defined in terms of identity and negation; similarly, the concept of essence is defined in terms of possibility, ground and determination, viz., the essence of a thing is

¹⁵³ PD 3.73

¹⁵⁴ DL 1.14; cf. PD 3.73

¹⁵⁵ PD 3.73

¹⁵⁶ PD 3.87. Although logic is the place to start in order to *learn* proper philosophical method, even logic borrows many of its principles and concepts from ontology (PD. 3.88-89), and ontology is thus still first in the order of demonstration, since the concepts and principles of logic are proven in ontology (PD. 3.91).

¹⁵⁷ *Ontologia*, §52-55.

the determination which grounds all its other determinations. Starting, then, from the most basic principles and general concepts of thought, Wolff demonstrates how every other principle and concept employed in the sciences are obtained by defining them in terms of those which are fundamental. The resulting system is a hierarchical ordering of concepts, where the most fundamental concepts and principles exist at the top of the hierarchy, while every other concept is subordinated to them lower down on the hierarchy, depending on which concepts are involved in their definition.

These remarks might lead one to suppose that Wolff's methodology is essentially top-down: starting with an enumeration of the most basic and general concepts of being, Wolff proceeds to show how other, less fundamental concepts can be obtained by defining them in terms of those that are basic.¹⁵⁸ However, this should not lead one to underestimate the important role that sensory experience plays for Wolff. Throughout his works, Wolff consistently maintains that all concepts, including those of ontology, are formed by first observing sensible particulars and then abstracting their intelligible content: "In the abstract disciplines, such as first philosophy, the fundamental notions must be derived from experience".¹⁵⁹ For Wolff the concepts of ontology are acquired in the same way as any other general concept, namely, by abstracting them from the ideas originally given by the senses. Throughout his textbooks on metaphysics, Wolff explains how the mind acquires the pure concepts of metaphysics by appealing to the same acts of reflection, comparison and abstraction which are responsible for generating any general concept.¹⁶⁰ General concepts are formed when the mind identifies the features which a number of particular things share in common and then abstracts away those which are different, and the mind is able to form ever more general concepts by abstracting more and more of the determinations from the sensible particulars originally represented through the senses. The most general concepts of all are obtained, in turn, after the mind has abstracted a sufficiently large number of determinations from the objects perceived by sense. Thus, in the same way that the mind first forms a general concept of man by comparing different men, focusing on what they share in common, and then abstracting what is different, it can then go on to form more general concepts, like the concept animal or living being, by comparing men to other animals, and animals to other animate creatures, all the while abstracting ever more determinations as it forms ever more general concepts. The most general concepts of ontology are formed in the same way: the concept of a possible being, for example, is formed by determining what all possible beings share in common with one another, and then abstracting away what is different by omitting all the determinations from possible things except their possibility—and since

¹⁵⁸ This "top-down" approach is one of the defining features which is common to all of Wolff's philosophical works, as well as those of his followers. For further discussion, see R. Lanier Anderson, *The Poverty of Conceptual Truth*, pp. 75-134. A similar approach to ontology can also be found in Leibniz. For discussion see Ernst Rutherford, *Leibniz and the Rational Order of Nature* (Cambridge: Cambridge University Press, 1995), Ch. 3-5.

¹⁵⁹ PD. 1.12. Cf. DL, pp. 123-125, 136-141.

¹⁶⁰ One illustration of this is Wolff's account of the concepts of time and space, which we will discuss in detail in Ch. 3.2 below.

sensible particulars are possible beings, they are included among the comparison class from which this intelligible content is originally abstracted. The mind forms the concept of possibility by comparing possible beings, both sensible and non-sensible, noting what they share in common, and then abstracting away whatever is different, so that the mark of possibility is all that remains. The concepts of ontology are thus acquired in the same way as any other concept, the only difference is that the former require a great deal more abstraction than what is needed to obtain the latter; but even so, the difference here only pertains to the *amount* of abstraction involved in acquiring them, which is a difference in degree rather than kind.

At this point it is useful to return to the distinction we introduced earlier between two alternative methods of inquiry: the analytic method and the synthetic method. The method of analysis always begins with the truth of some particular proposition and then reasons backwards in order to discover the more general or fundamental principles which underlie that particular truth. In contrast, the synthetic method proceeds in the opposite direction, taking as its starting point some general principle and then inferring the particular consequences which are entailed by it. Whereas synthesis proceeds from general principles to particular truths, analysis proceeds from particular truths to those that are general. In the *Prize Essay* of 1764, Kant criticized Wolff and his followers for always proceeding according to the synthetic rather than the analytic method. Although this distinction was originally used to refer to two alternative methods of investigation, in the *Prize Essay* Kant extended the meaning of this methodological distinction by applying it to concepts. Generally speaking, a concept can be regarded as a kind of whole made up of parts, where these parts are the other concepts, or marks, which determine its content and are contained in that concept as parts to a whole. According to Kant, the definition of a concept may be acquired in one of two ways, either synthetically “by the *arbitrary combination* of concepts”, or analytically, “by *separating out* that cognition which has been rendered distinct by means of analysis” [Ak 2:276]. As with the analytic method of proof, which begins with observations of particular things and then proceeds to discover the more basic principles which underlie them, a concept acquired through analysis always begins with some previously given cognition, which is regarded as a kind of whole, and then proceeds to break that concept down through acts of comparison, reflection and abstraction so as to discover each of the more basic components contained in that concept. In contrast, the synthetic method of concept acquisition goes in the other direction, taking as its starting point certain concepts which are regarded as basic and then combining those concepts together to form a new concept: the definition of a concept is obtained synthetically when it is produced by combining more basic marks together to form a new concept. Thus, one can define the concept trapezoid through synthesis, by arbitrarily combining the concepts of four-sidedness, plane figure, etc.; or, one can discover the definition of this concept through the analytic method, by starting with the cognition of some particular trapezoid, and then analyzing it so as to determine which marks are essentially contained in that figure. The definition of a concept can thus be obtained either analytically by starting with some concept and then distinguishing it into

its various parts, or synthetically by starting with some collection of marks and then combining them to form a new whole. Note, however, that since analysis and synthesis are dual procedures—each method is the reverse of the other—in principle the results obtained through either of these methods should always be reciprocal; that is, since it is always one and the same concept that is being defined, the definition of a concept obtained by analysis should always be identical to the definition given by synthesis: the difference consists in the way in which that definition was acquired.

Kant's main criticism of the Wolffians in the *Prize Essay* is that they always proceed synthetically. But although a cursory overview of Wolff's writings may appear to justify this criticism, this objection is actually misleading, for it simply isn't the case that Wolff never employs the analytic method to define a concept. The definitions which Wolff offers for a variety of concepts are not obtained solely through the method of synthesis. Indeed, a closer look at Wolff's philosophical works reveals that he employs both of these alternative methods—even if, at times, only implicitly—albeit for different purposes. Generally speaking, throughout his philosophical works Wolff's standard procedure is to begin with a preliminary exposition as to how the mind initially forms a concept through analysis of the concepts given by sense; the synthetic method is then employed to explain how that concept can be derived synthetically from those which are more basic. Wolff thus employs the analytic method to explain how the mind first forms a concept by deriving them through analysis of the contents given by sense. The synthetic method is then employed to demonstrate how these concepts can be derived from the ground up through the logical division of other, more basic concepts.¹⁶¹ Although it is true that Wolff generally proceeds according to the synthetic method by defining concepts from the ground up, this is only because he is presenting these definitions as the products of a completed science. But this does not explain the manner in which these definitions were originally acquired, or, the order of their discovery.¹⁶²

¹⁶¹ For further discussion see Katherine Dunlop, "Definitions and Empirical Justification in Christian Wolff's Theory of Science", *History of Philosophy & Logical Analysis* 21 (1): 149-176 (2018) for an account of the role experience plays in Wolff's philosophical methodology.

¹⁶² Indeed, Kant's main criticism is that Wolff's definitions are given *prematurely*—they are inadequate because the acts of analysis required to discover them have not been carried out to a sufficient extent, and so the definitions given through synthesis are, in the best cases, merely lucky guesses. In the *Prize Essay*, Kant criticizes Wolff's methodology by arguing that it rests on a false analogy between the methods of mathematics and philosophy, an analogy which he claims has had a pernicious effect on the development of philosophy [Ak 2:278-279, Ak 2:281, Ak 2:287-89]. According to Kant, the difference between mathematics and philosophy is that the former always arrives at its definitions synthetically, whereas all definitions in philosophy can only be obtained through analysis since "the concept of a thing is always given, albeit confusedly or in an insufficiently determinate fashion" [Ak 2:277]. Unlike mathematics, where the concepts are given by being stipulatively defined, the concepts of philosophy are not created arbitrarily through stipulative definitions, they are given to us from without, and that means the structure of these concepts cannot be determined at will—they must be discovered by means of a pain-staking analysis. In opposition to Wolff and his followers, Kant claims that the "business of metaphysics is actually the analysis of confused cognitions" [Ak 2:289], since all philosophical concepts must be subjected to a thorough-going analysis before their definitions can be discovered. See esp. Ak 2:289 & 277. Interestingly enough, Kant does not rule out the possibility that metaphysics may *eventually* be able to proceed synthetically; he only claims that it is not *yet* in a position to do so since the concepts of philosophy are still too obscure, and will

Thus, for Wolff the way to develop a proper system of ontology is to begin by first analyzing the objects perceived by the senses so as to discover, step by step, the most basic, fundamental concepts which they all share in common with one another. By reflecting on the objects perceived through the senses, comparing their determinations, identifying those which they all share in common, and then abstracting away those that are different, the mind gradually ascends to ever more general, ever more fundamental concepts, until it ultimately comes to discover the most fundamental categories of being. After the mind has acquired these concepts through the analysis of the objects perceived through the senses, the next step is to then present the results of this investigation by systematically organizing these concepts according to their generality, and demonstrating how each concept in the system can be derived from those that are most general by defining them through logical division. The result is a system of ontology which is organized as a deductive system, in which every concept is rigorously defined in terms of others which are more basic, and where every proposition admitted into the system is ultimately derivable from basic principles by means of deductively valid inferences.

Before we conclude, a few preliminary remarks about Wolff's account of the nature of the intellect, as well as the relation between the various other faculties of cognition, are in order. We noted above that for Wolff, every concept is originally acquired through sensory experience. It is important, however, to understand just what Wolff means by this. Although every concept the mind has was originally acquired by *first* perceiving particular objects through the senses, the role of sensory experience is just to provide the mind with the basic materials or contents of thought which are then subjected to analysis by the understanding in order to form distinct concepts.¹⁶³ Recall that for Wolff the concepts that are formed when the mind first begins having sensory experiences are all obscure; they are obscure since objects possess a number of characteristics which are not yet distinguished from one another when the mind first represents something through the senses. For Wolff, the intellect is the power of the mind responsible for producing distinct concepts.¹⁶⁴ The operations which are characteristic of the intellect are the very same as those responsible for making a concept distinct: these operations include carefully observing the things presented by the senses to discern their various features, comparing several things together to determine whether they are similar or different, and then either distinguishing one thing from another when the mind notices that they have different features, or comparing several instances of the same kind of thing together to

remain so, until they have been thoroughly investigated according to the method of analysis. According to Kant, philosophy will only be able to proceed according to the synthetic method only after these concepts have been thoroughly examined and defined through analysis.

Metaphysics has a long way to go yet before it can proceed synthetically. It will only be when analysis has helped us towards concepts which are understood distinctly and in detail that it will be possible for synthesis to subsume compound cognitions under the simplest cognition, as happens in mathematics. [Ak 2:290]

¹⁶³ In DM, §846, Wolff claims that all the mind's cognitions, including those that are universal, always begin with sensation, which is responsible for providing the mind with all the materials of our thought.

¹⁶⁴ Wolff, *Psychologia Empirica*, §275 defines the intellect as the faculty for distinct representation. Cf. DM §277.

see in what respects those particulars agree.¹⁶⁵ It is only after the concepts given by sense have been analyzed through the operations which are characteristic of the intellect that the various features of a thing are identified and distinguished, and the mind's concepts of those things become distinct. Thus, although sensory experience is what provides the mind with the basic materials of thought, it is ultimately the task of the intellect to form distinct concepts from the materials given by sense. And the characteristic functions of the intellect consist in acts of reflection, comparison, differentiation, and abstraction.

Indeed, for Wolff the concepts given by sense are ultimately *reducible* to concepts of the intellect: the faculties of sense and intellect are not different in kind, but merely in degree. For Wolff, confusion is the characteristic mark of every sensory cognition, whereas distinctness is the mark of an intellectual cognition. But concepts can be more or less distinct, and how distinct a concept is depends, in turn, on how *many* of the various characteristics of a thing have been identified and distinguished from one another: the more features there are contained in a thing which the mind does not distinguish, the more confusion there is in the mind's concept of that thing. And since for Wolff the difference between intellectual and sensory cognition is based on the *amount* of confusion or distinctness in the concepts the mind has of the things it represents, the difference between the faculties of sense and intellect must be one of degree. Although the concepts derived from the senses are all originally obscure, they gradually become more and more distinct through the intellect, and, in this way, sensory representations are all gradually reduced, step by step, to distinct concepts of the intellect by means of analysis. And thus, for Wolff, all sensory cognitions are in principle reducible to cognitions of the intellect.¹⁶⁶

It is worth noting that there is another sense in which sensory cognitions come to be reduced to intellectual cognitions through the analysis of concepts. Analysis not only involves discerning and then *distinguishing* the various features of a thing, it also involves comparing things with one another and identifying their *similarities*. Consequently, as a result of analysis, the mind's representations of sensible particulars become ever more general in nature, for when sensory representations are analyzed into their constituent marks, the mind not only distinguishes each of the marks which belong to a given thing, it also discovers the marks which different things share in common, and abstracts these marks to form a general concept. In this way, the objects originally perceived through the senses come to be represented through general, discursive concepts; and, the more thorough-going the analysis, the more the mind comes to represent sensible objects through general concepts. As the representations that originally belong to the faculty of sense are gradually reduced, step by step, to general concepts of the understanding,

¹⁶⁵ DL 1.26-27; DM §272-275.

¹⁶⁶ See Christian Wolff, *Philosophia Rationalis sive Logicae*, §77-89, DM, §212-13 & §277-86 and Alexander Baumgarten, *Metaphysica*, (London: Bloomsbury, 2014), §510-31. Wolff, DM, §282 claims that the understanding is pure when the mind's idea of a thing is totally distinct; since confusion comes from the senses, and distinctness comes from the understanding, once the mind cognizes something without any confusion, it is cognized through the understanding alone. As we will see in further detail below, although Wolff allows that it is possible, in principle, to cognize the objects of sense through the understanding alone, Wolff denies that this is possible for finite intellects like our own. See DM §283-285 and p. 49n113 below.

sensory phenomena come to be identified with concepts as analysis nears its completion. For Wolff, the features of a representation which are peculiar to sense, like singularity, confusion, etc., are thus gradually eliminated and replaced with those that belong to intellectual cognitions, like generality and distinctness.¹⁶⁷

This somewhat cursory overview of Wolff's philosophical methodology is far from complete, but it will suffice for our present purposes since it provides us with the basic framework necessary for understanding a number of the alternative proposals which Kant puts forth in the *Inaugural Dissertation*. We will return to Wolff at various points in the sections that follow to elaborate further on his theory of the intellect—and specifically his account as to how the mind acquires the concepts of ontology—but since these additional remarks are best understood in the context of certain criticisms which Kant directs against Wolff and his followers, it will be best to next discuss Kant's account of the intellect in ID. As we have already noted, Kant's main goal in the *Dissertation* is to provide a secure method for metaphysics, and this new method turns on his distinction between the faculties of sense and intellect. As we will see momentarily, Kant's distinction between these two faculties is quite different from Wolff's, and the main difference turns on Kant's novel conception of the intellect. In the *Dissertation*, Kant introduces a distinction between what he calls the logical use of the intellect and the real use of the intellect. For Kant, Wolff's account of the intellect as the faculty responsible for forming distinct concepts through acts of reflection, comparison, and abstraction is ultimately inadequate. It is inadequate since these acts are nothing more than functions of the intellect in its logical use; but for Kant, there is also a certain power the mind has to generate concepts through its own inner activity, and this activity is distinct from the kinds of operations which Wolff attributes to the intellect. The goal of the next section is to discuss this distinction between the two forms of the intellect. We will then return to Wolff in section §2.3 and apply the results of our discussion in §2.2 to explain why Kant found Wolff's account of the nature of the intellect to be inadequate.

Section §2.2: Kant's Distinction Between the Real & Logical Use of the Intellect

As with his account of sensory cognition, Kant's discussion of the intellect in ID is extremely terse, even cryptic. The basic theory is outlined in §5-§7 of Sec. 2. At bottom, the intellect is the faculty of the mind which enables it to form general concepts; but one of the main points which Kant is keen to emphasize throughout his discussion is that the general concepts the mind has are of two very different sorts. Kant draws a distinction between what he calls the real use of the intellect and the logical use. This distinction is based, in part, on the different ways in which general concepts are produced by the mind. Through the logical use of the understanding, general concepts are formed when representations are “merely subordinated to each other, the lower, namely to the higher (common characteristic marks), and compared with one another in accordance with the

¹⁶⁷ See Wolff, DM, §286, §832-33, §851 and Baumgarten, *Metaphysica*, §561 & §624-37. Cf. Wolff, *Theologia Naturalis* (Frankfurt, 1736-7, 2 vols.), Vol. 1, §202-204 & §258-263, where he explains the distinction between the sensible, intelligible, and rational world. We will return to Wolff's account of the distinction between the sensible and intelligible world in Ch. 5.

principle of contradiction” [Ak 2:393]; in contrast, through the real use of the intellect “the concepts themselves, whether of things or relations, *are given*” [ibid]. Since much of what Kant says about the intellect in ID revolves around this distinction, our first task will be to outline the nature and characteristic functions of each of these forms of the intellect.

The operations which are characteristic of the logical use of the understanding are acts of reflection, comparison and abstraction. Taken together, these operations are what enable the mind to form a representation of what is common to many individuals: through reflection, the mind first observes the things it represents to discern their various features; then, after identifying each of the features that belong to a thing, the mind can compare several things together to determine whether they are similar or different; and finally, when the mind discovers that there is some feature shared in common by several distinct things, it forms a general concept of that feature by focusing on what those things share in common with one another while abstracting away all the other features by which they differ.¹⁶⁸ Kant stresses that although these operations can be performed on any of the mind’s concepts, regardless as to whether they are empirical or pure, the mind cannot even begin to carry out these acts of analysis—to discern the features of a thing, compare other distinct individuals, etc.—unless a representation is first given to the mind in some way or other.¹⁶⁹ Some representations are given by sensory experience. Although the objects represented through the senses are all concrete particulars, they share certain features in common with one another and the mind is able to form general concepts of those features through the logical use of the understanding. Thus, through sensory cognition the mind represents particular sensible objects such as this piece of paper, the snow on the ground, the chalk in my hand, etc.; after discerning the various features that belong to each of these objects, and comparing the features that belong to one with the features that belong to the others, the mind notices that these objects resemble one another in certain respects, namely, in terms of their color. The mind forms a general concept of this feature by focusing solely on what those objects share in common with one another, while ignoring or eliminating in thought every other feature which is peculiar to any one of those individuals. Thus, the mind forms a concept of white by focusing on what is common to snow, chalk and paper, and then abstracting away the coldness of the snow,

¹⁶⁸ Kant notes that the acts of subordination which order concepts according to their degrees of generality can be applied to any object of cognition, where “object” may be taken broadly to include concepts, judgments or inferences. Thus, one can subordinate particular judgements, like ‘this fire is hot’, to empirical generalizations like ‘all fire is hot’; likewise, the specific inference from (1) all men are animals, (2) all animals are mortal, to (3) all men are mortal, can be subordinated to the general inference pattern (1) All As are Bs, (2) All Bs are Cs, (3) All As are Cs.

¹⁶⁹ As Kant notes in *Blomberg Logic*, §259, Ak 24:255

One cannot make any money by stealing it from someone; and in the same way one cannot make any concepts by abstraction. Through abstraction our representations are only made universal...If we have no representations of things, then no abstraction will be able to make concepts for us. In logical abstraction we compare many concepts with one another, we see what these contain in common, or wherein they agree, and through this our representations become concepts.

Again,

We do not attain any representations through abstraction, rather, representations must be given prior to abstraction, and through it they only become clear. [ibid, §254, Ak 24:253]

the hardness of the chalk, the shape and size of the paper, and every other feature those objects have which make them differ from one another, until the only thing left which the mind represents is the color that belongs to each. Again, the mind forms a general concept of man by first perceiving a number of particular men through the senses, such as Peter, James and John; after observing the features that belong to each of these men, the mind then compares one man with another with respect to their various features, and, noticing that there are certain features they all share in common, the mind then abstracts away those features which are peculiar to these individuals, or any other particular, to form the concept of what each of these men share in common with one another.¹⁷⁰ Once the mind has formed these general concepts, it can then proceed to acquire other, more general concepts, through additional acts of abstraction. Concepts that are more general are formed by leaving out the determinations contained in a less general concept, and the more determinations that are left out, the more general is the concept thereby acquired. Thus, after forming the concept man the mind can form the more general concept of animal by leaving out those marks that are unique to men (i.e., rationality), while

¹⁷⁰ It is important to clarify that when one sensible quality is conceived of in abstraction of the others, this does not mean that the mind can, for example, form an image of the color of the snow, chalk and milk, without also imagining that color having some size, shape, or any other sensible qualities. Likewise, when the mind forms a concept of man it does not form an image of what is common to all men in abstraction of those features that are unique to any individual man. As Berkeley noted, this would require that the mind form an image of a thing that has color, since every man has some color, but no color in particular, since there is no particular color all men share in common; or again, an image of a thing with weight and size, since all men have some magnitude, but which is neither fat nor skinny, neither tall nor short, but instead something abstracted from all these. See George Berkeley, *Principles of Human Knowledge*, Introduction, §7-21. In order to respond to this objection it is necessary to explain a bit further the exact sense in which the mind is supposed to form a general concept through abstraction. According to Kant, the mind forms a general concept through an act of *selective attention* (see Ak 2:190 where Kant describes abstraction as “negative attention,” or, as an act of the mind which consists in cancelling some part of a representation so as to focus on others). In order to understand what is involved in this act of selective attention, it is necessary to distinguish between those features that an object has *simpliciter* and those features that the mind is *aware of* when representing that thing. Every object represented through the senses is a determinate particular; but the concepts used to represent those things are indeterminate, in the sense that, when the mind represents a thing through a concept, it represents that object as only having certain features while ignoring others. In particular, when the mind represents an object through a general concept, the object is represented as being indeterminate with respect to those features that are not included in the concept. Thus, when the mind represents a particular object *as* triangular, it only focuses on those features which that object shares in common with all other triangles, and disregards those features which are peculiar to that object. The object, as represented through that concept, is indeterminate with respect to the length of its sides; the mind represents it as being three-sided, but it does not represent that object as having sides of any determinate length. But although the sides of that object are not represented as having a determinate length, the object itself is not indeterminate in this respect since nothing could exist which was three-sided but whose sides had no determinate length. Once we distinguish between those properties which belong to a thing *as* represented, or the properties it is represented as having, and those properties it has *simpliciter*, it is no longer necessary to assume, as Berkeley does, that representing a sensible particular through a concept requires that the mind form an image of a thing with indeterminate properties; the mind’s act of abstraction, understood as selective attention, does not require that the mind form an image of that feature in abstraction of the others; it only requires that the mind is capable of paying selective attention to some qualities without also paying attention to others, or, that when the mind represents some sensible particular it is capable of focusing on certain features while disregarding the others. See Kant, *Jäsche Logic*, §6, Ak 9:94-95. This way of responding to Berkeley is originally due to J.L. Mackie, *Problems from Locke*, pp. 107-125; on my reading, Kant’s theory of abstraction is the same as Locke’s, at least as interpreted by Mackie.

retaining those that are common to all animals (i.e., sentience, animate); and again, one can form the more general concept of living being by comparing men and animals to other living beings, like plants and vegetables, to determine what they share in common with one another (animate) while omitting those marks that are different (sentience). Through these additional acts of abstraction the mind is able to form ever more general concepts, ascending from those that are more specific to others which are more general. The key point, however, is that at each level of generality, a new concept is always acquired through the same acts of reflection, comparison and abstraction which were originally employed in forming concepts at the start of this process.¹⁷¹

To this point, Kant's account of the intellect is effectively the same as Wolff's, but a crucial difference begins to emerge when Kant proceeds to discuss the concepts of metaphysics. Through the logical use of the understanding the mind is able to form ever more general concepts by abstracting more and more of the determinations present in the objects originally given by sense. The most general concepts of all are those which belong to ontology, which is the study of the most fundamental concepts of reality, or of those concepts that are common to every possible being. As we have already seen, Wolff maintains that the mind acquires these concepts through the same acts of reflection, comparison and abstraction that are used when forming any general concept; in a way this is not surprising, for if these concepts correspond to the most general determinations of all beings, then presumably they are acquired by simply abstracting all of the determinations which belong to a particular thing except those which it shares in common with all other beings—the only thing that is unique to these concepts is the *amount* of abstraction required for obtaining them. But it is precisely at this point that Kant expresses his first major disagreement with Wolff: although Kant acknowledges that the concepts studied in ontology can be analyzed through the logical use of the understanding, they are not themselves *generated* through acts of reflection, comparison, and abstraction—specifically, Kant denies that these concepts are originally acquired by abstraction from the contents presented in sensory experience.¹⁷² These concepts are instead “given by the very nature of the understanding: they contain no form of sensitive cognition and they have been abstracted from no use of the senses” [Ak 2:394]; the examples Kant gives include the concepts of “possibility, existence, necessity, substance, cause etc., together with their opposites or correlates” [Ak 2:395].¹⁷³ Each of these concepts are supposed to have been generated by the mind itself through the real use of the intellect, and it is only *after* they have been generated by the mind that they can be subjected to the kinds of analyzes performed by the logical use of the understanding, i.e.,

¹⁷¹ The logical use of the intellect is described in detail in *Jäsche Logic*, §6, Ak 9:94-95 (Cf. *ibid*, §9-15) where Kant explains these acts of comparison, reflection and abstraction, and refers to them as logical acts of the understanding which are responsible for generating the form of a concept.

¹⁷² One might be tempted to object here that Kant does not deny that the pure concepts of the intellect are generated through the logical act of abstraction, but only that they are not abstracted from *anything given by the outer senses*. We will return to this objection below.

¹⁷³ Similar examples are given throughout the Nachlass. See Ak 17:349, Refl. 3927 (1769? 1771-2? M V. EII) and Ak 17:352, Refl. 3930 (1769. M 432) for similar lists. Other examples include the concepts of number, part, whole, composition, unity and simples.

broken down into their constituent marks, ordered in terms of their generality, etc.¹⁷⁴ Thus, while the logical use of the understanding consists in analyzing the concepts given to the mind to form others by way of abstraction, the real use of the understanding consists in producing concepts through the mind's own inner activity; and, whereas the concepts generated through the logical use of the understanding always presuppose that some concept is first given to the mind for analysis, the real use of the understanding is itself responsible for generating certain concepts.¹⁷⁵

Kant elaborates on the difference between the real and logical use of the intellect by drawing a distinction between two different senses of the term 'abstract', as it is used in the expressions '*to abstract from some things*' and '*to abstract something*':

The former expression indicates that in a certain concept we should not attend to the other things which are connected with it in some way or other, while the latter expression indicates that it would be given only concretely, and only in such a way that it is separated from the things which are joined to it. Hence, a concept of the understanding *abstracts* from everything sensitive, but it is *not abstracted* from what is sensitive...For this reason, it is more advisable to call concepts of the understanding '*pure ideas*', and concepts which are only given empirically '*abstract concepts*'. [Ak 2:394]

The point of contrast between these two senses of abstraction has to do with whether or not the content that is abstracted from a given whole is a constituent part of the thing it is abstracted from. As indicated by the remarks made above, *to abstract something* is to form an idea through a process of selective attention: the mind abstracts a concept of

¹⁷⁴ As Kant notes, the logical use of the understanding is "common to all the sciences" [Ak 2:393], for every concept, regardless as to its origin, can always be broken down into its various marks and thus subordinated to other concepts which are more general; in contrast, the real use of the understanding is unique to those disciplines which study first principles and the concepts common to all possible beings [Ak 2:395]. The logical use of the understanding is responsible for ordering concepts "no matter whence they were given" i.e., regardless as to whether they were originally generated through the real intellect or were instead given by sense. It is for this reason that the logical use of the understanding is common to all the sciences, for regardless as to whether the content of a concept was originally given by the mind itself, or instead by sensory experience, that concept can always be analyzed and subordinated to other concepts. Thus, once the mind generates the concepts of substance, possibility, it can then analyze these concepts to determine their relations to one another, e.g., that the concept of possibility is conceptually prior to the concept of substance, since every substance is a kind of possible being.

¹⁷⁵ This distinction between the real and logical use of the understanding appears in a number of passages from the Nachlass which are contemporaneous with ID. Thus, in Ak 2:287, Refl. 651 (1769-1770)

Ein Begriff ist ein Verstandesbegriff bloß dadurch, daß er allgemein ist, und das Verhältnis der Verstandesbegriffe ist logisch. Ein Begriff ist ein Vernunftbegriff, in so fern er sich auf gar keiner Sinnlichkeit gründet, und das Verhältnis derselben, was nicht logisch ist, ist real.

Again, in Ak 17:367-368, Refl. 3954 (1769)

Alle Begriffe werden allgemein durch die Abstraction, aber sie entspringen nicht alle daraus; non subtrahendo a sensibus oriuntur, sed abstrahendo.

Cf. Ak 17:349, Refl. 3927 (1769? 1771-2? M V. EII); Ak 17:352, Refl. 3930 (1769. M 432); Ak 17:364, Refl. 3955 (1769. XXXXVII); Ak 17:364-365, Refl. 3957 (1769. M XXXXVII-XXXXVIII); Ak 17:368, Refl. 3963-3965 (1769. M L.); Ak 17:371-372, Refl. 3974 (1769. M LIII.); Ak 17:377-378, Refl. 3988 (1769 M.2); Ak 10:130-131. The most important mark of a pure concept of the intellect is that it is not given by sensation. This is repeated constantly through ID, as well as in the passages just cited.

white by focusing exclusively upon the particular color of some white thing, such as this piece of snow, and then separating this particular quality in thought so as to consider it in isolation of the other qualities of the snow that appear alongside it. In this case, the mind abstracts a sensible quality which is present or contained within a sensible particular, so that the resulting idea is also sensory. On the other hand, the former sense of abstraction is what enables the mind to think pure concepts of the intellect, which are supposed to be entirely devoid of sensory content and are not presented in sensory intuition as constituent features of sensible particulars; *to abstract from some things*, in this sense, is to think a pure concept of the intellect as it is in itself and independently of its relation to sensible particulars. It is in this sense that “a concept of the understanding *abstracts* from everything sensitive, but is *not abstracted* from what is sensitive” [ibid].¹⁷⁶ The pure concepts of the understanding are those that do not contain anything sensory as part of their content, for these concepts are not contained or presented in anything given through the senses: to abstract a concept of the understanding from everything sensory is to think that concept independently of any relation to sensible particulars, not to separate the content represented by that concept from the other qualities of a sensible particular. This is brought out even further in §8, where Kant writes that “Such concepts never enter into any sensory representations *as parts*, and thus they could not be abstracted from such a representation in any way at all” [Ak 2:395; my italics]. It is precisely because the pure concepts of the understanding are never constituent features of any sensory representations, or contained in them as parts to a whole, that they cannot be acquired by abstraction from what is given by sensory experience.

What we have learned thus far is that the real and logical use of the understanding differ in terms of their characteristic operations, or, that the general concepts that belong to the intellect are formed in two different ways. The characteristic operations of the logical use of the intellect are reflection, comparison and abstraction; general concepts are formed through the logical use of the intellect when these acts are carried out upon concepts that have first been given to the mind in some way or other. The characteristic operation of the real use of the intellect is generating certain concepts which are devoid of sensory content. The reason why Kant claims that there is a real use to the intellect is precisely because we find that there are certain concepts in our possession which could not be obtained through the operations characteristic of the understanding in its logical use; they are not obtained by way of abstraction, but are instead generated by the mind in some other way. But Kant’s assertion that the concepts of the real intellect are not contained in sensible objects as parts or constituent features requires further elaboration. Kant says effectively nothing in ID to justify this claim. Naturally, if the pure concepts of the understanding are not constituent features of sensible particulars, then they cannot be acquired by abstracting or separating away the features presented to the mind through sensory intuition. But this does not yet explain why we should think that the concepts of substance, possibility, or any of the other examples Kant cites are not, after all, contained in the things we sense. Indeed, all that Kant says in the passage just cited is that the pure

¹⁷⁶ Cf. *Jäsche Logic*, §6, Ak 9:95.

concepts of the intellect can be conceived of independently of any relation to a sensible particular; but that doesn't show that those concepts were not originally acquired by abstraction from sensory experience, or that their content is "pure", i.e., devoid of sensory content. Even if they can be conceived of independently of their relation to any sensible objects, that doesn't show that these concepts were not *originally* contained in them—any more, that is, than the fact that one can conceive of the color white independently of the snow shows that white is not contained in the snow as one of its constituent features.

Why does Kant think this? Indeed, what does it even mean to say that these concepts are not contained in sensible objects as parts or constituent features? Answering this question is all the more important since the other claims Kant makes about the concepts of the real intellect appear to follow from it: thus, the reason why these concepts cannot be obtained by abstraction is *because* they are not contained, or part of the content, of any of the concepts given to the mind by sense, and it is precisely because these concepts cannot be given through abstraction that there must be some other power in the intellect which is responsible for producing them—or, in other words, that the intellect does not merely have a logical use, but also a real use. In order, then, to understand Kant's account of the real use of the intellect it is essential to get clear on why these concepts are not contained in the objects of sense.

The best way to go about answering this question is to begin by reflecting on some of Kant's examples of pure concepts of the intellect. It should be noted that Kant is not alone in thinking that the concepts he cites are devoid of sensory content; indeed, many of the arguments which purport to show that the concepts of substance, or cause (etc.), are non-sensory, may be found in, or at least inferred, from Kant's predecessors. Presumably, then, at least part of the reason why Kant does not bother to explicitly argue for this himself is because he must have regarded it as something that could be inferred from certain conclusions established by his predecessors. For example, the concept of substance is traditionally used to refer to that which underlies or supports the properties of a concrete particular, it is the thing that *has* the properties and is something distinct from those properties. The concrete particulars represented through the senses, such as this man or that horse, are thus thought to consist of two distinct components: the first is the set of properties which distinguish one concrete particular from another, while the second is the underlying substratum which those properties inhere in. In addition, substances were also traditionally characterized as the things which persist through time when concrete particulars undergo changes in their properties. Both of these characterizations were often used to show that the concept of substance cannot be acquired by abstraction from what is given by sensation. The first argument is that, when the mind represents a concrete particular through the senses, the only ideas given by sensation are of the sensible qualities that belong to that object; but since the underlying substratum is that which those qualities inhere in, and is something *distinct* from those qualities, it follows that the concept of that substance cannot be given by sensation.¹⁷⁷ The

¹⁷⁷ For a modern version of this argument see Michael Loux, *Substance And Attribute*, pp. 111-115. It should be noted that this argument does not obviously depend on whether substances are conceived of as bare

second traditional argument used to show that the concept of substance is not acquired from sensory experience is based on the argument from change. This argument is perhaps best illustrated by Descartes' reflections on the piece of wax in the Second Meditation. When a concrete particular undergoes a change, one of its properties is replaced by another; but it nevertheless persists through that change since the substance which underlies those properties remains the same at both times. Thus, at time t_1 , the wax is a sweet, fragrant, white figure with a certain size and shape (etc.); but when we place the wax near an open flame it loses each of these sensible qualities so that, at time t_2 , it is no longer white, fragrant, or sweet (etc.). Since everyone grants that the same piece of wax exists at both times, Descartes infers that the nature of the wax cannot be identified with any of its particular sensible qualities since none of the qualities that belonged to the wax

particulars or whether they should instead be understood as, in David Armstrong's words, thick particulars. As Armstrong puts it, the thin conception of a particular is of "a thing taken in abstraction of all its properties" whereas on the thick conception "a particular is a thing taken along with all its properties", D.M. Armstrong, *Nominalism & Realism: Universals & Scientific Realism*, vol. I (Cambridge University Press, 2009), p. 114. The difference between these two ways of conceiving of substance can be found in the alternative accounts given by Locke and Leibniz. As Locke, *Essay*, II.xxiii.2 puts it

...if any one will examine himself concerning his *Notion of pure Substance in general*, he will find he has no other *Idea* of it at all, but only a supposition of he knows not what support of such qualities which are capable of producing simple *Ideas* in us; which qualities are commonly called accidents. If any one should be asked, what is the subject wherein colour or weight inheres, he would have nothing to say, but the solid extended parts; and if he were demanded, what is it that solidity and extension adhere in, he would not be in a much better case than the Indian before mentioned who, saying that the world was supported by a great elephant, was asked what the elephant rested on; to which his answer was—a great tortoise: but being again pressed to know what gave support to the broad-backed tortoise, replied—something, he knew not what...The idea then we have, to which we give the general name substance, being nothing but the supposed, but unknown, support of those qualities we find existing, which we imagine cannot subsist *sine re substante*, without something to support them, we call that support *Substantia*; which, according to the true import of the word, is, in plain *English*, *standing under* or *upholding*.

If a substance is a bare particular which can only be conceived of by abstracting away all the qualities which belong to it, then it is clear that this concept cannot be acquired from sensory experience, for since a bare particular is property-less, the concept of that thing cannot arise from the ideas of the sensible qualities given by sensation. Admittedly Locke himself did not draw this conclusion: for Locke, the idea of substance is a complex idea derived from experience from ideas given through sensation and reflection. But, as is clear from the criticisms of Stillingfleet, Berkeley and Hume, it is doubtful whether Locke was entitled to this view. In contrast, here are Leibniz's remarks on Locke's theory of substance:

If you distinguish two things in a substance—the attributes or predicates, and their common subject—it is no wonder that you cannot conceive anything special in this subject. That is inevitable, because you have already set aside all the attributes through which details could be conceived. Thus, to require of this 'pure subject in general' anything beyond what is needed for the conception of 'the same thing'—e.g., it is the same thing which understands and wills, which imagines and reason—is to demand the impossible; and it also contravenes the assumption which was made in performing the abstraction and separating the subject from all its qualities or accidents. The same alleged difficulty could be brought against the notion of *being*, and against all that is plainest and most primary...Yet this conception of substance, for all its apparent thinness, is less empty and sterile than it is thought to be. Leibniz, *New Essays*, p. 218.

Leibniz appears to conceive of substances as thick particulars; but even if we conceive of a concrete particular as a substance by thinking of all the distinct qualities perceived through the senses as qualities of one and the *same* thing, these qualities still have to be unified through an act of thought, and this unification seems to require an act of the mind which is distinct from the one involved in merely passively receiving the ideas of the qualities given through sensation.

at t_1 are still present at t_2 , even though we represent that thing as being the same at both times. While the properties of the wax have changed, the underlying substratum has not, and it is precisely because one and the same substance continues to exist at both times that the wax remains the same. From here, Descartes draws the further conclusion that, if we know that the wax persists through this change, then the concept we use when representing that thing cannot be based on anything given by the senses: at time t_1 , our senses detect something white, sweet, fragrant, whereas at time t_2 what we perceive with our senses is something not-white, not-sweet, etc., but nothing that is sweet is also not-sweet, nor is anything white also not white, and so what the senses detect at these different times could not have been the same; and from here, it is supposed to follow that the concept we use when representing that thing as being the same at both times is not anything given by the senses.¹⁷⁸

Likewise, Kant's claim that the concepts of cause and effect cannot be given by abstraction from sensory experience is surely based on the arguments he discovered when reading Hume. A causal relationship obtains when there is a necessary connection between one event and another; that is, if A is the cause of B, then the existence of B is necessarily connected to the existence of A. But this connection is never given through sensory experience; through the senses, the mind only observes a succession of events, but never any *necessary* connection between them, for it is always possible to conceive of a cause existing without its effect, or, alternatively, to conceive of any number of logically possible effects different from the ones that have obtained in the past. Similarly, as Hume also noted, the mind cannot discover what causal powers belong to an object merely by observing its sensible qualities. The mind cannot infer through reason alone, without the aid of any experience, what effects an object will produce by merely inspecting its sensible qualities; if it could, then the mind should be able to infer what kinds of effects an object can produce as soon as it forms a concept of the things it perceives through the senses: but we cannot infer that fire, for example, has the power to burn, or water the power to

¹⁷⁸ Rene Descartes, *Meditations*, AT VII 30-32; CSM 20-21. There are a number of *Reflexionen* from this period which indicate that Kant was aware of both of these considerations. See Ak 17:345-346, Refl. 3921 (1769. M IV.). Cf. Ak 17:438, Refl. 4158 (1769-1770. M.VI) & Ak 17:399, Refl. 4053, (1769-1770). That the concept of substance refers to that which remains permanent in a sensible particular when it undergoes change is noted in a number of other *Reflexionen*:

Der Begriff der substanz hat ausser der idee des subjects noch den Begriff der Beharrlichkeit bei dem, was auf einander folgt, und der Einerleiheit bei dieser Folge, welche man darum Veränderungen eben desselben Dinges nennt, bei sich. Weil aber [so wohl] alle accidentia variabel sein und das substantiale gar nicht bekannt ist, so wird die Beharrlichkeit des substantialis precario angenommen. [Ak 17:399, Refl. 4054 (1770)]

And,

Alle successionen sind Veränderungen von demselben bleibenden subject. Die substanzen fliessen nicht, sondern ihre status; so fodert es die Vernunft, so zeigt es die Erfahrung; woher diese Einstimmung der Erfahrung mit der Vernunft? [Ak 17:399-401, Refl. 4059, (1769)]

Cf. Ak 17:401, Refl. 4060 (1769). In this second passage Kant claims that the persistence of substance is a rational inference, not something which can be confirmed through experience by representing the substance in the concrete. In other words, different sensible qualities are judged to be united in a common subject (i.e., to be qualities of one and the same thing) and this subject is also judged to persist through change; but each of these judgments employ a concept that isn't itself something sensed or sensible.

nourish us, merely by inspecting the sensible qualities of fire and water, since none of these properties *necessarily* entail the existence of the things they are causally connected with.¹⁷⁹ Consequently, when the mind represents a sensible particular as a cause, the content of its representation is not identical to any of the sensible qualities which constitute that thing, and that means the concepts of cause and effect cannot be acquired by abstraction from sensory experience.

It would take us too far afield to go through every one of Kant's examples and explain why each concept that belongs to the real intellect is one that is devoid of sensory content. Nevertheless, there is perhaps a more general argument for this conclusion based on the fact that the concepts generated through the real use of the intellect are those studied in ontology, or, in other words, are the most basic concepts of reality which are common to every possible being. If these concepts are common to every possible being, then not only can they be applied to sensible particulars when the mind thinks of them as possible, or as causes, or as substances (etc.), they can also be applied to immaterial entities which cannot be perceived through the senses, but which are, nevertheless, possible beings, substances, etc. But if these concepts are shared in common by both sensible and non-sensible, immaterial entities, then they must be devoid of any sensory content, for whatever some sensible being shares in common with a non-sensible, immaterial entity (i.e., possible, substance, etc.) cannot be anything sensible—if it were, then non-sensible beings would have some sensible features. The concepts studied in ontology cannot, then, be contained in sensible particulars as constituent parts of those things, since the content of these concepts is non-sensible; and, in that case, it follows that these concepts cannot be acquired by abstracting them from the other features of the objects perceived with the senses.¹⁸⁰

¹⁷⁹ David Hume, *Essays Concerning Human Understanding*, IV, 23-25. Cf. Kant's discussion in *Negative Magnitudes*, Ak 2:201-204, and *Prolegomena*, §5, Ak 4:277-278. Cf. A112.

¹⁸⁰ Cf. Ak 2:321* of *Dreams of a Spirit Seer*. A version of this argument appears in Gottlob Frege, *The Foundations of Arithmetic*, §24, pp. 32-33, who uses it to show that concepts of the natural numbers cannot be acquired from sensory experience by abstraction.

Leibniz rejects the view of the schoolmen that number is not applicable to immaterial things, and calls number a sort of immaterial figure, which results from the union of things of any sorts whatsoever, for example of God, an angel, a man and motion, which together are four. For which reason he holds that number is of supreme universality and belongs to metaphysics...

It would indeed be remarkable if a property abstracted from external things could be transferred without any change of sense to events, to ideas and to concepts. The effect would be just like speaking of fusible events, or blue ideas, or salty concepts or tough judgements.

It does not make sense that what is by nature sensible should occur in what is non-sensible. When we see a blue surface, we have an impression of a unique sort, which corresponds to the word "blue"; this impression we recognize again, when we catch sight of another blue surface. In order to suppose that there is in the same way, when we look at a triangle, something sensible corresponding to the word "three", we should have to commit ourselves to finding that same thing again in three concepts too; so that something non-sensible would have in it something sensible. It may certainly be granted that a sensible impression of a sort does correspond to the word "triangular", but then the word must be taken as a whole. The three in it we do not see directly; rather, we see something upon which we can fasten an intellectual activity of ours leading to a judgement in which the number 3 occurs. How is it after all that we do become acquainted with, let us say, the Number of figures of the syllogism as drawn up by Aristotle? Is it perhaps with our eyes?

The reason, then, why these concepts are not contained in sensible objects is because their *content* is non-sensory.¹⁸¹ When the mind represents a sensible object as a substance, or a cause, the concept it employs when thinking that thing is one that is entirely devoid of any sensory content. It is for precisely this reason that these concepts cannot be acquired by abstraction from anything originally given in sensory experience. Since the intentional content of these concepts is distinct from anything given by the senses, they are not contained in sensible appearances as parts, or constituent features; from this, it follows that the mind could not have acquired these concepts by way of abstraction, for abstraction involves separating out some content which is contained in another as a part to a whole. But since these pure concepts are devoid of sensory content, they are not contained in sensible particulars, and that means the mind could not have acquired these concepts by abstracting them from sensory experience.

But if these concepts are not given directly by sensation, or indirectly through acts of reflection, comparison and abstraction performed upon the objects given through sense, then how is it that the mind came to acquire them? Initially, one might assume that these concepts are simply given to the mind as part of its innate endowment, but Kant appears to rule out this alternative when he denies that there are any innate concepts.

...the concepts met with in metaphysics are not to be sought in the senses but in the very nature of the pure understanding, and that not as *innate* concepts but as

What we see is at most certain symbols for the syllogistic figures, not the figures themselves. How are we to be able to see their Number, if they themselves remain invisible?

One can also find the same kind of argument in many other authors from the early-modern period. For example, in response to the claim that every idea the mind has must originally come from the senses, Arnauld & Nicole, *Port-Royal Logic*, pp. Part 1, Ch. 1, p. 29 respond as follows:

...there is nothing we conceive more distinctly than our thought itself, nor any proposition clearer to us than this: "I think, therefore I am." Now we could not have any certainty regarding this proposition if we did not distinctly conceive of what *being* is, and what *thinking* is. No one needs to ask for an explanation of these terms because they are among those everyone understands so well that trying to explain them only obscures them. If it is undeniable, then, that we have in us the ideas of being and thought, I ask, by what senses did they enter? Are they luminous or colored for entering by sight? Low-pitched or high-pitched, for entering by hearing? Do they have a good or bad odor for entering by smell? A good or bad flavor for entering by taste? Are they cold or hot, hard or soft, for entering by touch? If someone says they are formed from other sensible images, let him tell us from which other sensible images the ideas of being and thought have been formed and how they could have been formed from them, whether by composition, amplification, diminution, or analogy. If there are no reasonable answers to all these questions, it must be admitted that the ideas of being and thought in no way originate in the senses. Instead, the soul has the faculty to form them from itself, although often it is prompted to do so by something striking the senses...."

As Alison Laywine, *Kant's Early Metaphysics and the Origins of the Critical Philosophy* (Ridgeview, 1993), has persuasively argued, the failure to distinguish the conditions of material and immaterial beings is the very problem which led Kant away from his pre-critical metaphysics.

¹⁸¹ In addition to characterizing the intentional content of these concepts as non-sensory, Kant also repeatedly describes them as abstract [Ak 2:387-389, 394, 397]. This is not to say that these concepts refer to abstract objects; presumably all that Kant means by this is that when the mind conceives of a pure concept of the intellect, the intentional content of that representation is something which is best described as abstract. We will return to this point below.

concepts abstracted from the laws inherent in the mind (by attending to its actions on the occasion of experience), and therefore as *acquired* concepts.¹⁸²

The concepts of metaphysics are not innate, they are acquired by the mind by “attending to its actions on the occasion of experience” and then abstracting these concepts from “the laws inherent in the mind.” This of course is quite vague, but unfortunately Kant has little more to say about how the mind forms these concepts in ID. Even worse, however, is that the explanation Kant provides in this passage is potentially misleading, if not wholly inadequate, since it appears to be inconsistent with his claim that the pure concepts of the intellect are not generated through the logical use of the intellect. If these concepts are acquired through abstraction by reflecting on the mind’s activities upon the occasion of experience, then it appears to follow that they are obtained through the logical use of the intellect; although they are not abstracted from anything given by outer sense, they are nevertheless abstracted from some other source, namely, from observing the mind’s cognitive activities. But this is an unacceptable result: the distinction between the real and logical use of the intellect is central to Kant’s account in ID, and the ground for that distinction is based on the observation that there are certain concepts the mind has which it could not have acquired through the operations characteristic of the intellect in its logical use. But if the pure concepts of metaphysics are indeed acquired by abstraction— or, more precisely, by reflecting on the acts of cognition which the mind performs upon the objects of sense and then abstracting the conceptual content involved in those acts— then why shouldn’t we believe that the only operations characteristic of the intellect are reflection, comparison and abstraction, or that the only use of the intellect is logical?

Although Kant’s explanation as to how mind acquires the pure concepts of the intellect appears, at first sight, to undercut his reasons for introducing a real use of the intellect, a closer look reveals that his account of the origins of these concepts is far more subtle and complex. To begin, it is important to recognize that although Kant appears to deny that these concepts are innate, strictly speaking, he is only denying that they are innate in a certain sense. One can begin to shed more light on this issue by starting with the following passage from the Nachlass:

We have two types of concepts: those that can arise in us because of the presence of the thing; or those by means of which the understanding represents the relation of these concepts to the laws of its own thought. To the latter belongs the concept of ground, possibility, existence. Therefore, the principles about the former are objective; those about the latter are subjective. Metaphysics is a science for insight into the relation of human reason to the primary properties of things. All fundamental rational concepts are concepts of form; the empirical ones are *principia* of the matter. The former are exclusively subjective, i.e., abstracted from the laws of our thought. The latter are objective, abstracted from the representation itself by means of which the object is represented. The understanding is applied to the experiences only in accordance with the laws of the

¹⁸² Ak 2:395. Cf. Ak 17:352, Refl. 3930 (1769. M 432).

understanding; but the abstracted idea of the relation of the sensible representation in general, in accordance with the laws of the understanding, makes up the pure rational concept. The understanding proceeds in accordance with a natural law when it thinks one thing and many. This understanding, applied to the sensation of a body, abstracts the idea of a whole not from the body but rather from itself.¹⁸³

The concepts of the understanding are those which enable the mind to represent what is given through affection according to certain kinds of relations. Since these concepts belong to sensible objects by virtue of the way the mind represents them—or, by virtue of the way those objects are related to one another through the laws of our own thought—Kant refers to them as “subjective,” in contrast to those concepts which have been abstracted from what is given by affection, which he calls “objective.” We will return to this distinction between objective and subjective concepts below, but for now the thing to note is that the pure concepts of the intellect all pertain to the way in which something originally given by sense comes to be represented through some act of the mind. As in ID, the concepts of metaphysics are said to be acquired by abstracting them from the laws of our thought, but at the end of the passage Kant notes that when the mind thinks an object of sense through a pure concept it always “proceeds in accordance with a *natural law*” (my emphasis). There is, in other words, a certain cognitive act which the mind performs when it intuits an object given through sense as a whole, or as a ground, or as something possible, etc., and this cognitive act is a natural law of thought. In turn, it is only after the mind begins to reflect on this cognitive activity, and abstracts the content of that act from the particular sensory materials to which it is applied, that it then forms an idea of one of these pure concepts (which are nothing more than “the abstracted idea of the relation of the sensible representation in general”). Now, for our purposes, it is important to carefully distinguish between the cognitive acts which the mind performs when it represents the materials given through sense according to certain relations, and the further act of the mind which it performs when it comes to reflect on these cognitive activities—or, between the acts of cognition and the mind’s *awareness* of those acts. The former appear to correspond to certain innate abilities which are present in the mind from birth—that is, after all, why are they are *natural*. These innate abilities are what enable the mind to perform certain kinds of cognitive acts on the materials given by sense upon the occasion of experience. In contrast, the act of reflecting on these actions is what enables the mind to become aware of the fact that it performs these cognitive acts. The reason it is important to draw this distinction is because the abilities the mind has to cognize the objects of sense do not appear to be learned from experience—these are simply given to the subject as part of its innate endowment. What the mind does learn through experience is just that it performs these cognitive activities: it is only by reflecting on the way it thinks of the objects given by sense that the mind becomes consciously aware of the fact that it has, and employs, certain kinds of concepts which were not originally given by sense.

¹⁸³ Ak 17:377-378, Refl. 3988 (1769 M.2).

Note that we already encountered this distinction in the context of our earlier discussion of whether the concepts of time and space are innate or acquired. In the corollary to §15, Kant denies that the concepts of time and space are innate; he insists, instead, that they must have been acquired, albeit not through abstraction from sensory experience, but instead “from the very action of the mind” [Ak 2:406] which orders its sensations upon the occasion of experience, to which he adds that there is nothing “innate here *except* the law of the mind, according to which it joins together in a fixed manner the sense-impressions made by the presence of an object” [ibid, my italics]. In other words, although the concepts of time and space are not innate in the sense that they exist in the mind as fully formed representations prior to experience, they are nevertheless innate in another sense, namely, as the products of an innate faculty or “law of the mind” [Ak 2:393] which generates spatiotemporal form upon the occasion of experience. Throughout ID, Kant repeatedly refers to a “natural law of the mind” [Ak 2:392], or “fixed laws” of the subject [Ak 2:392-393, 400, 401, 404], as the original source responsible for producing these concepts, and these laws are said to be present in the subject “by virtue of the nature of the human mind” [Ak 2:400]. And yet, although the concepts of time and space issue forth “from the nature of the mind in accordance with a stable law as a scheme” [Ak 2:403], both of these concepts are also supposed to have been acquired by being “abstracted from the laws inherent in the mind” [Ak 2:395]. A similar account also appears to be at least implicit in Kant’s explanation of the origins of the pure concepts of the intellect—Kant does allude to certain “fixed laws” of the subject in Ak 2:389* when discussing the generation of the pure concepts of the intellect, and the distinction also appears to be implicit in the passage cited above, where these concepts are said to be acquired when they are “abstracted from the laws inherent in the mind (by attending to its actions on the occasion of experience)” [Ak 2:395]. What Kant seems to be asserting is that there are certain innate laws, inherent in the mind from birth, which enable the mind to perform certain cognitive acts upon the materials given by sense, but although these laws of thought are innate, the mind only becomes aware of these laws—or aware that it performs these acts upon the objects of sense—as well as the conceptual content implicit in these acts, when it begins to reflect upon these activities over the course of experience.

At this point there is one further component to Kant’s view which needs to be explained before we proceed any further. As we will see in more detail in §3.4, it is very likely that Kant’s account of the origin of the pure concepts of the intellect is derived, in large part, from Leibniz.¹⁸⁴ Throughout the *New Essays*, Leibniz claims that the pure ideas of the intellect (e.g., substance, cause, etc.) must be innate since they could not have been acquired by abstraction from what is given through sensory experience. But Leibniz also insists that the only sense in which these ideas exist in the mind prior to experience is just that the mind has an innate disposition to form them upon the occasion of experience: these ideas are thus dispositionally, rather than occurrently, innate, and are only present in the mind from birth “as inclinations, dispositions, tendencies, or natural

¹⁸⁴ This has long been noted by many commentators. For discussion, see Vaihinger, *Commentar*, Vol. I, pp. 47-49 & 169-172 & Vol. II, pp. 429-431.

potentialities, and not as actualities.”¹⁸⁵ Although the ideas generated through the intellect are innate, the mind only becomes consciously aware of the presence of these ideas upon the occasion of experience,¹⁸⁶ and like Kant, Leibniz maintains that the mind explicitly forms these ideas when it looks inwards and reflects on its own nature as a thinking thing.¹⁸⁷ These innate ideas are thus, in one sense, learned, since the mind only becomes aware of them on the occasion of experience, but in another sense not learned, since they were present in the mind before experience as innate dispositions.¹⁸⁸ Crucially, note that when Leibniz asserts that these ideas are innate as dispositions, he is not simply asserting that the mind has a capacity to form them. As Leibniz repeatedly stresses, a faculty cannot exist in the mind which is devoid of all content, and so these dispositions cannot be mere capacities or pure potentialities; instead, these dispositions must be laden with a certain kind of content which determines the *kinds* of ideas the mind will form when it begins having experiences,¹⁸⁹ in much the same way that the veins of a block of marble “outline a shape which is in the marble before they are uncovered by the sculptor.”¹⁹⁰ The basic idea behind this metaphor is that for every one of these dispositions, there must be a certain kind of latent, conceptual content which underlies the various cognitive abilities the mind has.

Now, given these similarities, it is not unreasonable to suppose that Kant’s view on the status of these concepts is the same, in outline, as Leibniz’s. In that case, one can perhaps reconstruct his position along the following lines. When Kant asserts that there are certain innate laws present in the mind from birth, what he means is that there are certain dispositions the mind has which are given to it as part of its innate endowment. These dispositions correspond to certain cognitive activities which the mind performs upon the materials given through sense upon the occasion of experience which cause

¹⁸⁵ Leibniz, *New Essays*, p. 52; cf. 106. Ideas are identified as dispositions (or at least said to be connected with them in some way) in *New Essays*, p. 52, 86.

¹⁸⁶ Ibid p. 49, 77-78, 79-80, 81, 110.

¹⁸⁷ Ibid p. 51, 81, 84, 85-86. Leibniz claims that these ideas come from the same faculty which Locke refers to as reflection, though it is clear that for Leibniz reflection involves something more than the power the mind has to form ideas of its own mental operations through introspection: it also involves reflecting on what the mind is like in its own nature, viz., that it is a substance, a unity, etc.

¹⁸⁸ Leibniz, *New Essays*, p. 51 notes that these ideas are always present to our understanding, even though we are not always aware of them: “Even if we give no thought to them, they are necessary for thought, as muscles and tendons are for walking. The mind relies on these principles constantly; but it does not find it so easy to sort them out and to command a distinct view of each of them separately, for that requires great attention to what it is doing” (ibid, p. 84); indeed, we are “very often not thinking distinctly about what we are doing when we reason, any more than about what we are doing when we walk or jump” (ibid, p. 83). Interestingly, this leads Leibniz to deny, contra Locke, that what is innate cannot be learned: “I quite agree that we learn innate ideas and innate truths, whether by paying heed to their source or by verifying them through experience...I cannot accept the proposition that *whatever is learned is not innate*” (ibid, p. 85); the pure ideas of the intellect are “contained within us in an implicit way, so that we can find them within ourselves by attending carefully and methodically to what is already in our minds” (ibid, pp. 77).

¹⁸⁹ Ibid p. 112, 140. As Leibniz, *New Essays*, p. 110 notes in response to Locke’s claim that the soul is a *tabula rasa*, “those who hold forth about the ‘blank page’ cannot say what is left of it once the ideas have been taken away...For where will one ever find in the world a faculty consisting in sheer power without performing any act? There is always a particular disposition to action, and towards one action rather than another.”

¹⁹⁰ Ibid p. 86; Cf. 52, 80, 87.

these objects to be represented in certain ways. For example, the mind represents something as a substance both by grouping together several, distinct sensible qualities so as to represent them as qualities of one and the same thing, and by combining the representation it has of some collection of sensory qualities at one time, with another, distinct collection of sensory qualities at another time, so as to represent these qualities as various states of one and the same thing;¹⁹¹ similarly, the mind represents something as a whole by aggregating in thought the parts of a manifold given by sense, while at the same time delineating those parts from others in the surrounding region; or again, the mind represents something sensible as a cause when it conceives of that thing standing in a necessary connection to something else. These are all different kinds of operations which the mind performs upon the materials given by sense, and, since the concepts of substance, whole, cause, etc., are all devoid of sensory content, it is only by virtue of these cognitive acts that the sensory materials given by experience come to be represented as a substance, or a whole, or a cause, etc.¹⁹² The mind thus comes ready-equipped with certain innate dispositions to represent what it senses in various ways when it comes to be affected by objects upon the occasion of experience. But these are not *bare* dispositions, they are dispositions which are structured in highly specific ways. And if each of these dispositions are structured in certain ways, then there must be a certain kind of latent, conceptual content which is also present in the mind from birth: in other words, the presence of these dispositions does not simply entail that the mind has certain innate abilities, it also entails the presence of certain innate concepts. Each of these cognitive activities are different ways of relating the manifold of sense, and underlying each of these acts of combination are different concepts of the intellect. These concepts are the latent content which underlies each of these innate abilities.

With this in place, we may now return to our original question. In order to understand Kant's position on the origin of the pure concepts of the intellect, a distinction must be drawn between the way the mind originally came to acquire these concepts and how the mind becomes consciously aware of the fact that it has these concepts. The laws

¹⁹¹ Cf. Ak 17:438, Refl. 4158 (1769-1770. M.VI) and Ak 17:368, Refl. 3964 (1769. M L.).

¹⁹² As is well known, in the CPR Kant will argue that each of these cognitive activities are different forms of judgment. Interestingly, Kant already indicates this in a passage contemporaneous with ID.

Through the nature of the understanding, the fundamental concepts of synthesis arise not by abstracting <abstrahendo>, but rather by judging <iudicando>. Existence, possibility, unity, substance, accidents, relations, (crossed out: the lo) real and logical respect <respectus realis, logicus>, necessity, contingency. Whole, a part. Simple, composite, ground, consequence, power, cause. Ak 17:349, Refl. 3927 (1769? 1771-2? M V. EII)

Notice once again that the pure concepts of the understanding are *not* given by abstraction. They "arise" through some other kind of intellectual activity, which Kant refers to as synthesis (i.e., an act of combining a manifold of sense in a certain way). Presumably what Kant has in mind here is that when having sensory experiences, the mind makes certain judgments such as 'whenever there is a property, there is a substance that has that property,' that 'in every alteration, substance remains permanent', and 'every event has a cause', etc. Each of these judgments are priori, since they are supposed to be universal and necessary, and they all employ certain concepts (i.e., substance, cause), which are not derivable from sense. It is worth comparing these remarks with the discussion that appears in Ak 2:321* of *Dreams of a Spirit Seer*, where Kant argues that the concept of spirit (or immaterial substance) is another example of a concept not given by abstraction, but which is originally formed through the use of certain surreptitious judgments.

of thought responsible for combining the materials given by sense are present in the mind from birth as innate dispositions. And, since these dispositions are structured, the conceptual content which underlies these acts of the intellect is also innate. On the other hand, the mind only becomes aware of the presence of these laws of thought, along with their underlying conceptual content, through experience: it is only when the mind begins to reflect upon the various acts of cognition it performs upon the materials given by sense, and *recognizes* that it is performing these cognitive acts, that these concepts are explicitly brought to the mind's attention. For example, when the mind begins to carefully reflect on the way it represents the wax, it observes that it represents the collection of qualities sensed at t_1 as the same object as the collection of qualities sensed at t_2 , even though those qualities have changed; once the mind begins to reflect on the content of this thought, it recognizes that it represents those qualities as changing states of an enduring thing which underlies these changes. The mind then learns the concept of substance by abstracting the content of these thoughts—the concept of a thing which underlies sensible qualities and endures through change—from the particular collection of sensible qualities.¹⁹³ The

¹⁹³ This, in fact, is also the way Descartes explains the origin of this idea. Descartes, like Leibniz and Kant, maintains that the concepts of the intellect are innate, albeit dispositionally rather than occurrently. See Descartes, *Comments on a Certain Broadsheet* [AT VIII B 356; CSM 303-304]. Descartes introduces the example of the wax to demonstrate that when we carefully reflect on the way we represent ordinary objects, we will recognize that our beliefs about those objects are not based on what is given by sensation and imagination alone. Although one might initially assume that all we perceive in the wax is what is given by sensation, the perception of the wax also involves certain acts of judgment which go beyond the content given by sense—in the much the same way that when we look out a window in winter, all we see with our senses are hats and coats ambling around in the cold, though we judge that there are human beings underneath those cloths [AT VII 31-32; CSM 21]. What Descartes wants us to recognize by reflecting on these examples is that a good deal of the content involved in our perception of objects is actually contributed by the mind in the form of certain tacit judgments. Although every sensory perception requires some sensory input, these inputs do *not alone* constitute our perception of the things we perceive: there is more involved in the perception of that object than just seeing it. But although these concepts are innate (since they are not given by sense) the mind only becomes consciously aware of them when it begins to reflect on the way it perceives the objects of the senses. While these concepts are involved in every act of perception, the mind often employs them without any explicit recognition that it is doing so—as when we judge that the wax persists through time without recognizing that this judgment requires the employment of a concept which goes beyond whatever is given by the senses. It is only by carefully reflecting on how we perceive the wax that we come to recognize that there is something involved in our perception of that object which was present all along, but which we did not pay sufficient attention to.

But what is this wax which is perceived by the mind alone? It is of course the same wax which I see, which I touch, which I picture in my imagination, in short the same wax which I thought it to be from the start. And yet, and here is the point, the perception I have of it is a case not of vision or touch or imagination—nor has it ever been, despite previous appearances—but of purely mental scrutiny; and this can be imperfect and confused, as it was before, or clear and distinct as it is now, depending on how carefully I concentrate on what the wax consists in. [AT VII 31; CSM 21]

The concept of substance is thus dispositionally innate, since it is not given through sensation, but is nevertheless learned since we only become *aware* of this concept when we reflect on the way we represent sensible objects. Interestingly enough, Descartes (like Leibniz) says that this demonstrates that in knowing objects, we know *ourselves* better than the objects we represent:

Moreover, if my perception of the wax seemed more distinct after it was established not just by sight or touch but by many other considerations, it must be admitted that I now know myself even more distinctly. This is because every consideration whatsoever which contributes to my perception of the wax, or of any other body, cannot be establish even more effectively the nature of my own mind. But besides this, there is so much else in the mind itself which can serve to make my

mind thus becomes consciously aware of the fact that it has these concepts when it begins to reflect on the different kinds of cognitive acts which it performs upon the materials given by sense and then abstracts the underlying content corresponding to those acts from the sensory materials to which they are applied. But this only explains how the mind becomes *consciously aware* of the fact that it has these concepts, it doesn't explain how it first acquired those concepts. In a sense, the only thing the mind learns is to recognize what is present all along.

And once this has been recognized, we can now understand why Kant does not, in fact, attribute the origin of these to the operations of the logical use of the intellect. When Kant asserts that the mind acquires the pure concepts of the intellect "by attending to its actions on the occasion of experience" [ibid], he is offering an explanation as to how the mind becomes consciously aware of the fact that it has these concepts. But this does not explain how the mind came to originally acquire them. These concepts are originally given to the mind as part of its innate endowment: the pure concepts of the intellect are present in the mind from birth as certain kinds of innate dispositions to order the manifold given by sense upon the occasion of experience. When the mind is affected upon the occasion of experience, it begins to perform certain kinds of cognitive acts upon the manifold of sense; these acts are ways of applying the conceptual content which is latent in the mind from birth to what is given by the senses. These operations are not logical acts of reflection, comparison and abstraction. Instead, these cognitive activities are the very ones which are characteristic of the intellect in its real use: the real intellect is the power the mind has to combine the manifold of sense in various ways according to the concepts which are present in the mind from birth as innate dispositions.¹⁹⁴

knowledge of it more distinct, that it scarcely seems worth going through the contributions made by considering bodily things. [AT VII 33; CSM 22]

The mind is better known than the objects of the senses since we only know those objects clearly and distinctly through the mediation of certain judgments contributed by the mind in the act of cognizing them.

¹⁹⁴ As we noted above, one might be tempted to object that Kant does not deny that the pure concepts of the intellect are generated through the logical act of abstraction, but only that they are not abstracted from *anything given by the senses*. In particular, one might think that Kant, following Leibniz, is actually asserting that these concepts are abstracted by reflecting on our own nature: in other words, the mind is able to form a representation of itself through inner sense, and that by reflecting on its nature the mind then abstracts the pure concepts of the intellect, like unity, substance, etc. Perhaps, then, Kant's point is just that the pure concepts of the intellect are not abstracted from outer sense; they are, however, abstracted from what is given through inner sense.

Although there is some evidence which supports this reading (note, for example, the various passages where Kant appears to assert that the concept of substance, or unity, is *given* by reflecting on our nature), I don't think this is ultimately correct. Recall that Kant maintains that these concepts are abstracted by the mind "by attending to its *actions* on the occasion of experience" [Ak 2:395; my emphasis]. On my reading, what this means is that the mind is innately disposed to make certain judgments about the things it represents, and in doing so it applies certain concepts to those objects. These judgments, as well as the attendant concepts, are not themselves given by *reflecting* on the self. The concept of substance, for example, is not given through some observation of the self as a substance; the original source of that concept is instead certain judgments the mind is innately disposed to make. The mind *applies* the concept of substance to itself when it reflects on its own nature; it represents itself as a substance by *judging* that it endures through time and is the common subject of diverse predicates. These concepts are not abstracted

Before we proceed any further, there is an important problem that needs to be addressed at this point. We noted above that Kant's explanation of the origin of the pure concepts of the intellect is nearly identical to his account of how the mind comes to acquire the concepts of time and space: all of these concepts are said to be generated through an innate activity of the mind which is responsible for ordering what is sensed upon the occasion of experience. Likewise, the concepts of time and space, like the concepts of the pure intellect, are not derived from anything given by sensation. But given these similarities, why does Kant insist that the concepts of time and space are sensory rather than intellectual? Indeed, why are space and time not concepts of the real intellect? Interestingly enough, there are a number of passages in the Nachlass where Kant himself discusses these similarities between the pure forms of intuition and the pure concepts of the intellect, and in many of these passages Kant asserts that the concepts of time and space *are* indeed concepts of the intellect, contrary to what he maintains in ID.

All human cognitions can be divided into two main genera: 1. Those which arise from the senses and are called empirical; 2. those which are not obtained by means of the senses at all, but rather have their ground in the constant nature of the [~~crossed out~~: cognitive power] thinking power of the soul, and can be called pure representations. Since all of the materials for thinking must necessarily be given by means of the senses, the matter of our entire body of cognition is empirical. For this very reason all pure concepts must pertain merely to the form of cognitions. Now we have a twofold form for cognitions: the intuitive and the rational form. The former occurs only in the immediate cognition of individual things, the latter in general representations; the former I will call intuitive concepts, the latter concepts of reason. Now in all empirical cognition we can look first merely to the matter, and this consists of sensation; second, to the form of intuition; third, to the form of reason in concepts. The form of appearances rests solely on space and time, and these concepts do not arise through the senses or sensation, but rather rest on the nature of the mind, in accordance with which the various sensations can be represented under such relations. Hence, if all sensation from the senses is set aside, then the concept of space and time is a pure concept of intuition, and because everything that the understanding can cognize in experiences lies in it, *it is a concept of the understanding*; and although the appearances are empirical, it is *nevertheless intellectual*. Likewise, sensations and appearances that have been made general are not pure but rather empirical concepts of reason; if, however, one leaves aside every effect of the senses, then the concepts are pure concepts of reason, such as: possible, substance, *etc.* Hence all pure concepts are intellectual and intuitive, or rational and [~~crossed out~~: discursive] reflecting concepts.¹⁹⁵

by reflecting on our nature; rather, it is only by reflecting on our nature that we come to apply these concepts to ourselves. This concept has its source in these innate judgments, not some inner inspection of the self.

¹⁹⁵ Ak 17:364-365, Refl. 3957 (1769. M XXXXVII–XXXVIII), my emphasis. Cf. Ak 17:352, Refl. 3930 (1769. M 432) & Ak 17:404, Refl. 4073 (1769.).

In this passage, Kant distinguishes between empirical concepts, which are abstracted from what is given by the senses, and pure concepts, which “have their ground in the constant nature of the thinking power of the soul.” This distinction is meant to be both exclusive and exhaustive. Pure representations are those which do not have their origin in anything given by the senses, but are instead generated by the mind through its own inner activity; and, since the mind cannot think anything unless it is first given some content from sense, every pure concept only pertains to the form of a cognition. From this, Kant draws the conclusion that time and space are concepts of the intellect. The concepts of the intellect are, however, distinguished into two classes: the concepts of time and space are called “intuitive concepts” since they relate to their objects immediately and are singular (they only occur “in the immediate cognition of individual things”), whereas other concepts, such as substance, possibility, etc., which he calls “concepts of reason”, are general and only relate to their objects mediately. Yet in spite of these differences, the concepts of time and space are still classified as intellectual, not sensory.

But although Kant was occasionally inclined to classify the concepts of time and space as intellectual, throughout ID they are consistently identified as sensory cognitions, and distinguished from the pure concepts of metaphysics, which are always intellectual. Kant repeatedly insists that time and space cannot be cognized through pure concepts of the intellect, and that the concepts of space and time “are not *rational* at all” [Ak 2:391].¹⁹⁶ Instead space and time are forms of sensibility, and hence belong to sensory cognition; they are conditions of sensory cognition, not intellectual cognition [Ak 2:396, 398, 410, 414*]. Although the intentional content of a pure intuition is “devoid of sensation”, and not anything that can “touch the senses”, it is not “for that reason deriving from the understanding” [Ak 2:397; Cf. Ak 2:393].

But if the concepts of time and space are actively generated by the mind, then on what grounds does Kant classify them as sensory? Although we will not be in a position to provide a complete answer to this question until section §2.6, a crucial first step in making some headway on this issue is to recognize that in ID, the fact that a cognition is actively generated by the mind does not alone entail that it is not sensory. Indeed, the concepts of time and space are not the only examples of such concepts:

Hence, even the most general empirical laws are nonetheless sensory; and the principles of sensitive form from which are found in geometry (determinate relations in space), no matter how much the understanding may operate upon them by reasoning according to the rules of logic from what is sensitively given (by pure intuition), nonetheless do not cease to belong to the class of what is sensitive. [Ak 2:393-394]

Thus empirical concepts do not, in virtue of being raised to greater universality, become intellectual in the *real sense*, nor do they pass beyond the species of

¹⁹⁶ Cf. Ak 17:371-372, Refl. 3974 (1769, M LIII.).

sensitive cognition; no matter how high they ascend by abstracting, they always remain sensitive. [Ak 2:394]

What is striking about these passages is that the concepts generated through the logical use of the intellect are said to be *sensory*, even though they too are actively generated by the mind; these concepts are not given passively through sense alone, they are generated through acts of reflection, comparison and abstraction. The concepts of time and space, together with the concepts generated through the real and logical use of the intellect, are all alike in that every one of these concepts is said to be, in one form or another, *actively* generated by the mind; and yet, whereas the concepts of time and space, as well as those generated by the logical use of the intellect, are sensory, the concepts produced through the real use of the intellect are not. In that case, there must be something that the concepts of time and space share in common with the concepts generated through the logical use of the intellect which distinguishes them both from the pure concepts of the intellect, and this common element is what makes them sensory. And whatever this common feature is, it cannot be based on whether that concept was actively generated by the mind.

Getting clear on just what this feature is will help explain why the concepts of time and space, together with those produced through the logical use of the intellect, are all alike classified as *sensory* cognitions, and are thus distinguished from the concepts generated by the real use of the intellect, which are purely intellectual. It will be useful to begin with a distinction that Kant introduces between what he calls the “sensual” and the “sensitive”. In §5, Kant writes that in every sensory cognition (*sensualem cognitionem*) there is a distinction to be drawn between the sensual (*sensuales*)¹⁹⁷ and the sensitive (*sensitivae*): a cognition is sensual by virtue of containing matter—which Kant identifies with sensation—while form is that by virtue of which sensory representations are sensitive. Both the concepts of time and space, as well as the concepts generated through the logical use of the intellect, are repeatedly referred to as ‘sensitive’. Although Kant does not explain the distinction any further in this passage, he does elaborate on the nature of the sensitive when explaining the distinction between the real and logical use of the intellect. What Kant says is that the concepts produced through the logical use of the intellect are to be “called sensitive *on account of their genesis* and not on account of their comparison in respect of identity or opposition” [Ak 2:393]. This claim is repeated in §7, where Kant argues that the distinction between the sensory and the intellectual should not, contra Wolff, be understood in terms of degrees of confusedness, but rather in terms of the different *origins* of a cognition: the concepts of geometry are paradigms of sensory cognition, whereas the concepts of metaphysics all belong to the real use of the intellect, and the reason is that “each and every one of these cognitions preserves the sign of its ancestry, so that those belonging to the first group, however distinct they be, are called sensitive *because of their origin*” [Ak 2:395; my emphasis]. In contrast, the real use of the understanding consists in producing concepts that “contain no form of sensitive cognition

¹⁹⁷ The reason I translate ‘sensualem cognitionem’ as ‘sensory cognition’ (rather than ‘sensual cognition’ is because sensory cognition contains both the sensual and the sensitive, and this fact is obscured if one uses ‘sensual’ for ‘sensuales’. The sensual, alongside the sensitive, is an aspect of *sensory* cognitions.

and...have been abstracted from no use of the senses” [Ak 2:394]. What is common, then, to all sensory cognition, as opposed to that which is *purely* intellectual, is a shared origin in experience—they are sensory, that is, “on account of their genesis” [Ak 2:393].

At first sight, this explanation of the difference between the sensory and the intellectual appears to run into the same problem from before: if cognitions are distinguished according to whether or not they have their origin in something given through sense, then both spatiotemporal form, as well as the concepts given through the logical use of the intellect, should be intellectual rather than sensory. But Kant’s point is more subtle than this. Although a cognition is classified as sensory by virtue of its origin, every sensory cognition has two distinct components, the sensual and the sensitive, and each of these components has a *distinct* origin: whereas the sensual aspect of a sensory cognition is given by affection, the sensitive is given through some act of the mind, where these are either the acts of reflection, comparison and abstraction performed by the intellect, or the acts of coordination which project sensations into spatiotemporal locations. The origin of the *sensual* in a sensory cognition is thus distinct from the origin of the *sensitive*. Consequently, when Kant claims that the distinction between sensory and intellectual cognitions is based on a difference in origin, his point is just that every sensory cognition contains *something* that is originally due to sense, even if the other components of that representation originate from the mind. In every sensory cognition the matter is given by sense, whereas the role of the forms of intuition, or the intellect in its logical use, is just to represent that matter according to a certain form: through the intellect, the mind represents the matter given by sense according to the form of generality, while the forms of intuition represent that matter by projecting it onto spatiotemporal locations. And in each of these cases, the cognition remains sensory since the intentional content of that representation contains some element originally due to sense.

This would appear to explain why Kant maintains that the cognitions given by the logical use of the understanding are often sensory. As we have already seen, the logical use of the understanding consists in forming general concepts through acts of comparison, reflection and abstraction. Insofar as these acts of the understanding are only responsible for subordinating particular representations under those which are more general, and thereby producing hierarchical systems of classification amongst our concepts, the logical use of the understanding presupposes that the representations at the bottom of this hierarchy are themselves given to the mind in some way or other. Since the matter of an intuition is always given by sensation, there must always be some sensual element contained in the concepts generated through the logical use of the understanding, at least when those concepts are not pure; and that is why these cognitions must always remain sensory, “no matter how extensive the logical use of the understanding may have been in relation to them” [Ak 2:393].

But while this might explain why the concepts generated through the logical use of the intellect are sensory, it fails to explain why time and space are not intellectual. If a cognition is sensory when one of the elements of that cognition is sensual, then why are the *pure intuitions* of time and space sensory rather than intellectual? A pure intuition is

“an intuition devoid of sensation” [Ak 2:397]; but if it does not contain anything sensual, then that cognition should be intellectual. And yet Kant does not draw this conclusion; on the contrary, he notes that a cognition remains sensory even if the form of that representation is “found to be free from all sensation” [Ak 2:393], and obviously this qualifier is meant to refer to the pure intuitions of time and space.¹⁹⁸

In order to deal with this problem, the first step is to recognize that space and time are connected to sensible appearances in a way that the pure concepts of the intellect are not. The different ways in which these concepts are related to sensible objects is discussed in a number of passages from the Nachlass. Here it is useful to return to the distinction drawn above between subjective and objective concepts. Recall that in Ak 17:377-378, Refl. 3988 (1769 M.2), an objective concept is one that has been abstracted from an object, whereas a subjective concept is one that only belongs to a sensible object by virtue of the way the mind represents it. This distinction appears in a number of passages from the Nachlass which are contemporaneous with ID, and in many of these passages it is used to

¹⁹⁸ Another potential problem is that if a cognition is sensory just in case one of the elements of that cognition is sensual, then why aren't the pure concepts of the intellect also sensory? Recall that in the passage cited earlier, Kant maintains that all “fundamental rational concepts are concepts of form” [Ak 17:377-378, Refl. 3988 (1769 M.2)]. But if this means that they pertain to the way in which something originally given by sense comes to be represented according to a certain form (viz., as when the mind represents something sensible *as* a substance, or a cause), then the pure concepts of the intellect also appear to be sensitive, and hence sensory. Moreover, in Ak 2:396, Kant writes that “since it is only through the senses that all the matter of our cognition is given, the noumenon as such cannot be conceived by means of representations drawn from sensations.” But if the matter of every cognition is given by sensation, and every cognition requires both matter and form, then why aren't the pure concepts of the intellect sensitive?

It seems to me that, strictly speaking, in ID the pure concepts of the intellect are *not* forms of sensory cognition—Kant does say, after all, that these concepts “contain no form of sensitive cognition” [Ak 2:394]. As for the passage where Kant asserts that the matter of every cognition is given by sense, it is at least possible that he is only referring to intuition here, rather than cognition in general: in the passage in which this statement appears, Kant is trying to establish certain facts about the nature of intuitive cognition, specifically why our intuition is always passive and singular, and in that case, when Kant asserts that the matter of every cognition is given by sense, he may only be referring to *intuitive* cognition, not cognition in general. Indeed, as late as the *Jäsche Logic*, §5, Ak 9:92-94, Kant maintains that while the form of a concept always comes from reflection, comparison and abstraction (which he says explains the logical origin of concepts), the *matter* of some concepts is given through the intellect alone, and these concepts are identified as the ones studied in metaphysics. Kant explains the distinction between pure and empirical concepts in terms of this difference: the latter are generated when something given by sense is represented according to a certain form, whereas the former are representations which have been generated even with respect to their matter, or content (a “*pure* concept is one that is not abstracted from experience but arises rather from the understanding even *as to content*” [ibid, §3, Ak 9:92]). The same distinction appears to be at work in the *Dissertation*: whereas the logical use of the intellect generates concepts solely with respect to their form, through the real use of the intellect the mind generates *both* the form and matter of a concept. Indeed, there are passages from the Nachlass contemporaneous with ID where Kant makes this very point:

Rational cognitions are either, as far as their matter is concerned, given by the senses, and have only the form of reason, e.g., general concepts, or they express the form of reason itself; the former are empirical, the latter are *notiones purae*. [Ak 17:368, Refl. 3963 (1769. M L.)]

In this passage Kant claims that the origin of the matter of every rational cognition is either given through the senses or expresses the form of reason itself; in the former case, the intellect is only responsible for representing this matter as general through the logical use of the intellect; in the latter case, the concepts are *pure notions*, and hence contain nothing sensory as part of their content.

mark a contrast between the concepts of time and space, on the one hand, and the pure concepts of the intellect on the other.

A cognition is true which is in agreement with the constitution of the object. Since the representation of external objects is only possible by means of the idea of space, all of the axioms of space and what can be derived from them agree with the object, likewise all relations of concepts in accordance with the rule of identity. For the ideas then agree among themselves. But since the metaphysical concepts of ground, substance, etc., are not properly speaking representations of the objects, while even the most perfect sense cannot have a sensation of these in anything and things can be represented on the whole without these relations, although not by means of our reason, thus these concepts are not objective; therefore in the axioms of them everything is subjective...¹⁹⁹

In this passage, the distinction between objective and subjective concepts is explained in terms of how those concepts relate to their objects: whether or not a concept is subjective or objective depends upon whether it agrees with the “constitution” of the object. The concepts of space and identity are given as examples of objective concepts. These concepts agree with their objects since they are conditions which make the representation of those objects possible. Thus, since space is the form of appearance, every sensible object which appears before the mind must be represented in space; when external objects are represented in space, the representation agrees with the object. Likewise, identity is an objective concept since everything the mind represents must be identical with itself; the representation of a thing always agrees with itself, since one never senses opposite determinations in a thing—otherwise that object would not be a possible object of cognition.²⁰⁰ In contrast, metaphysical concepts like the concepts of ground and substance do not agree with the constitution of the objects represented through the senses. There are two reasons given in support of this claim: first, it is not possible to have a sensation of anything corresponding to those concepts in the objects; second, it is possible to represent those objects without representing them under those concepts—so long, that is, as those objects are not represented “by means of our reason.” Although this is still quite vague, what is indicated by this passage is that the concepts of space and time are related to the objects of sense in a way that the pure concepts of the intellect are not.

Elsewhere, Kant explains the distinction between subjective and objective concepts (or the relation those concepts have to their objects) in terms of whether a concept represents a genuine determination of its object.

In addition to those determinations without which the objects cannot exist, there are in our reason further conditions, without which we cannot conceive certain objects through reason, even though these conditions are not determinations of the objects themselves. These *conditiones* are therefore subjective, and their concepts do not signify anything in the object. All synthetic judgments of pure

¹⁹⁹ Ak 17:357, Refl. 3942 (1769? 1764-68? M LIV). Cf. Ak 17:370, Refl. 3971 (1770 M LII).

²⁰⁰ The same remarks appear in ID, Ak 2:397-398.

reason are accordingly subjective, and the concepts of them signify actions of reason toward itself.²⁰¹

A concept is said to be objective when it corresponds to a determination which that object cannot fail to have without ceasing to exist. In contrast, the pure concepts of reason are subjective since they do not correspond to anything that exists as a genuine determination of the objects of sense. When the mind represents something sensible through one of these pure concepts, that concept does not refer to anything contained in that object as one of its determinations. They do not signify anything in the object, they only signify actions of the mind when it represents that object according to certain relations.²⁰²

This contrast between the ways in which the concepts of time and space, and the pure concepts of the intellect, are connected to sensible appearances is also present in the *Dissertation*. Space and time are conditions of sensible objects, in the sense that “an intuition of an entity is only ever given if that being is contained *in space and time*” [Ak 2:414*]; space and time are thus conceived of “as though they contained *within themselves* all the things which in any way present themselves to the senses” [Ibid; cf. Ak 2:397]. From the fact that sensible objects exist in time and space, Kant infers that there are certain determinations which sensible objects have that are grounded in determinations that belong to time and space; although time and space “determine nothing as to the *quality* of sensible things”, the quantitative determinations of sensible objects, specifically those which pertain to magnitude, are determinations which sensible objects have by virtue of existing in time and space [Ak 2:397]: the representations of time

²⁰¹ Ak 17:355, Refl. 3938 (1769. M VII).

²⁰² Cf. Ak 17:369, Refl. 3969 (1769. M LII). The claim that the pure concepts of the intellect do not correspond to any determinations of the objects of sense, but instead relate to these objects by virtue of the way the mind represents them, is assuredly a puzzling view—especially when we combine it with the claim that these concepts may be legitimately predicated of those objects, or at least apply to their objects objectively. It is worth noting here that Kant must be using the term ‘determination’ more narrowly than Wolff and his successors. For the Wolffians, a determination is used to refer to the referent of any possible predicate, and is generally defined through the PNC and the Law of Excluded Middle. Thus, Baumgarten, *Metaphysica*, §34, defines a determination, or the determinate and the determinable, as follows:

What is either posited to be A, or posited not to be A, is DETERMINED. What is however only posited to be either A or not-A, is UNDETERMINED. Or, if nothing is posited about the subject with respect to contradictory predicates except that one of these two belongs to it, then that subject is undetermined with respect to these predicates; however, it is determined if one of the two is posited in the subject. That which can be determined is DETERMINABLE. Therefore, that about which it can be posited that it is either A, or that it is not-A, is determinable.

Similarly, Wolff, *Ontologia*, §112 defines ‘determination’, or the ‘determinate’ and ‘determinable’ as follows:

If A is viewed as that of which B must be affirmed, or of which B, E, and F, etc. must be affirmed, then A will be *determined*.

For the Wolffians, possibility is the most universal determination of being, and every other kind of being is obtained by adding additional determinations to the concept of possibility through logical division, all the way down to particular entities which are completely determined with respect to every possible determination. Kant himself endorses this definition of ‘determination’ in the pre-critical *Nova Dilucidatio*, (“*To determine is to posit a predicate while excluding its opposite*” [Ak 1:391-392]). Later, however, Kant uses the term much more narrowly. The most obvious example of this is Kant’s denial that the categories of modality are determinations of any sort, let alone determinations of the objects of sense [A219/B266 & Ak 2:72]. For Kant, not every predicate is a determination.

and space are what make possible the appearance of objects with determinations of shape, size, motion, etc. They also determine the specific nature of these determinations, such as, for example, that the geometrical features of sensible objects are always Euclidean [Ak 2: 403-405], that their movements through space and time, as well as their internal changes, are always continuous [Ak 2:400-401]. In §12, Kant notes that it is only by virtue of having these determinations that certain sciences of phenomena are possible, such as pure mathematics, which deals with space in geometry and with time in pure mechanics and arithmetic. As time is the form of all phenomena, sensible objects are always subject to the axioms of time [Ak 2:401-2], and since all outer objects must appear in space, and geometry concerns the relations of space, nothing can appear before the outer senses unless it conforms to the axioms of geometry [Ak 2:403, 404-5]. The concepts of time and space (together with the laws of logic) are thus what enable the mind to make certain a priori inferences about the objects that appear before the senses [Ak 2:405-6], and all of these inferences are based on the assumption that there are certain determinations which are conferred upon objects insofar as they appear in time and space. Once these objects appear before the senses, their spatiotemporal determinations are then subjected to certain acts of analysis performed by the understanding in its logical use.²⁰³ The spatiotemporal form of sensible objects is contained in them as one of their determinations, and the mind forms concepts of these determinations through a process of selective attention, or, by separating these determinations in thought so as to consider them in isolation of the other determinations which appear alongside them—as when, for example, one forms a concept of a certain shape by considering some sensible object in regards to its shape alone, while ignoring all the other properties of that thing.

In contrast, the pure concepts of the intellect have a much more tenuous connection to sensible objects. Recall, once again, the earlier distinction between the two senses of ‘to abstract’: to abstract a pure concept of the understanding is to “not attend to the other things which are connected with it in some way or other”, whereas something abstracted through the logical use of the understanding must first “be given only concretely, and only in such a way that it is separated from the things joined to it” [Ak 2:394]. Although the pure concepts of the intellect are connected to the objects of sense “in some way or other”, they are not given in the concrete as something contained in the cognitions of sense, and which is then separated from them as a part from a whole: the concepts of metaphysics cannot be abstracted from the objects of sense since they “never enter into any sensory representations as parts” [Ak 2:395]. Again, the point of contrast between these two senses of ‘to abstract’ has to do with whether the content that is

²⁰³ Kant notes that the principles of these sciences are always given through intuition and that the role of the understanding in these sciences is always logical, never real, and Kant contrasts these sciences with metaphysics, in which the concepts and axioms are given by the real use of the intellect, never by intuition. [Ak 2:397-398],

But the *use of the understanding* in sciences of this kind, the fundamental concepts and axioms of which are given by sensitive intuition, is only the *logical* use of the understanding. That is to say, it is the use by which we simply subordinate cognitions to one another, according to their universality and in conformity with the principle of contradiction, and by which we subordinate phenomena to more general phenomena, and the corollaries of pure intuition to intuitive axioms. [Ak 2:411].

abstracted from a given whole is a constituent part of the thing it is abstracted from. As in the passages cited above from the Nachlass, these concepts do not appear to signify any genuine determinations which exist in the objects intuited by sense; instead, they are connected to those objects by virtue of the way the mind represents them. Though pure concepts of the understanding can be “thought in application to the ideas abstracted from them, they do not lie in them and are not abstracted from them.”²⁰⁴ While sensible particulars are represented as substances, or as causes, or thought of through the concepts of possibility, necessity, etc., these concepts are not constituent features of the objects represented through the senses.^{205 206}

²⁰⁴ Ak 17:352, Refl. 3930 (1769. M 432). The distinction between the two senses of ‘to abstract’ is implicit here. This very same distinction is also made in Ak 17:371-372, Refl. 3974 (1769. M LIII.).

All concepts are either sensible concepts or concepts of reason. The **first** are either of sensation or of appearance; these have as their ground the form of space and time. The **second** cannot be found through any *analysis* of experience, although all experience is coordinated to them, and are pure concepts of reason, if no object of experience is thought through them; in the latter case, however, they are empirical concepts. E.g., a *genus* is a pure concept, but a stone in general or the *genus* of stone is an empirical one. The rational science of the rules for judging objectively, i.e., of all judgments and inferences, insofar as they arise *per analysis*, is logic. The rational science of synthetic cognitions and judgments is metaphysics. Space is not a concept of reason, but metaphysics seeks the rational concept of it.

In this passage, every concept is classified as either sensible or a concept of reason, and space is no longer a concept of reason, or even a concept of metaphysics, but instead a sensible concept. Once again, the grounds for the distinction is based on whether a concept corresponds to something contained in the object to which it is applied and which is found by abstracting it through analysis. The pure concepts of reason are not given by abstraction through any *analysis* of experience precisely because those concepts are *not* contained in sensible particulars as constituent features. They only belong to those objects by virtue of the way the mind represents them through reason.

²⁰⁵ These concepts are subjective insofar as they only come to belong to an object by virtue of the way it is represented by the mind. But this doesn’t mean that these concepts are somehow “fictive”. Throughout ID, Kant asserts that the concepts of number [Ak 2:397, 406], composition [Ak 2:387-389], cause and effect [Ak 2:400, 406] and substance [Ak 2:400] may be legitimately applied to the objects of sense. In Ak 2:412, we are told that the concepts of the understanding, when related to an object, even one that is sensible, “always denote a characteristic mark which applies to the object itself.” In other words, although we cannot predicate anything sensible of a pure concept, we can predicate pure concepts of sensible objects (Cf. Ak 2:414*). But even if a concept is predicated of an object, it does not follow that this predicate corresponds to a determination of that object—the modal categories of possibility, actuality and necessity, for example, are predicates, but they are not determinations [Ak 2:72; A219/B266].

But if they are not contained in sensible objects as determinations, then how are they related, or connected, to the objects of sense? In ID, Kant says nothing to explain how these concepts can be objectively valid, although, if my interpretation is correct, he does rule out one possible explanation: namely, that they are predicated of those objects by virtue of being determinations contained in them. Of course, Kant will ultimately justify the objective application of these concepts to the objects of sense by arguing that they are what make the *experience* of such objects possible, but that is only accomplished in the *Critique*. And this, in turn, will ultimately require a radical revision of his conception of the intellect. In ID, however, Kant appears to simply assume the objective validity of these concepts without making any attempt to justify this assumption, or explain how the connection is established. The further question of how we can know that these intellectual representations correspond to the objects represented is, of course, the very question that Kant set out to answer in the *Critique or Pure Reason*, and which he posed for the first time in the famous letter to Marcus Herz of 1772 (while also acknowledging that his explanation of the connection in ID was purely negative). See Ak 10:130-131.

²⁰⁶ Kant maintains that the pure concepts of the intellect are not determinations of the objects of sense—and hence not acquired by abstraction—but instead correspond to ways in which the mind represents those

objects. Nevertheless, he also maintains that these concepts legitimately apply to the objects of sense. Although we have already discussed a couple of examples which were supposed to explain why certain concepts (e.g., substance, cause) are not acquired by abstraction from what is given by sense, it may be useful at this point to discuss another example which may shed further light on what Kant may have in mind. The concept of number is, I believe, an especially nice example which can be used to motivate each of the claims Kant makes about the pure concepts of the intellect—particularly the claim that these concepts do not correspond to determinations of the objects of sense, but are only ways of representing those objects, and yet nevertheless legitimately apply to those objects in some way or other. Kant identifies the concept of number as intellectual, in the real sense, at Ak 2:397 [Cf. Ak 2:389*], though he also repeatedly asserts that the concept can be applied to the objects of sense. Like his other examples, Kant does not offer even a hint of an argument as to why this concept is pure, or why this concept does not correspond to any sensible determination. But, as before, one could perhaps reconstruct his reasoning by reflecting on certain remarks that Kant might have found in his contemporaries. To begin, the claim that number is not a quality, or determination, of the objects of sense, but is instead something that only belongs to those objects by virtue of the way they are represented by the mind is found in Berkeley, *Principles*, Bk. 1, Sec. 12.

That Number is intirely the Creature of the Mind, even though the other Qualities be allowed to exist without, will be evident to whoever considers, that the same thing bears a different Denomination of Number, as the Mind views it with different respects. Thus, the same Extension is One or Three or Thirty Six, according as the Mind considers it with reference to a Yard, a Foot, or an Inch. Number is so visibly relative, and dependent on Mens Understanding, that it is strange to think how any one should give it an absolute Existence without the Mind. We say one Book, one Page, one Line; all these are equally Unites, though some contain several of the others. And in each Instance it is plain, the Unite relates to some particular Combination of Ideas arbitrarily put together by the Mind.

In this passage, Berkeley argues that numbers are not qualities that belong to the objects of sense, since the number that belongs to them always depends upon “some particular Combination of ideas arbitrarily put together by the Mind”: one and the same object of sense can either be one, three or thirty-six, depending upon the way it is represented by the mind. The numbers ‘one’, ‘three’ and ‘thirty-six’ cannot be determinations of that object, since one and the same thing would then have contrary predicates. Similar arguments are also implicit in those passages in Leibniz where he asserts that the concept of unity cannot be given through sense, since the objects we perceive can either be regarded as one or many depending upon which concepts the mind uses when representing them, such as an army and its soldiers, or the flock and its sheep). For Leibniz (as well as Kant), the concept of one is given from the concept of unity, and every other number is then defined by adding 1 (2 is 1 plus 1, 3 is 2 plus 1, etc.). If the concept of number is derived from unity, and the objects of sense only come to be represented as unities when the mind represents them according to some concept, then the concept of number cannot be derived from what is given by sense.

Perhaps the most thorough discussion of these points appears in Gottlob Frege, *The Foundations of Arithmetic: A logico-mathematical enquiry into the concept of number* (Oxford: Blackwell, 2nd revised ed, 1974, Trans. J.L. Austin), §22, pp. 28-29

Baumann rejects the view that numbers are concepts extracted from external things: “The reason being that external things do not present us with any strict units; they present us with isolated groups or sensible points, but we are at liberty to treat each one of these itself again as a many.” And it is quite true that, while I am not in a position, simply by thinking of it differently, to alter the colour or hardness of a thing in the slightest, I am able to think of the Iliad either as one poem, or as 24 books, or as some large number of verses. Is it not in totally different senses that we speak of a tree as having 1000 leaves and again as having green leaves? The green colour we ascribe to each single leaf, but not the number 1000. If we call all the leaves of a tree taken together its foliage, then the foliage too is green, but it is not 1000. To what then does the property 1000 really belong? It almost looks as though it belongs neither to any single one of the leaves nor to the totality of them all; is it possible that it does not really belong to things in the external world at all? If I give someone a stone with the words: Find the weight of this, I have given him precisely the object he is to investigate. But if I place a pile of playing cards in his hands with the words: Find the number of these, this does not tell him whether I wish to know the number of cards, or of complete packs of cards, or even say of honour cards at skat. To have given him the pile in his hands is not yet to have given him completely the object he is to investigate; I must add some further words--cards, or

Putting this together, it seems that the pure concepts of the intellect are distinguished from both the concepts of time and space, as well as the concepts generated through the logical use of the intellect, according to the way in which those concepts are connected to the objects presented in experience. Thus, the cognitions given through the logical use of the intellect represent the determinations of some sensible object, or something contained in that object as a part to a whole; although the intellect represents those determinations according to a certain form—namely, in isolation of the other determinations that appear alongside it in the object—these cognitions will always be sensory provided that the intentional content of those concepts ultimately refers to some determination of a sensible object. Similarly, as the objects represented through the senses all exist in time and space, they possess certain spatiotemporal determinations: they are extended in length, width and breadth, have determinate shapes and size, undergo motion, have duration, and stand in various temporal relations to other objects. What appears before the mind when it represents something through sense is an object with spatiotemporal determinations, and insofar as that is the case, the spatiotemporal form of these representations corresponds to some determination of sensible objects.

Of course, this is not to say that time and space are *themselves* determinations of sensible objects. They are, instead, what *ground* those determinations. When the mind represents time and space independently of any sensible object, as it does through a pure intuition, the intentional content of the resulting cognition is some possible determination of sense—a certain shape or region of space that could be occupied by a sensible object. A pure intuition is given when the mind represents a region of space or time in abstraction of the sensual content therein—an act of abstraction performed

packs, or honours. Nor can we say that in this case the different numbers exist in the same thing side by side, as different colours do. I can point to the patch of each individual colour without saying a word, but I cannot in the same way point to the individual numbers. If I can call the same object red and green with equal right, it is a sure sign that the object named is not what really has the green colour; for that we must first get a surface which is green only. Similarly, an object to which I can ascribe different numbers with equal right is not what really has a number...The Number 1, on the other hand, or 100 or any other Number, cannot be said to belong to the pile of playing cards in its own right, but at most to belong to it in view of the way in which we have chosen to regard it; and even then not in such a way that we can simply assign the Number to it as a predicate. What we choose to call a complete pack is obviously an arbitrary decision, in which the pile of playing cards has no say. But it is when we examine the pile in the light of this decision, that we discover perhaps that we can call it two complete packs. Anyone who did not know what we call a complete pack would probably discover in the pile any other Number you like before hitting on two.

Like Kant, Frege maintains that numbers are neither (1) empirical concepts abstracted from what is given by the senses nor (2) determinations of sensible objects. In §26-27, pp. 33-38 Frege also denies that number is something subjective, since these concepts can be applied to the objects of sense even if they are not determinations of those objects. I don't mean to suggest that Frege and Kant have the same concept of number: for Kant, the concept of number is derived from the idea of unity, whereas Frege explicitly argues against this in *ibid*, §29-39, pp. 39-51, and instead identifies numbers as objects (as the extensions of certain concepts). Moreover, although both Kant and Frege maintain that the concept of number is intellectual in its origin, Kant denies that number can be applied to immaterial objects, in contrast to Frege who, as we saw above, allows that it can be applied to both material and immaterial things. But at the very least, what these passages show is that there do seem to be good reasons for denying that number concepts are acquired by abstraction from what is given by sense, or that they are determinations of those objects; and yet, it does seem that these concepts can also be legitimately applied to the objects of sense. The only question is: *how*?

through the logical use of the intellect—and the fact that a pure intuition is formed by abstracting whatever is given by sense indicates that spatiotemporal form was contained in that representation all along. Although the concepts of time and space, like the pure concepts of the intellect, have a similar origin in an innate activity of the mind, they differ in their resulting products, or in how these concepts are connected to sensible objects.

If this is correct, then whether a concept is intellectual or sensory does not ultimately depend upon whether that concept has its origin in some kind of cognitive activity performed by the mind: sensible objects only come to appear in time and space by virtue of the coordinating activity of the mind, and appearances only come to be represented through empirical concepts through acts of reflection, comparison and abstraction. Instead, whether a cognition is sensory or intellectual depends upon the connection that cognition has to the objects presented in experience; in particular, it depends on whether the intentional content of a representation is a determination of an object of sense, or grounds those determinations. When the mind represents something sensible through a concept, some of these concepts represent something contained in those objects as one of its determinations, whereas others are merely connected to those objects by virtue of the way the mind represents them. When representing the wax, the concepts of color, shape, size, texture, etc., are determinations contained in that object as parts to a whole; but when the mind represents the wax as a substance, or fire as the ground of warmth, those concepts do not represent determinations contained in those objects. Although the objects perceived through the senses can be thought of as substances or as causes, these concepts are not determinations contained in those objects in the way that color or softness are contained in the representation of the wax, they only belong to those objects by virtue of the way the mind represents them.

Although these remarks take us some way in explaining the distinction between sensory and intellectual cognition, we are not yet ready to explain the nature of that distinction in full detail. Before we do so, it will be useful to first elaborate further on Kant's conception of the real use of the intellect, specifically by focusing on how Kant uses the distinction between the real and logical use of the intellect to attack the approach to metaphysics found in the Wolffian school. It is to this that we now turn.

Section §2.3: Kant's Critique of the Wolffians

What appears to be indicated by the results obtained in section §2.2 is that Kant is only led to distinguish between the faculties of sense and intellect insofar as some of the concepts which the mind possesses are generated through a power of the intellect which is real, and not logical: were it not for the real use of the understanding, Kant would not distinguish between the faculties of sense and intellect. Kant himself notes this in the sections that follow his initial account of the intellect, where he argues that the failure to recognize the distinction between the real and logical use of the intellect is precisely what leads many philosophers to subsequently confuse the faculties of sense and intellect. Here Kant singles out the Wolffians in particular for criticism. Recall that for Wolff, the concepts that are formed when the mind first begins having sensory experiences are all

obscure; they are obscure since objects possess a number of characteristics which are not yet distinguished from one another when the mind first forms a concept of something by representing it through the senses. It is only after these concepts have been analyzed through the operations which are characteristic of the intellect that the various determinations of a thing are identified and distinguished, and the mind's concepts of those things become distinct. How confused or distinct a concept is depends, in turn, on how *many* of the various determinations of a thing have been identified and distinguished from one another: the more determinations contained in a thing which the mind does not distinguish, the more confusion there is in the mind's concept of that thing. And, since for Wolff the difference between intellectual and sensory cognition is based on the *amount* of confusion or distinctness in the concepts the mind has of the things it represents, the difference between the faculties of sense and intellect must be one of degree.

Kant's main objection to this account appears in the following passage.

From this one can see that the sensitive is poorly defined as that which is *more confusedly* cognised, and that which belongs to the understanding as that of which there is a *distinct* cognition. For these are only logical distinctions which *do not touch* at all the things *given*, which underlie every logical comparison. Thus, sensitive representations can be very distinct and representations which belong to the understanding can be extremely confused. We notice the first case in the paradigm of sensitive cognition, *geometry*, and the second case in the organon of everything which belongs to the understanding, *metaphysics*. And it is obvious how much effort is devoted by metaphysics to dispelling the clouds of confusion which darken the common understanding, although it is not always so happily successful as geometry is. Nonetheless, each and every one of these cognitions preserves the sign of its ancestry, so that those belonging to the first group, however distinct they be, are called sensitive because of their origin, while those belonging to the second group continue to belong to the understanding, even though they are confused. [Ak 2:394]

To begin, it will be useful to dispel one possible confusion about the argument in this passage. At first sight, Kant's objection appears to be based on the observation that certain concepts which are distinct are sensory whereas others that are confused are intellectual. Thus, on the one hand, certain concepts which belong to metaphysics are confused, since we do not, and perhaps cannot, adequately distinguish their various marks; on the other hand, there are other concepts that are sensory, such as those belonging to geometry, which are not confused since all the marks of those concepts are grasped by the mind. If that is the argument, then the reason why the distinction between intellectual and sensory cognition cannot be based on whether a concept is distinct or confused is because some sensory cognitions are distinct, whereas some intellectual cognitions are confused. But despite initial appearances this cannot be Kant's objection. As we have already seen, Wolff maintains that concepts only become distinct by means of analysis. For Wolff, *all* the mind's concepts are originally confused; but that doesn't mean that all concepts are sensory, it only means that they have not *yet* been made distinct. In that case, Wolff can

allow that the concepts of metaphysics are confused *prior* to analysis, but what matters is not whether some concept is *in fact* confused or distinct, but whether it can be *made* distinct. The fact that some of the concepts which belong to metaphysics are confused in some mind or other does not entail that those concepts are sensory, for it is only after the concepts given by the senses have been analyzed that they become concepts of the intellect. The observation that the concepts of metaphysics are often confused is thus irrelevant. And it would be equally irrelevant to object that every attempted analysis of these concepts has yet to give a distinct cognition of their content; even if the definitions one finds in Wolff and Baumgarten are inadequate, that does not mean that these concepts cannot in principle be made distinct, but only that the definitions given thus far have not yet managed to do so. Another related problem is that Kant appears to simply assume that geometrical concepts are sensory. But on what grounds? For Wolff, the concepts of geometry are paradigmatic examples of intellectual cognitions precisely *because* they are distinct. Kant cannot then reject Wolff's distinction between sense and intellect by simply *assuming* that these concepts are sensory, for that would be tantamount to assuming that the difference between sensory and intellectual cognitions is not based on whether these cognitions are distinct or confused, which is the very thing Kant is trying to show. If, then, Kant's argument is that geometrical concepts are distinct and yet sensory, then his argument is either circular, or he must have some other, independent criterion for distinguishing between cognitions of sense and intellect which *explains* why geometrical concepts are sensory rather than intellectual. But then what is that criterion? And why should Wolff accept it?

A closer reading of the passage reveals that Kant's objection to Wolff is based on the distinction between the real and logical use of the intellect. To begin, notice that the passage just cited immediately follows the section where Kant first introduces this distinction; hence, when Kant begins his critique of Wolff by writing that "From *this* one can see that the sensitive is poorly defined as...", the demonstrative is surely referring to that distinction. Likewise, Kant writes that the marks of confusion and distinctness are "only logical distinctions which *do not touch* at all the things *given*", for regardless as to how extensively a cognition has been analyzed through the understanding in its logical use, it always "preserves the sign of its ancestry" [ibid]. What is indicated by this remark is that the reason why Kant opposes Wolff's account is because it does not adequately account for (or even recognize) the different *origins* of our concepts; but, since the difference between the real and logical use of the intellect is based on the different ways in which the mind comes to acquire its concepts, it seems that Kant's criticism of Wolff's account of the distinction between sense and intellect is based on Wolff's failure to recognize a real use of the intellect.

For Kant, the concepts of metaphysics can only be formed through the real use of the intellect, but for Wolff these concepts are acquired in the same way as any other general concept, namely, through the logical use of the understanding, which abstracts these concepts from what is originally given by the senses. Throughout his textbooks on metaphysics, Wolff explains how the mind acquires the pure concepts of metaphysics by

appealing to the same acts of reflection, comparison and abstraction which are responsible for generating any general concept. General concepts are formed when the mind identifies the features which a number of particular things share in common and then abstracts away those which are different, and the mind is able to form ever more general concepts by abstracting more and more of the determinations from the sensible particulars originally represented through the senses. And the most general concepts of all are obtained, in turn, after the mind has abstracted a sufficiently large number of determinations. The pure concepts of metaphysics are thus acquired in the same way that empirical concepts are, the only difference is that the former require a great deal more abstraction than what is needed to obtain an empirical concept; but even so, the difference here only pertains to the *amount* of abstraction involved in acquiring them, which is a difference in degree rather than kind.²⁰⁷

But Kant explicitly denies that a concept belongs to the pure intellect by virtue of the amount of abstraction it involves; whether a concept is sensory or intellectual does not depend upon the *amount* of abstraction that is involved in forming that concept, for

²⁰⁷ For Wolff, *Psychologia Empirica*, §275 the intellect is the faculty for distinct representation, and the intellect is *pure* when there is nothing in the object cognized which is obscure, or, when the concept of that object is totally distinct (ibid, §313). But Wolff claims that the intellect is *never* pure, since this would require that what the mind cognizes is free of anything given by sense, imagination, or any of the lower faculties of thought (ibid, §314), and as “the *intellect* is never free from the senses and the imagination, consequently it is never entirely pure” (ibid, §315). Cf. DM, §282-86, esp. §285. For Wolff, the intellect is never pure since all our cognitions are always limited to what is given by sense, and the complexity of these objects is always too great for the mind to ever fully analyze. Note that a cognition is pure not because the content contains nothing sensible, but rather because all the marks of that thing have not been completely distinguished: for Wolff, the intellect is pure when the object cognized is totally distinct, not when the concept is of something completely devoid of sensory content. Cf. Baumgarten, *Metaphysica*, §634-637. Similarly, Baumgarten defines sensitive representations as those that are not distinct (ibid, §521), and notes that a cognition is more or less distinct depending on how many of the determinations of the thing are distinguished through attention and abstraction (ibid, §528-29). Sensitive cognition, which is of singular things (ibid, §534, §559, §561), is always obscure to some degree, for singular entities are wholly determinate and stand in a universal connection with everything else that exists, and this entails that there are always more determinations in these things than the mind could ever distinguish (ibid, §544, §570).

As we will see in §2.4 below, Leibniz’s account of the pure intellect is different from Wolff’s. Although Leibniz also believes that sensory cognitions are always confused, this does not lead him to deny that the intellect is ever pure, or that our cognitions cannot be made totally distinct. As Donald Rutherford, *Leibniz and the Rational Order of Nature*, pp. 79-90 notes, Leibniz maintains that the mind’s *sensory* perceptions will always be to some extent confused since they are composed of an infinite number of petite perceptions. The mind cannot identify and distinguish these perceptions since they occur beneath the threshold of our consciousness; moreover, since every sensory perception will contain an infinite number of petite perceptions, the mind will never be able to discern and distinguish each of the various determinations present in that thing. Since there will always be more things present than the mind could ever fully enumerate, the mind’s sensory perceptions can never be fully distinct, but must instead forever remain confused, at least to some degree. See Leibniz, *New Essays*, p. 53, 134, 161-62. But this does not mean that the intellect is never pure, for when an idea is one that has not been given by the senses, but has instead been generated by the mind itself, the idea is capable of being made completely distinct since it does not contain any sensory content. According to Rutherford, the only ideas that can be made distinct for Leibniz are those which are originally given by the intellect itself, examples of which include those belonging to mathematics and metaphysics.

even concepts which are formed after a great deal of abstraction will remain sensory so long as the content of that concept is derived from the senses.

Hence, even the most general empirical laws are nonetheless sensory; and the principles of sensitive form which are found in geometry (determinate relations in space), no matter how much the understanding may operate upon them by reasoning according to the rules of logic from what is sensitively given (by pure intuition), nonetheless do not cease to belong to the class of what is sensitive... Thus empirical concepts do not, in virtue of being raised to greater universality, become intellectual in the *real sense*, nor do they pass beyond the species of sensitive cognition; no matter how high they ascend by abstracting, they always remain sensitive. [Ak 2:393-394]

Kant's basic criticism of Wolff is that the pure concepts of ontology cannot be acquired through the operations characteristic of the logical use of the understanding. Through the logical use of the intellect the mind analyzes the objects presented by the senses by first identifying and then distinguishing each of the various determinations they contain, and then isolating each of those determinations in thought by abstracting one from another. But since the pure concepts of the understanding are devoid of sensory content, they are not contained in sensible particulars as parts (or constituent features) of those objects; and from this, it follows that these concepts cannot be obtained by abstracting or separating them out from the other qualities contained in a sensible particular since they aren't contained in those sensible objects to begin with. Recall once again Kant's distinction between the two senses of 'abstract'. To *abstract something* is to form a concept through a process of selective attention: the mind abstracts a concept of red by focusing exclusively upon the particular color of some red thing, such as this piece of red cloth, and then separating this particular quality in thought so as to consider it in isolation of the other qualities of the cloth that appear alongside it. In this case, the mind abstracts a sensible quality which is contained within a sensible particular, so that the resulting concept is also sensory. On the other hand, to *abstract from some things* is to think a pure concept of the intellect as it is in itself and independently of its relation to sensible particulars. The point of contrast between these two senses of abstraction has to do with whether or not the content that is abstracted from a given whole is a constituent part of the thing it is abstracted from: the first kind of abstraction involves separating distinct features that are presented alongside one another in the object of some cognition, while the second is what enables the mind to think a concept which is entirely devoid of sensible content and which is not contained in any sensible particular as one of its features.²⁰⁸ For

²⁰⁸ Wolff and his followers frequently describe abstraction as a faculty that enables the mind to separate in thought the determinations which are contained in a thing as parts to a whole. Thus, Baumgarten, *Metaphysica*, §625 writes of "a faculty of separating or abstracting the parts from the whole (§589), and since these reveal themselves in sensations, imaginations, and foresights, etc., exactly as their objects are related to my body." Cf. *ibid.* §529, §629-31. Similarly, Wolff, *Psychologia Empirica*, §282 writes that

If we consider that which is distinguished in the perception to be separated [*sejuncta*] from the thing, we are said to *abstract* [*abstrahere*]. Therefore, we attribute to the mind a *faculty of*

Kant, it is precisely because the pure concepts of the intellect are not constituent features of any sensible object, or contained in those objects as parts to a whole, which explains why they cannot be acquired by abstraction from what is given by sense.

Wolff's suggestion that these pure concepts are obtained by just abstracting more and more of the content presented by sense simply misses the point. As one ascends higher to ever more general concepts by abstracting more of the determinations that belong to something sensible, all one is doing is isolating more and more of the sensory content given by the senses; but one never obtains something non-sensory in this way, one only represents fewer and fewer of the sensory features that belong to a sensible object. The problem for Wolff, according to Kant, is that the mind will never come to form a concept of something non-sensory if all it is doing when forming a concept through abstraction is separating out the sensory determinations contained in a sensible object. If the object originally given by sense is just a kind of complex made up of a number of distinct sensory determinations, and the role of the intellect is to simply break down this complex into an ever-fewer number of marks by abstracting one determination from another, the content one is left with at each stage of abstraction will always remain something sensory. And nothing changes as the mind forms ever more general concepts through additional acts of abstraction: at each stage the concepts become more general, but the content of that representation, for all the abstraction involved in forming it, remains sensory so long as it is a part of the content of some sensible particular—something that is, in other words, a constituent feature of an object of sense and is contained in that object as a part to a whole. If each of the various determinations represented in a sensible object are all sensory, all that remains when the mind forms more and more general concepts through additional acts of abstraction will also still be something sensory. The only difference is that the *number* of marks contained in each of those concepts becomes less and less the more general the representation, but the *kind* of marks which are represented does not change: although the content of a representation formed through abstraction will have fewer determinations than the content from which it was abstracted at an earlier stage of analysis, the content of that representation does not thereby become non-sensory, for if all of those determinations are sensory, the intentional content of the representation remains sensory as well, no matter how general it might be.²⁰⁹ But since the pure concepts of the intellect are not sensory and are not

abstracting, insofar as we represent [*spectamus*] those things that belong to the thing perceived to be separated from it. (My translation).

²⁰⁹ The reason why Wolff assumes that the mind can acquire the pure concepts of ontology in the same way that it forms any other general concept is presumably because these concepts are supposed to be common to every possible being. That means that these concepts must be, in some sense or other, connected to the objects perceived by the senses. The important thing to note, however, is that there are different ways of explaining this connection. On Wolff's view, sensory phenomena exemplify the content contained in these pure concepts since this intelligible content is contained in the objects perceived through the senses as their determinations. And this purely intelligible content is what belongs to those objects as they are in themselves, since it is not subject to the subjective input that comes from the subject when it perceives something through the senses. This is why Wolff maintains that the objects of sense are revealed to be confused representations of things as they are in themselves once the intellect extracts these intelligible marks through analysis. But as we have already seen, although Kant surely agrees that there is a connection

contained in sensible particulars, they cannot be “pulled out” or “extracted” from those sensible particulars in the way the mind abstracts the other qualities when forming general concepts through the logical use of the intellect. One cannot obtain, for example, a concept of possibility by simply separating it out from the other features contained in a sensible particular, for the content of that concept is not contained in those particulars as one of their sensible determinations: possibility is not something sensed in an object in the way that its shade of color, or kind of color, etc., is sensed. If it were, one would expect that same mark to be contained in things that are non-sensible—and to find that *same* feature again when representing a *possible* immaterial substance, or a *possible* thought of an immaterial substance, etc.—but that, of course, is impossible since nothing sensible can be contained in something non-sensible, by definition. Likewise, one does not form a concept of substance by separating it from the other qualities of an object, as though it were some element that appears alongside those qualities in the same way that a hue or tone appears alongside a color: the substance is the thing which has and underlies those qualities, it isn’t itself one sensory quality coexisting alongside of the others.²¹⁰ Nor, for

here, it isn’t one of containment. Although sensible objects can be represented through these concepts, that does not mean that this purely intelligible content is contained in the things represented by the senses as one of their constituent parts. Sensible particulars can be represented through those concepts, in the sense that the mind can think of something *as* a substance (a concrete particular which underlies the sensible qualities and which endures through time), or *as* something possible (as something whose marks are not self-contradictory), but these concepts are not contained in those particulars; instead, they only come to belong to the representation of those objects through the mediation of the mind’s mental activity.

²¹⁰ Wolff develops his account of substance in *Ontologia*, §768-772. Although Wolff agrees with the common view that substance is that which endures through change (ibid, §768) and is that in which determinations inhere (ibid, §769-770), he re-interprets the meaning of these claims so as to avoid what he believes is the obscurity which the notion of substance has acquired in the hands of the Scholastics. Wolff adopts what he calls the Cartesian notion of substance, which defines substance as “a thing which exists in such a way as to depend on no other thing for its existence” (Descartes, *Principles of Philosophy* (Cambridge: Cambridge University Press, 1984-91, 3 vols), Part I, §51 [AT VIII A 24; CSM I, 210]). But for Wolff, when properly understood, all this definition entails is that a substance should be identified with the essential determinations of a thing. Since the essence of a thing is invariable, a substance endures through time so long as it continues to have the same essential determinations; moreover, the essential determinations are those which all the other determinations of a thing depend upon and inhere in—since they are all determinates of the determinable content which constitutes the essence—whereas the essence is that determination which does not depend upon any other determination. In this way, Wolff comes to identify substance as the most determinable property of a thing: a substance is that determination, or set of determinations, of a thing which is not a determinate of some other determinable, it is that which grounds all the other determinations of a thing, but is not itself grounded by any other determination. This is not totally foreign to Descartes’ notion of substance: for Descartes, extension is the essence of body since every other determination a body has (e.g., shape, size, motion, etc.,) all depend upon extension and are just determinations of extension in general; likewise, thought is the essence of mind, since every mental state (e.g., a feeling, judgment, conception, etc.,) is a determinate kind of thought. Of course, Wolff repeatedly stresses that Descartes was mistaken to identify the essence of body with extension and mind with thought—opting instead to identify the latter with representation and the former with composition, from which extension results—but the basic idea that some of the determinations of a thing are the ultimate grounds of the others, and that these fundamental determinations are what constitute the nature of substance, is the key idea which Wolff inherits from Descartes. The problem, however, is that Wolff then appears to be guilty of confusing a fundamental determination for a *subject* of determinations. This is noted by John Burns, *Dynamism in the Cosmology of Christian Wolff: A Study in Pre-Critical Rationalism* (New York: Exposition Press, 1966), pp. 29-38, who observes that since “a being cannot exist if it is assumed to be devoid of all determinations, Wolff contends that his “essentials” constitute the *subject* because prior to

that matter, can one say that the concept of substance is formed by abstracting away *all* the qualities of a sensible object. Although the concept of substance refers to what underlies those qualities, and is something distinct from all of them together, the concept of substance isn't given by simply cancelling out, or peeling away, all the sensible qualities of a thing. Even if one abstracts all the qualities that belong to a sensible object, that too does not suffice for a concept of substance, for this would be the same as simply eliminating that object in thought altogether and forming a concept of nothing. But this would never give the mind a concept of anything which has any *positive* content of its own: the concept the mind forms by eliminating all the qualities is just the concept of nothing, not the concept of an entity which endures through time and which underlies and has all of those qualities.²¹¹ When one represents a sensible particular *as* a substance, one thinks that thing through a concept which does not contain anything sensory as a part of its content, and since the content of that concept is devoid of anything sensory, it cannot be formed by isolating one sensory mark from another, or by eliminating all those marks together. Instead, the concept is generated through the real use of the intellect, which

them nothing can be conceived in a being" (ibid, p. 33); for Wolff, a substance is a "constant, fundamental determination; Hence, substance, for Wolff, does not involve existence, but only essence, and this essence in turn is reducible to an observable determination" (ibid, p. 37). But if a substance is just a fundamental determination which can be observed through sense, then the concept of substance is, indeed, formed by abstracting that determination from the others, and if these determinations are sensible, then so too is the concept of substance. As a result, Wolff "confuses substance...with an observable determination contained in it" (ibid, p. 38). Wolff's notion of substance is thus quite different from the one adopted by Leibniz and Kant, both of whom identify substance as the *common* subject of different predicates; when distinct determinations are represented as determinations of one and the same thing, the concept of substance corresponds to that which unifies those determinations, not something which is *itself* a determination or set of determinations.

²¹¹ This is assuming, of course, that the idea does indeed have some positive content, contrary to Hume and Berkeley, who claim that the idea of substance is an empty concept devoid of any content at all, and so is, in fact, no different from a concept of nothing. Interestingly enough, like Berkeley and Hume, Wolff, *Ontologia*, §773, maintains that this concept of substance is fictive.

The common man's representation of substance is of something imaginary. This is explained from the way in which that concept is obtained. For if we, e.g., perceive that a stone is sometimes warm, sometimes cold, but that what we perceive by sight remains the same in both circumstances, then we consider the stone as the recipient of warmth and cold—and we say in consideration to this, that warmth and cold inhere in it. We further distinguish by touch the heaviness and hardness...And so we regard the heaviness and the hardness, just like the warmth and the cold, as something which inheres in the stone, and the stone itself as the container. Before long everything which we perceive in a body becomes something which inheres in it...But since that cannot be nothing, in which all of this inheres, we must assume something which does not inhere in anything else, but in which the accidents inhere. The layman understands as substance that which should support everything which we perceive in a thing. If we now ask, which characteristics this subject has, we find there are none, since all determinations have been removed from it and placed under the accidents. All the attention in the world will not discover anything in such a subject, it cannot retain—without contradiction—any other characteristics if they have all been placed under the accidents. And so we become confused in our thoughts, and all the more so, the more we try to grasp something of that subject. Therefore we must say, that we do not cognize the substance of things. But who does not recognize that something has been invented here which does not hold true. We fabricate a container of characteristics, which should also remain after all the characteristics have been removed, in order to grasp with a picture what eludes the eyes. This representation of substance is therefore imaginary, and the substance, as it is commonly represented, is an imaginary entity [*ens imaginarium*]. (My translation)

represents distinct sensible qualities as the qualities *of* a single object, and the changing qualities that appear at different times *as* different states of one and the same thing.

The other remarks Kant directs against Wolff in the passage cited at the start of this section can all be explained once it is recognized that Kant's main criticism is that Wolff does not recognize the existence of this power the mind has to generate mental content through its own inner activity. Thus, it is precisely because Wolff assumes that all the concepts the mind has are given through one and the same activity of the intellect—the act of identifying, distinguishing, and comparing the determinations of the objects perceived through the senses—that he is forced to distinguish between sense and intellect according to whether a concept is distinct or confused, general or particular, or, in other words, according to the *amount* of abstraction involved in a given cognition. This is a difference in degree, not a difference in kind, and that is why Kant accuses Wolff of having misconstrued the distinction between these forms of cognition as merely logical in nature, and of having “completely abolished...the discussion of the character of phenomena and noumena” [Ak 2:395].²¹² In turn, the reason why Kant claims that geometrical concepts must be sensory is because these concepts always refer to constituent features of sensible objects, such as their shape, size, extension, etc. The concepts of geometry are all sensory since shape, size, and extension are all features of sensible objects: if one represents something as a figure bounded by right-lines, each of these marks is one of the features of the object sensed; and if one proceeds to represent that object through a more general concept—for example, as right-lined triangle by leaving out the species of the lines, or as a right-lined figure by leaving out the number of lines, or again, as a plane figure by omitting both the species and number of sides—each of the marks still refer to something contained in that object as one of its determinations. Each of the more general concepts formed through abstraction remain sensory since their content always refers to a constituent feature of the sensible object from which they were originally abstracted.²¹³

Earlier, we identified Wolff as one major proponent of the view that the cognitions of sense are reducible to those of the intellect. What this suggests, of course, is that Wolff's position is completely antithetical to those theorists—such as Hume, Condillac, and the French Materialists—who upheld the opposing view that the faculty of intellect is instead reducible to that of sense. But in spite of appearances, Wolff's account of the distinction between sense and intellect is not genuinely incompatible with these views. For Wolff, the cognitions of sense are reducible to the intellect since the intellect is responsible for

²¹² Noumena are supposed to be non-sensory, immaterial entities, whereas phenomena are entities which are concrete and sensory. But if the concepts used to represent noumena are merely abstractions from sense, then these non-sensory, immaterial entities no longer differ in kind from the objects of sense since they are contained in them as one of their parts. In contrast, for Kant, there is an unbridgeable gap between the noumenal and the phenomenal which is based on a difference in the *nature* of these entities. We will return to this issue in Ch. 5, when we compare Wolff's account of the distinction between the sensible and intelligible worlds with the one Kant advances in ID.

²¹³ Kant's criticism of the Wolffian distinction between sense and intellect in A42-A44/B59-62 of the CPR runs on all fours with the argument that appears in ID. As in ID, in this passage Kant insists that intellectual cognitions are different in *content* from those of sense, and it is this difference which grounds the distinction between these two faculties. Cf. *Metaphysics L1*, Ak 28:229-230.

making those cognitions distinct through acts of reflection, comparison and abstraction; and, cognitions become distinct when the different determinations of the objects sensed have all been completely distinguished from one another. But many of the theorists who upheld the opposing view that the cognitions of the intellect are reducible to sense never *denied* that the mind has a power to reflect, compare and abstract certain concepts, or to distinguish the various determinations of the things represented through sense. For these theorists, the relevant question is whether the *content* of what the mind represents is always traceable to something originally given by sensation, not on whether those contents can be fully analyzed into their different marks. These are simply different criteria, and to that extent, there *need* not be any genuine disagreement here. It is perfectly consistent to say that, in one sense, the cognitions of sense are reducible to those of the intellect, since the mind is capable, in principle, of representing what it senses distinctly, and that in another sense the cognitions of the intellect are reducible to those of sense since the *content* of every genuine concept in our possession corresponds to something which was originally given by sense. The problem for Wolff is that he assumes that many of the concepts in our possession have a certain content which is non-sensory. But, if Kant is correct, Wolff cannot explain how the mind acquires such concepts. To the extent that Wolff only recognizes a logical use of the intellect, and insists that every concept is originally given by sense, he has no explanation for how the mind could have acquired these concepts. All the mind is doing when forming concepts through the logical use of the intellect is separating out the sensory determinations contained in a sensible object; but one never obtains a representation of something non-sensory in this way, for one cannot separate out some non-sensory content from a whole, all of whose parts are sensory. Nor does one transform something sensory into something non-sensory by simply considering fewer and fewer determinations of something sensible. But since the mind does possess certain pure concepts, it follows that there must also be a faculty of the intellect, distinct from the merely logical, which is responsible for producing them, and hence, that Wolff's account of the intellect must be inadequate.²¹⁴

Section §2.4: Leibniz's Account of the Intellect in the New Essays

Although Kant accuses Wolff and his followers of having failed to adequately distinguish between the faculties of sense and intellect, it is less than clear whether Kant thinks that the same criticism also applies to Leibniz. Admittedly, it is quite tempting to assume as much, for even if Kant does not subject Leibniz to this criticism in the *Dissertation*, he does criticize Leibniz along these lines in the CPR.²¹⁵ And yet, there also

²¹⁴ It has recently come to my attention that Brian Chance, "Pure Understanding, the Categories, and Kant's Critique of Wolff", *Freedom and Spontaneity in Kant* (Cambridge: Cambridge University Press, 1998), pp. 30-47 defends an interpretation of Kant's account of intellect which is similar to my own. Chance recognizes that Wolff endorsed a version of concept empiricism, that the understanding is never pure for Wolff, and that Kant rejects this account in ID by arguing that the intellect is itself a source of concepts which has no relation to the things sensed. Chance also recognizes that this leaves Kant with the problem of explaining how the pure concepts of the intellect can relate to the objects of sense. While there are certain details of Chance's reconstruction I disagree with, his basic account agrees with my own.

²¹⁵ A44/B61-2; A264/B320; A270-1/B326-7.

appear to be good reasons to doubt whether this is actually the case. In the first place, even if Kant believed that Leibniz conflated the faculties of intellect and sense, the accuracy of this charge has been challenged by many commentators who argue that Leibniz, unlike Wolff and his successors, *did* in fact recognize that sense and intellect are distinct faculties of the mind.²¹⁶ Moreover, a careful investigation of the *New Essays* reveals that Leibniz's account of these faculties is remarkably similar to Kant's, so much so that it is hard to believe that Kant could have failed to recognize this given that he was well acquainted with the *New Essays* and appears to have been deeply influenced by it. Throughout the *New Essays*, Leibniz claims that there are certain ideas which must be innate to the mind since they could not have been acquired by abstraction from what is given through sensory experience. The examples he gives include the ideas of "being, substance, one, same, cause, perception, reasoning",²¹⁷ as well as other common notions which are involved in our all thoughts. These ideas cannot be acquired from sensory experience for the ideas of "substance", "being", "one", etc., cannot, by their very nature, *touch* the senses.²¹⁸ Nowhere does Leibniz claim that the difference between the mind's sensory and intellectual ideas is one of degree, or that one can be reduced to the other: for Leibniz, as for Kant, the faculties of sense and intellect differ in kind. Moreover, both are led to distinguish between these faculties for the same reasons: the ideas that belong to the intellect are distinguished from those that belong to the faculty of sense in terms of their origins, for whereas the latter are passively received through the senses, the former are actively generated by the mind itself; they are also distinguished in terms of their content, for sensory ideas are concrete and particular, whereas intellectual ideas are abstract and general. And there are still further similarities. Like Kant, Leibniz maintains that the ideas generated by the intellect exist in the mind prior to experience, but *only* in the sense that the mind has an innate disposition to form them upon the occasion of experience.²¹⁹ Both Kant and Leibniz also give similar accounts of the role sensory experience plays in the formation of these concepts. Although the concepts generated through the intellect are innate, the mind only becomes consciously aware of them upon the occasion of certain sensory experiences, and, unless the senses were first stimulated the mind could never come to form these ideas.²²⁰ But although sensory experience may be a necessary condition for forming these ideas, in the sense that sensory stimulation is

²¹⁶ As Donald Rutherford, *Leibniz and the Rational Order of Nature*, p. 82, notes

Nowhere is there any suggestion by Leibniz that sensations are just confused thoughts, or that distinct thoughts originally arise as the result of analyzing our sensory perceptions. Nor is there any indication that confused thoughts (or sensations) can in principle be rendered wholly distinct through analysis. Between sensations and confused thoughts, on the one hand, and distinct intellectual thoughts, on the other, there is a difference in kind founded on a difference in origin.

For further discussion, see Donald Rutherford, *Leibniz and the Rational Order of Nature*, pp. 79-90 and Catherine Wilson, *Leibniz's Metaphysics: A Historical and Comparative Study*, pp. 315-318.

²¹⁷ Leibniz, *New Essays*, p. 111; cf. 49, 51, 81, 102, 105, 119, 382, 392.

²¹⁸ This expression (i.e., objects "touch" the senses) is used by both Leibniz, *New Essays*, p. 115, 116 and Kant, Ak 2:394, 397; both also make the same point in terms of objects *striking* the senses, as in Ak 2:393, 326 & Leibniz, *New Essays*, p. 115, 131, 154.

²¹⁹ See §2.2 above for further elaboration.

²²⁰ *Ibid* p. 49, 77-78, 79-80, 81, 110.

what first causes the mind to become explicitly aware of them, it is not itself sufficient, for the ideas represented through the intellect are general and abstract, whereas everything given by the senses is singular and concrete, and so, the content present in intellectual ideas could never be derived from anything given by the senses.²²¹ Instead, Leibniz insists that they are formed when the mind looks inwards upon itself and reflects on its own nature as a thinking thing. And here, once again, Leibniz and Kant are in agreement, for as we saw above, Kant also maintains that the ideas that belong to the real intellect are generated by reflecting on our own nature as thinking substances.

These similarities make it likely that Kant's distinction between sense and intellect was at least influenced by, if not derived from, Leibniz's discussion of these faculties in the *New Essays*. Given these similarities, a general overview of Leibniz's account of the intellect in the *New Essays* will be useful for the purpose of shedding further light on Kant's own views. To better understand Leibniz's account of the ideas that belong to the intellect, we will take a close look at one of Leibniz's more detailed discussions as to how these ideas are formed, as well as how the mind conceives of them in thought. Perhaps the most notable example is Leibniz's discussion of the idea of the infinite, as it applies to our ideas of time and space. What is most interesting about this example is that Kant himself uses it at the start of ID to motivate his own distinction between sense and intellect. As we will see in a moment, much of what Kant says about the nature of this concept was likely derived from Leibniz's own account in the *New Essays*, and so it will be useful to carefully reflect on the details of Leibniz's discussion so as to bring these similarities to the forefront.

Leibniz develops his account by way of contrast with Locke, who proposed that the ideas of infinite time and space are acquired from experience when the mind performs certain operations on the simple ideas given by sensation. According to Locke, the mind forms the ideas of immensity and eternity by first acquiring ideas of certain finite quantities, which it does by perceiving, for example, a finite length of extension, like an inch or a foot, or a succession of ideas measured by a finite period of time, such as a minute or an hour. Each of these ideas are given directly through the senses since they

²²¹ For Leibniz, one reason for thinking that an idea is innate is that there is no way to explain how the mind could have acquired it through the senses. At this point it is important to introduce a clarification for, as Leibniz occasionally notes (*New Essays*, pp. 74-75 & 110-111), since there is no causal interaction between minds and bodies it follows that, strictly speaking, no idea can be given through the senses, and so every idea must be innate. But the problem is that this argument doesn't provide us with any reason to distinguish between sensory ideas like red, sweet, or any other paradigmatically empirical concept, and purely abstract ideas like being, substance, cause, etc., for the argument from the absence of inter-substantial causal interaction entails that the former are just as innate as the later. But although this is *one* reason for innatism, it isn't Leibniz's main reason; as we will see later, his main reason is based on a difference between the *content* of the ideas of sense and intellect. This difference in content is precisely what explains why ideas of the intellect could not be given to the mind through sensory affection, *even if* substances could causally interact with one another, for ideas of the intellect are incapable of "touching" the senses by their very *nature*. Leibniz's case for innatism does not, then, ultimately depend on the doctrine of pre-established harmony; indeed, Leibniz is even willing to acknowledge that there is a sense in which bodies can be described as the partial causes of certain thoughts, so that one may, speaking with the vulgar, allow that sensory ideas are produced when the sense organs are affected by other bodies. Leibniz, *New Essays*, p. 74.

are simple modes of bodies. Once the mind has acquired these ideas it can then proceed to form ideas of ever greater quantities by repeating the ideas it has of finite quantities which are all of the same sort and then joining those ideas together in thought. So, once the mind has an idea of a foot, it can repeat that same idea in thought by forming the idea of another foot, and it can then add this idea to the original foot to form the idea of a new quantity larger than the first. The idea of infinite space, or immensity, is formed once the mind recognizes that it can continue to form ideas of ever larger quantities by repeating this process indefinitely. The idea of infinite time is formed in much the same way.²²²

Leibniz claims that Locke's account is circular: the mind cannot acquire the ideas of eternity and immensity by recognizing, through experience, that it can enlarge the ideas it has of finite quantities of extension and duration without end, for the mind could never understand that it can enlarge these ideas without end unless it already had the very concepts in question.

But to derive the notion of *eternity* from this we must also conceive that the same principle applies at every stage, letting one go a stage further. It is this thought of principles which yields the notion of the infinite, or the indefinite, in possible progressions. Thus the senses unaided cannot enable us to form these notions. Ultimately one can say that the idea of the *absolute* is, in the nature of things, prior to that of the *limits* which we contribute, but we come to notice the former only by starting with whatever is limited and strikes our senses.

And again,

It is worth adding that it is because the same principle can be seen to apply at every stage. Let us take a straight line, and extend it to double its original length. It is clear that the second line, being perfectly similar to the first, can be doubled in its turn to yield a third line which is also similar to the preceding ones; and since the same principle is always applicable, it is impossible that we should ever be brought to a halt; and so the line can be lengthened to infinity. Accordingly, the thought of the infinite comes from the thought of likeness, or of the same principle, and it has the same origin as do universal necessary truths. That shows how our ability to carry through the conception of this idea comes from something within us, and could not come from sense-experience; just as necessary truths could not be proved by induction or through the senses. The idea of the absolute is internal to us, as is that of being...²²³

According to Locke, the mind is supposed to form the ideas of immensity and eternity once it *recognizes* that it can continue enlarging the ideas it has of finite lengths of time and space without end. But what, Leibniz asks, is the recognition of this fact based on? It cannot be based on anything given by the senses alone, or justified by induction from past

²²² Locke, *An Essay Concerning Human Understanding* (Oxford: Oxford University Press, 1975), II.xvii.1-3. I will use upper case Roman numerals to refer to the four books of *the Essay*, lower case Roman numerals to refer to chapters, and Arabic numerals to the paragraphs.

²²³ Leibniz, *New Essays*, p. 154 & 158.

experience, for even if the mind has discovered that it has always been able to continue forming ideas of ever larger quantities up to some given point, what gives it any assurance that it will be able to continue doing so from that point onwards? What, in other words, grounds the inference that starts from the observation that the mind has always been able to form ever larger ideas up to a certain point, to the further claim that it will necessarily be able to continue doing so ever after without end?²²⁴ According to Leibniz, sensory experience alone could never provide the mind with the understanding required to recognize the truth of this principle; only reason could provide the mind with the kind of justification required to understand that it will always be able to continue enlarging the ideas it has of finite quantities, something which the mind understands independently of the experience of having actually constructed such a series in thought. From this, Leibniz concludes that Locke's account is mistaken: if understanding this principle is required for forming an idea of the infinite, and sensory experience cannot provide the mind with that understanding, then that idea cannot be acquired from sensory experience.²²⁵ Though it is not entirely clear why Leibniz thinks there is such a tight connection between the principle that the mind can enlarge the ideas it has of finite quantities *ad infinitum*, and the idea of the infinite, presumably what he has in mind is that the infinite *just is* the idea of an endless series, so that, if the mind understands that a series of finite quantities can

²²⁴ This is an especially pertinent question for Locke, who recognizes that the mind can only continue forming ideas of ever larger quantities before they become too large to be framed in thought. But if there are certain subjective limitations as to how large of a quantity the mind can form an idea of, as Locke himself admits, then on what grounds does the mind recognize that the ideas it forms of finite quantities can, in fact, continue to be enlarged without limit? Why does the mind, on Locke's view, take the psychological inability to continue framing ideas of ever larger quantities as a subjective limitation of the mind rather than an objective limitation in the objects themselves?

²²⁵ Leibniz writes that the recognition of this fact requires that one understand a certain *principle*. In order to illustrate what Leibniz has in mind here, consider Locke's example of how the mind forms an idea of infinite extension by starting with the idea of straight line and then extending it by adding another which is perfectly similar to the first. According to Leibniz, the only way the mind will be able to form an idea of infinite extension on the basis of this example is if it recognizes the pattern involved at each stage of the process of enlarging a straight line in thought. In other words, if we start with the idea of a straight line and then extend it by adding another which is perfectly similar to the first, and then continue further by adding another line-segment to that one, the reason we recognize that this line can be extended in this way, and indeed extended *ad infinitum*, is because the mind recognizes that the act of doubling a line segment at the first stage is no different, in kind, from the act of doubling that line at the next stage. At each stage, the mind is simply repeating one and the same process—each additional act of extending the line in thought involves nothing more than a particular application of one and the same underlying principle. There is thus a certain principle that is being applied at each stage of this process and, for Leibniz, it is only by virtue of grasping the truth of this abstract principle (i.e., one can always double the length of a line-segment) which enables the mind to grasp the more particular truths (i.e., *this* line segment can be doubled again) which form the starting point for Locke's account. Grasping this principle is also, in turn, what is presupposed for recognizing the fact that this process can be continued *ad infinitum*. And, since this is what appears to be required for forming an idea of infinite extension, it follows that it is only by grasping this principle that the mind is able to form that idea. In addition, note that although the mind can only form an idea of the infinite by grasping this principle, Leibniz can still allow that this recognition might be triggered by first observing particular examples of the sort which Locke gives. The idea of the infinite is innate, but certain sensory experiences might be required before the mind becomes explicitly aware of this idea. The crucial point for Leibniz is just that, although these particular sensory experiences might be required to bring that latent idea explicitly to consciousness, they do not themselves explain how the mind first obtained that idea.

be enlarged endlessly, then the mind must also have an idea of the infinite since that principle is just a way of formulating or defining the very idea in question; the idea of the infinite is thus contained in the very principle which Locke appeals to in order to explain how the mind forms an idea of the infinite, and that is why that principle cannot be understood unless the mind already has an idea of the infinite, for understanding that principle is part and parcel of having that idea.²²⁶

With this in place, we may now turn to another question which is important for understanding Leibniz's conception of the ideas that belong to the intellect: namely, what is the *content* of this idea? Or, in other words, what is it that is before the mind, so to speak, when it conceives or apprehends the infinite through the intellect? Locke and Leibniz give different answers to this question. After explaining how the mind forms an idea of infinite space, Locke then distinguishes between, on the one hand, the "idea of the infinity of space", and "the idea of a space infinite" on the other, which he also refers to as the positive idea of the infinite. The first is nothing but an idea of the mind's power to continue adding the ideas of units to any finite length without end; the second is the idea of what the mind would perceive if the process of adding together our ideas of finite quantities were ever completed, or, what the mind would *see* if it could view all these units existing together all at once as a single whole. Although Locke grants that we have an idea of the infinity of space, he denies that we have any idea of infinite space: the mind could never represent all these parts existing together as an infinite whole, for no matter how large of an extensive magnitude we imagine, there will always be some other idea, larger than that one, which better approximates the infinite.²²⁷ Here Leibniz once again disagrees with Locke. The only reason Locke gives for denying that the mind has a positive idea of the infinite is that it cannot imagine an infinite whole in thought. But this, Leibniz claims, is irrelevant: in order to conceive of the infinite it is not necessary that the mind should be capable of representing infinite wholes through the imagination, for this is to confuse what is involved in having a distinct idea with forming an image in thought.

There reigns here that same confusion of the image with the idea. We have a 'comprehensive', i.e., accurate, idea of eternity, since we have the definition of it, although we have no image of it at all. But ideas of infinities are not formed by the assembling of 'parts'; and the mistakes people make when reasoning about the infinite does not arise from their having no image of it.²²⁸

Leibniz's point here is that although the mind cannot imagine an infinite whole, that does not mean the mind does not have a positive idea of the infinite; it only means that the faculty through which the mind represents or conceives of the infinite is not the same as the faculty used to form an image. The distinction which Leibniz is alluding to here is explained in more detail a bit later in the context of his disagreement with Locke over the nature of the mind's ideas of certain geometrical figures. The idea of a chiliagon is the idea

²²⁶ There are a number of questions one might ask about this argument, but for reasons of space I will leave these aside.

²²⁷ Locke, *Essay*, II.xvii.13-21.

²²⁸ Leibniz, *New Essays*, p. 262.

of a figure with a thousand sides and, according to Locke, the mind's idea of a chiliagon must be confused since it is impossible for the mind to clearly imagine a figure with a thousand sides. But Leibniz does not think that the mind's inability to form a clear image of a chiliagon gives us any reason for denying that the mind has a distinct idea of that figure. According to Leibniz, the mind must have a distinct idea of chiliagons since it can demonstrate various truths about such figures, truths which the mind could not understand unless it had an idea of what those truths are about; and, since these truths are clearly and distinctly understood, the ideas must also be clear and distinct. For Leibniz, the fact that the mind cannot picture this figure in thought is irrelevant, for the only thing this implies is that having an idea of a chiliagon is not the same as forming an image of one: when the mind thinks of a chiliagon, and reasons about its properties, it does not do so by imagining a thousand-sided figure, for not only is that impossible, it is also unnecessary. And Leibniz thinks this point generalizes for other ideas the mind has. That the mind has a distinct idea of the infinite follows from the fact that the infinite can be defined and that there are also a number of truths which can be demonstrated about the infinite. And, in the same way that the mind can have an idea of a chiliagon even if it cannot picture it in the imagination, all that is required for having a positive idea of the infinite is that the mind can conceive of it through an idea that is clear and distinct. The mind's idea of the infinite is no more identical to an image of an infinite whole, than the idea of a chiliagon is the same as an image of a thousand-sided figure.²²⁹

Yet this explanation does not really indicate what the positive idea of the infinite consists in; at most, it only explains what the distinct idea of the infinite is *not* (i.e., it is not the idea of an image we picture in thought), without telling us what the content of that idea is in any positive sense. Leibniz's example of the chiliagon is obviously taken from Descartes. Both use the example to illustrate the same point: namely, that entities are apprehended through a faculty of the mind which is distinct from the power the mind has to picture something in the imagination. In order to better understand just what the intentional content of these ideas consists in, it will be useful at this point to give a brief overview of what Descartes has to say about this example. Indeed, Descartes' account of the faculties of sense, imagination and intellect in the *Meditations* forms the starting point for most discussions of the mind's various faculties in the early-modern period, and so a brief overview of Descartes' reflections on these matters will provide some of the necessary background required for understanding Leibniz's own account of the intellect. According to Descartes, the way to discover what kinds of faculties the mind has is by first making an inventory of the various kinds of ideas it has. The first class of ideas are those perceived by the senses, and these include the ideas of particular sensible qualities like colors, sounds, smells, etc., or the sensations we have of our own inner states, such as the feelings of pleasure and pain, hunger, sadness, etc. The capacity of the mind to form these ideas when affected by objects is the faculty of sense. A second class of ideas, distinct from the first, are the ideas the mind forms when it imagines something which is not present but which it formerly sensed, like the image of a color, or the memory of a previously

²²⁹ Leibniz, *New Essays*, pp. 261-263.

experienced pain. This power of the mind is called the faculty of imagination. A third class of ideas are those which belong to the faculty of intellect. These are generally characterized negatively as ideas which are “not concerned with any images”.²³⁰

The difference between the ideas of the intellect and those of the imagination and senses is one of the main themes of the *Meditations*. The example of the chiliagon is but one example used to show that the faculties of intellect and imagination must be distinct: since the mind admittedly has an idea of the chiliagon, but can neither sense nor imagine this figure, it follows that the faculty which enables the mind to represent this figure must be distinct from the faculties of sense and imagination. However, one problem with Descartes discussion of this example, as well as his initial characterization of the ideas of the intellect as those which are “not concerned with any images” (ibid), is that it is purely negative: it only tells us what the idea of a chiliagon is *not*, without telling us what the idea is in any positive sense. Fortunately, one can get a better grasp of what these ideas are by looking at the Fifth Meditation, where Descartes tells us that the ideas which belong to the intellect are those which refer to things that have “true and immutable essences.” The examples he gives include our ideas of geometrical figures, specifically the general ideas the mind has of those features which are common to every figure of a given type. For example, the true and immutable essence of triangularity is that which is common to all triangles, it is the set of features which make some particular thing a triangle. The idea of the essence of triangularity is, in turn, just the idea of that which all triangles share in common. As with the idea of a chiliagon, Descartes claims that we must have an idea of the essence of triangularity since there are items of propositional knowledge the mind has which are true of all triangles in general. But this idea, Descartes claims, cannot correspond to any image of a triangle, nor, for that matter, is it identical with any of the ideas the mind has of the triangles perceived through the senses. The triangles pictured in the imagination, or perceived through the senses, are all singular entities which are fully determinate with respect to all their properties: when the mind imagines or senses a triangle, the idea is of something particular and determinate, but the idea of triangularity refers to what all triangles share in common with one another, the content of that idea is something general and indeterminate rather than determinate and particular. For Descartes, this difference in content is what entails that the mind’s idea of triangularity is not identical to the idea of any triangle which it senses or imagines, and that the mind does not conceive of triangularity by merely sensing or imagining some triangle. When conceiving of the form of triangularity, the intentional content of that idea will only include those features which all triangles share in common with one another; it will also, as a result, *exclude* any features which are unique to some particular triangle. Thus, the idea of triangularity will refer to something that is three-sided, but the content of that idea will not be three-sided in any particular way, for there is no one way to have three-sides which every triangle must have. The intentional content of that idea cannot, then, be *identified* with any image of a particular triangle, for there will always be features peculiar to the latter which are not contained in the former. Every triangle we imagine or sense

²³⁰ Descartes, *Comments on a Certain Broadsheet*, AT VIII B 364; CSM I, p. 307.

will have a particular size and shape, it will be either, for example, equilateral, isosceles or scalene, and so it will also have certain features which other triangles lack, since not every triangle will have the same features as this one; likewise, no image can be, for example, both equilateral and scalene, since the properties that make a triangle scalene are incompatible with the properties of an equilateral triangle, and so, every triangle we imagine or sense will lack certain features that other triangles have. Every triangle we sense or imagine is thus determinate, but that means the intentional contents of these ideas cannot be identical to what the mind represents when it conceives of the form of triangularity. If some particular triangle which the mind senses or imagines were identical to the essence of triangularity, then every triangle would have to have the same features as this triangle, and if there is any property this triangle does not have, then any other thing which lacks that property also cannot be a triangle. Thus, the content the idea of triangularity refers to is not the same as any particular triangle, and the act of conceiving of triangularity is not the same as imagining or sensing some triangle.²³¹

What is clear from Descartes' account is that the intentional content of an idea of the intellect is, at the very least, something general. But this, however, may not yet be sufficient for alleviating Locke's concern that some of the ideas of the intellect are confused. As we have already learned from Kant's distinction between the two senses of 'to abstract', the intentional content of every general concept is either something abstract, or is something that refers to the determinations of some whole considered apart from others that appear alongside it. Descartes himself does not explicitly draw this same distinction, leaving it unclear whether the ideas of the intellect refer to abstracta or instead to concrete particulars that are represented indeterminately.²³² Locke, of course,

²³¹ Descartes, *Meditations*, AT VII, 37-42, 64-65, 71-77; CSM II, 25-29, 44-45, 50-54. The reason Descartes infers that there are different faculties in the mind is *because* of the differences in content represented by each of these various kinds of ideas. These differences are what entail that the mind's ideas cannot all be produced in the same way, or, that the faculty responsible for the presence of one class of ideas cannot be responsible for the others. Thus, sensory ideas are different from the ideas conceived through the imagination. There is a difference, for example, between sensing this red color patch and picturing that same color when nothing red is actually present to the senses: when I have a sensation of red, the idea is more vivid than when I simply picture that same color in the imagination. This difference in content is what implies that the power of the mind responsible for producing these ideas must also be different: whereas the mind can imagine ideas at will, it has no control over the sensations it has, neither their occurrence nor their content; similarly, the mind cannot ever produce an idea in the imagination which is as vivid as those given through the senses. And that is why ideas of sense must be given through a faculty of the mind which is distinct from the faculty which enables it to form images: the faculty of sense is just the capacity the mind has to represent sensible qualities when it is affected by an object, while the faculty of the imagination is the power the mind has to reproduce the ideas it has formerly sensed. In turn, the faculty of the understanding must also be distinct from both sense and imagination: the mind has the power to form abstract, general ideas, and this power is not the same as the one which enables it to have sensations or to form images, for conceiving an abstract general idea is not simply a matter of being affected or forming an image of something in thought. The content of these ideas is radically different from those of sense and imagination, and since neither sense nor imagination can explain how the mind forms a concept, the faculty of the mind which enables it to form those concepts must also be different.

²³² In the *Meditations*, Descartes appears to suggest that the intentional object of an idea of the intellect is a Platonic Universal. But in the *Principles of Philosophy* [AT VIII A 27-28; CSM I, pp. 212-213] Descartes expresses a commitment to nominalism: general concepts do not refer to abstract entities, they are just acts

opts for the latter reading, and this explains, in part, why he insists that the mind's idea of a chiliagon, or the infinite, is always confused. Although some of the ideas of the intellect might be distinct by virtue of being general—like the mind's idea of triangularity, where the marks are all clearly distinguished when some concrete particular is represented as a three-sided plane figure—it is less than clear whether the same is true for other ideas of the intellect, like the idea of a chiliagon, let alone the idea of the infinite. In order to represent a sensible object as a chiliagon by abstraction, one starts with a sensory idea of a thousand-sided figure—which everyone agrees is confused since the number of sides are not clearly distinguished—and then abstracts every determination from that object except its figure and the number of sides. But if the original idea given by sense was confused, then so too is the concept used to represent that object, for the latter is just a partial idea of the former: the concept refers to some concrete particular considered in abstraction of every one of its features, except its figure and number, but since these were not distinct in the original idea given by sense, they are also not distinct when represented through a general idea. And the problem is even worse in the case of the infinite, which the mind obviously does not have a distinct idea of if it is regarded as a partial idea of something given by sense—as it is for Locke, who thinks it refers to what the mind perceives when it imagines some extensive magnitude.

At this point we may return to Leibniz, whose own account builds on Descartes'. According to Leibniz, the confusion in a sensory idea, like that of a thousand-sided figure, is eliminated by finding a “way of viewing the object which shows one of its intelligible properties”, or by discovering “the *distinct properties* which the idea must be found to contain when one has brought order into confusion.”²³³ In other words, a sensory idea becomes distinct by grasping its intelligible properties and then representing it according to *those* ideas. In the case of a chiliagon, these ideas are ‘figure’ and ‘number’, both of which have their origin in the intellect.²³⁴ Earlier we noted that Leibniz, in contrast to

of the mind which enable it to represent something particular in abstraction of its determinate features. See Anthony Kenny, *Descartes*, pp. 146-156 for a defense of a Platonic interpretation; see Lawrence Nolan, “Descartes’ Theory of Universals”, *Philosophical Studies* 89 (1998), pp. 161-180. 1998 and “The Ontological Status of Cartesian Natures”, *Pacific Philosophical Quarterly* 78 (1997) pp. 169-194, for the second reading. Each of these interpretations correspond to lines of thought developed by Descartes’ successors: Nicolas Malebranche, *Search for Truth*, and John Norris, *An Essay Towards the Theory of the Ideal or Intelligible World*, Vol. I (New York: Garland Publishing, Inc., 1978) develop the Platonist interpretation, while Antoine Arnauld, *On True and False Ideas* (Lewiston/Queenston: The Edwin Mellen Press, 1990), develops the second reading. Cf. Antoine Arnauld & Pierre Nicole, *Logic or the Art of Thinking*, pp. 39-40. For both Malebranche and Norris, abstract general ideas refer to universals which exist as ideas in the mind of God.
²³³ Leibniz, *New Essays*, p. 258.

²³⁴ Leibniz, *New Essays*, 261 & 258. Number is one of Leibniz’s standard examples of an intellectual idea (Ibid, 81-82, 392). Figure is also cited as an idea of the pure intellect which comes from the common sense, that is, from the mind itself; for they are ideas of the pure understanding (though ones which relate to the external world and which the senses make us perceive), and so they admit of definitions and demonstrations. (ibid, 128)

The same point is made a bit later during his discussion of the Molyneux question (ibid, 136-138). Leibniz bases his own answer to this question on the observation that both the blind and paralytics are able to learn geometry, and since both are able to acquire the ideas which constitute the subject matter of geometry, Leibniz infers that there must be some idea(s) that each of them shares in common, even though the sensory data they have of lines, figures, etc., are different.

Wolff, allows that the intellect can be pure when an idea does not have an origin in the senses. We also noted that the only ideas that can be made distinct for Leibniz are those which do not contain any sensory content, but were originally given by the intellect itself. Both of these points are crucial for understanding Leibniz's view on the nature of the ideas of the intellect. Like Wolff, for Leibniz an idea is distinct when it can be conceived of through the simpler ideas which are its requisites. The crucial difference, however, is that for Leibniz whether an idea can be made distinct depends on the *origin* and *content* of that idea: the only ideas that can be made distinct are those which are originally derived from the intellect, for only these are amenable to the kind of analysis which enables them to be defined. The distinction between distinct and confused ideas thus runs in parallel with Leibniz's distinction between the faculties of sense and intellect. Although the ideas given by sense are more or less confused, depending on how much of their content is distinguished by the mind, they will always remain confused to some extent since they are composed of an infinite number of petite perceptions, all of which cannot be entirely discerned by the mind. In contrast, the ideas which originate in the intellect can be made distinct since the mind does not acquire these ideas by abstracting them from what it senses, it only applies these ideas to the objects of sense when it recognizes the intelligible properties *expressed* by them. These ideas do not originate in any analysis of the objects of sense, they are generated by the intellect itself and are different in kind from the ideas of sense. Specifically, they differ in kind in the sense that their *content* does not correspond to anything sensory, but is instead pure, and it is by virtue of having this

These two geometries, the blind man's and the paralytic's, must come together, and agree, and indeed ultimately rest on the same ideas, even though they have no images in common. (ibid, 137) There must be some common element present in the ideas of the blind and paralytics if both are capable of learning geometry, but since the sensory data (or "images") they have of figures is different, this common element cannot be identical to either a tactile or visual sensation, since the paralytic lacks one, while the blind lacks another (which shows "how essential it is to distinguish *images* from *exact ideas* which are composed of definitions" (ibid)). The idea(s) they both have must instead belong to a common sense, which Leibniz claims is the pure understanding. When Leibniz claims that the idea of figure comes from the pure understanding, what he means is that there are certain notions which are common to the things we perceive through both sensory modalities, or which are present in the sensory stimuli given by both sight and touch, and that these "common notions" cannot themselves, for that very reason, be either tactile or visual sensations (or indeed anything sensory). Although Leibniz does not tell us here what these ideas are, anyone familiar with the project of analysis situs will recognize that Leibniz believed that the basic concepts of geometry, such as shape, could all be reduced to certain *pure* concepts of the understanding. See Vincenzo De Risi, *Geometry and Monadology: Leibniz's Analysis Situs and Philosophy of Space* (Basel: Birkhäuser, 2007). The ideas employed in geometry ultimately rest on certain abstract concepts of the understanding, and this is what enables us to conceive of them independently of the imagination and the senses, and to have a purely intellectual geometry (ibid, pp. 33-39). In the *New Essays*, Leibniz proposes a number of definitions of shape, ultimately defining it as "what is extended and limited and has an extended cross-section" (*New Essays*, 148), and these other ideas are defined in terms of others which are metaphysical (extension, for example, is defined in terms of whole and part (ibid 103)). The reason, then, why figure is an idea of the pure understanding is because it can be defined through pure concepts derived from the intellect. The idea of figure that Leibniz is referring to in these passages is thus not the same as the idea we have when we represent a mode of some particular body through the senses. The distinct idea of figure given by the understanding is innate to the mind, and is general and abstract (though it can be applied to the stimuli given by sense), whereas the ideas of figures given by the senses are particular and concrete.

content that these ideas can be analyzed into their requisites, in a way that the ideas of sense cannot be.²³⁵

If that is correct, then it is only insofar as the objects perceived through the senses are conceived of according to ideas originally derived from the intellect that those sensory objects can be conceived of distinctly. The mind can represent a geometrical figure either through an idea of sense, or through an idea of the imagination, or by conceiving of it through an idea of the intellect.²³⁶ When the mind represents a chiliagon through the senses, the intentional content of that idea is something sensory and concrete; but, when it represents that same figure through ideas belonging to the intellect, the intentional content of that idea is not identical to any sensory image, but is instead something pure. The distinction between these various kinds of ideas, and the corresponding differences in the ways the mind represents things through these ideas, is what underlies Leibniz's criticism of Locke. Given the difference between these intentional contents, whether or not an idea is confused or distinct depends on what *kind* of idea the mind uses to represent that thing. An idea of sense is distinct just in case the mind can distinguish the various marks of a thing through the senses; and, insofar as that is the case, the sensory idea of a chiliagon will indeed always be confused since the mind is incapable of clearly distinguishing the sides of that object through the senses. But that doesn't mean that the idea the mind forms of a chiliagon through the intellect must also be confused. An idea of the intellect is distinct just in case the mind can distinguish in thought each of the marks contained in that idea, where these marks are other ideas thought through the intellect. The fact that the sensory idea of a chiliagon is confused, whereas the intellectual idea is distinct, does not mean that one and the same idea is both confused and distinct, but that these are different *kinds* of ideas. At most, what the example of the idea of a chiliagon demonstrates is that some of the ideas thought through the intellect cannot be readily converted into a distinct idea of sense, or, that what the mind can adequately distinguish in thought by means of the intellect cannot also be distinguished through sense. And so, when Leibniz criticizes Locke for asserting that the mind's idea of a chiliagon is confused,

²³⁵ I am indebted to Rutherford, *Leibniz and the Rational Order of Nature*, pp. 79-90 for this interpretation of Leibniz's account of distinct ideas, who cites NE 81, 119, 382, 392. As Rutherford notes (p. 84), the mind does not abstract these ideas from the objects perceived through the senses, it abstracts them from its own mental activity and then *imposes* them upon the sensory phenomena to make them intelligible:

Only insofar as we rely on distinct ideas derived from the intellect are we guaranteed knowledge of the essences of things. We thus reach the somewhat paradoxical conclusion that we are only able to understand reality...through reflection on our own minds.

For Leibniz, "a significant part of his metaphysics is devoted to the project of *reinterpreting* the phenomena of our senses such that they become intelligible as the appearances of reality" (ibid, p. 85; my emphasis).

²³⁶ Descartes notes that one and the same thing can either be represented through the senses, pictured in the imagination, or grasped through an idea of the understanding [AT VII 72; CSM 50-51]: one can, for example, represent a pentagon either by perceiving a five-sided figure through the senses, or by forming an image of a five-sided figure, or by conceiving of a five-sided figure through an idea of the intellect (either by representing some figure through that concept or by entertaining that concept independently of anything perceived through the senses). In this case, the ideas thought through the imagination and the intellect refer to the same object, but the difference is the *way* in which that object is represented: in the one case, the mind thinks of that thing through an image formed by the imagination, in the other, the mind conceives of it through an idea of the understanding.

his basic point is that Locke is ignoring the different kinds of ideas which the mind is able to form of some thing; and, as a result, Locke's claim that the idea of a chiliagon is confused is mistaken insofar as he is judging the clarity of that idea according to the wrong criteria, viz., whether the marks of an idea can be adequately distinguished through sense, not whether they can be adequately distinguished in thought.²³⁷ Thus, when the mind represents a chiliagon through distinct ideas of figure and number, what it represents is a certain content, and the mind can have a distinct idea of a chiliagon so long as it can conceive of through these pure concepts of the intellect.²³⁸ And the same is true for the other distinct ideas of the intellect: so long as the infinite can be defined through other ideas of the intellect, the fact that the mind cannot ever form an image of an infinite whole does not preclude the mind from having a distinct idea, for the intentional content of that idea is not an image or idea of sense but instead something non-sensory or pure.

We started this section by noting the similarities between Kant and Leibniz on the nature of intellectual cognition. Now that our brief survey of Leibniz's account the intellect in the *New Essays* is complete, we may return to the *Dissertation*. The dispute between Locke and Leibniz over the concept of the infinite provides the background to the opening sections of ID, where this concept is one of the examples Kant uses to illustrate the basic difference between intellectual and sensory cognition. An overview of the contents of this section will thus not only further demonstrate the extent of Kant's agreement with Leibniz, it will also help us better understand his own account of the nature of intellectual cognition, as well as his distinction between sense and intellect.

Section §2.5: Kant's Initial Account of the Sense-Intellect Distinction in ID

The *Dissertation* begins with a distinction between two methods of concept formation, analysis and synthesis, and the difference between these two methods is illustrated with an example of how the mind forms a concept of a composite substance. This concept can either be formed through analysis by starting with the concept of a whole and then distinguishing that whole into various component parts, or through the method

²³⁷ In *Jäsche Logic*, Ak 9:35, Kant distinguishes between the sensible and intellectual distinctness of a concept, where the former "consists in consciousness of the manifold in intuition" (or in distinguishing the parts in an appearance), while the latter "rests on analysis of the concept in respect of the manifold that lies in it as its content" (or in distinguishing the marks contained in the concept).

²³⁸ In a letter written to Sophie Charlotte in 1702 on the question "*Whether there is something in our thoughts that does not in any way come from the senses*" (p. 237), Leibniz contrasts sensory ideas, like those of color and sound, which are always confused since they cannot be defined, with the distinct ideas which can be defined and must belong to a common sense since "there is no external sense to which they are particularly associated and characteristic of" (p. 228). Examples of the latter are ideas of numbers and shapes. Although these ideas can be applied to the ideas given by sense, specifically those of touch and sight, ...in order to conceive numbers and even shapes distinctly, and to form sciences of them, we must arrive at something which the senses could not provide, and which the understanding adds to the senses. (p. 239).

In the draft to this letter, he notes that "these ideas are the objects of the pure and abstract mathematical sciences" and that "particular sensible qualities are susceptible of explanations and reasoning only insofar as they contain what is common to the objects of several external senses, and belong to the internal sense" (p. 228). See *Leibniz and the Two Sophies: The Philosophical Correspondence* (ed. Lloyd Strickland. Toronto: Iter, Inc., 2011), pp. 237-247.

of synthesis, which begins in the opposite direction with the concept of a part and then forms the concept of a whole by combining those parts together through successive addition. Kant tells us that the purpose of this illustration of the two-fold genesis of the concept of a substantial compound is to “help us secure a deeper insight into the method of metaphysics” [ibid]. The insight alluded to here is obtained by reflecting on the different ways in which a concept originally generated by the intellect²³⁹—either through the method of analysis or synthesis—can be represented in one of two ways, either through the faculty of sense or through the faculty of the understanding.²⁴⁰ The concept of composition can be conceived of through the intellect alone, in abstraction of the objects perceived through the senses; what appears before the mind when it represents this concept through the intellect is not any image or object of sense, but instead a certain kind of content which is abstract.²⁴¹ But this concept can also be illustrated *in concreto* by applying it to something sensible, or, by thinking of something sensible *as* composite. Thus, although the concept of a composite is originally generated by the intellect through analysis by starting with the concept of a whole and then distinguishing it into its various parts, this abstract concept can also be applied to what is perceived through the senses by representing something sensible as a whole and then distinguishing it into its various parts: that is, the mind applies the abstract concept of a composite formed through analysis to what it senses by representing something sensible as a single whole made up of distinct parts standing in reciprocal relations to one another. Likewise, the concept of a composite originally formed through the intellect by the method of synthesis starts with the concept of a part and then combines distinct parts to form the concept of a whole, and this same concept can be exhibited in the concrete when the mind starts with the representation of something sensible and then aggregates it with others to form a representation of a whole. The mind thus represents something sensible as a composite by thinking of it as a whole made up of parts standing in reciprocal relations to one another, or, conversely, by first representing its parts and then aggregating them together so as to conceive of them as making up a single whole. In either case, the mind comes to represent something sensible through an abstract concept of the understanding by

²³⁹ Kant mentions in passing that the concept of composition is a pure concept of the understanding [Ak 2:387]. It is also repeatedly cited in the Nachlass as an example of a concept generated through the real use of the intellect. See Ak 17:350, Refl. 3927 (1769? 1771-2?. M V); Ak 17:352, Refl. 3930 (1769. M 432); Ak 17:356, Refl. 3941 (1769. M VII). For reasons of space, I omit my discussion as to why he thinks this.

²⁴⁰ Notice that Kant is distinguishing here between what is involved in giving an “exposition of the underlying concept,” where this consists in giving “the characteristic marks which belong to the *distinct* cognition of an object,” and the act of following that cognition up so as to “represent the same concept to oneself in the concrete by a *distinct* intuition” [Ak 2:387; my emphasis]. That is, an idea which originally belongs to the intellect, and is conceived of “using an abstract concept of the understanding,” is distinct, and the question is whether this same idea can also be represented through a distinct sensory intuition. Like Leibniz, Kant is thus implicitly distinguishing between what is required for an idea conceived of through the intellect to be distinct, and what is required for that same idea to be made distinct through a sensory cognition: whether or not an idea is confused or distinct thus depends upon what *kind* of idea we have in mind, either an abstract concept of the intellect or a sensory concept of intuition.

²⁴¹ We will discuss just what Kant means by ‘abstract’ in §2.6 below. For now, all I will say is that Kant’s use of this term is synonymous with ‘pure’ or ‘non-sensory’.

applying that concept to what is sensed, and in doing so the mind converts a concept whose content is abstract and general into something concrete and singular.²⁴²

But although there are some abstract concepts which can be represented through either the faculties of sense or intellect, there are other concepts of the intellect which cannot be represented in the concrete by means of the senses. The examples Kant cites are the concepts of a simple and a totality. Both of these concepts are generated by the mind when it attempts to make the concept of a composite distinct, and both are also formed through the same methods of analysis and synthesis originally involved in generating the concept of a composite. On the one hand, through analysis of the concept of a composite the understanding is led to the concept of a simple. Anything composite must be made up of parts, for by definition a composite just is an aggregate of parts; but the parts of a compound substance cannot themselves be made up of further parts *ad infinitum*, for since the composition of these parts is nothing more than a kind of relation, and no relation can exist unless there are relata standing in those relations, it follows that simple substances must exist if composite substances exist. The analysis of a substantial compound thus leads to the concept of a simple, which is the ultimate constituent of any composite substance. Conversely, synthesis leads the understanding in the opposite direction to the concept of a whole which is not a part, for the parts of a composite only constitute a complete whole if the number of parts is a totality, and so, by successively adding one part to another one ultimately comes to the concept of a whole which is not a part of anything else—a totality or world.²⁴³ Thus, by reflecting on the concept of a composite, the mind is gradually led by the understanding to the concept of a simple and the concept of a world. But a problem arises when the mind attempts to follow up these reflections and represent these concepts in the concrete through sensitive intuition, for if, in the course of analysis, the composite is revealed to be *continuous*, or, conversely, if the composition given through synthesis requires that the object is an *infinite* whole, then it will no longer be possible to exhibit these concepts in the concrete, for since there is no limit to the parts of an object when it is either continuous or infinite, the acts of analysis and synthesis required to represent all of these parts will never come to a completion.

But, in the case of a *continuous magnitude*, the *regression* from the whole to the parts, which are able to be given, and in the case of an *infinite* magnitude, the *progression* from the parts to the given whole, have in each case *no limit*. Hence it follows that, in the one case, complete analysis, and, in the other case, complete

²⁴² Like Descartes' example of the different ways in which the mind can represent a pentagon, the concept of composition can either be thought through the understanding or represented in the concrete through sensitive intuition. But again, Kant never really explains how this "match" between the abstract content represented through the intellect and the sensible material given by the senses is possible.

²⁴³ Note that there is an implicit distinction between the sense in which the world is a whole from the way composite substances are wholes. Every composite substance perceived through the senses is, in Kant's words, a "comparative totality" [Ak 2:391]; in other words, these objects are not *genuine* wholes, they are only relative wholes, i.e., a whole relative to some circumscribed number of parts. The world, in contrast, is a genuine totality, an *absolute* whole. While a comparative totality is a whole relative to some set of parts, it can be a part relative to some other whole; whereas the world, by definition, cannot be a part relative to anything else which exists outside it.

synthesis, will be impossible. Thus, in the first case, the whole cannot, according to the laws of intuition, be thought completely as regards *composition* and, in the second case, the compound cannot be thought completely as regards *totality*. [Ak 2:388]

The reason the mind cannot ever represent a totality or a simple in the concrete is because the objects represented through the senses are always intuited in time and space, and, since these are both continuous and infinite, the composite substances represented in time and space must be infinitely divisible and the world must be infinite in extent.²⁴⁴ In order to represent a simple in the concrete, the mind begins with the representation of a compound substance and then proceeds to form representations of each of its parts by running through, step by step, each of the parts contained in that composite—say, for example, by enhancing the images of those parts by subjecting them to ever more powerful microscopes. In the course of this analysis, what the mind represents is an ever-growing number of parts. Since space is infinitely divisible, the number of parts that make up the composite must also be infinite, and in that case the mind will never be able to completely run through and represent all of the parts which compose that substance. Though the understanding requires that the composite substances encountered in sensory intuition are made up of simple parts, it is impossible to ever arrive at a sensory cognition of those parts, for since every composite is continuous, it must be composed of an infinite number of parts, and that means that the series of intuitions the mind has as it represents ever smaller parts will never be completed. Similarly, in order to intuit a world or totality, the mind begins with a representation of one of its parts and then proceeds to combine that part to that of another to form the representation of an ever greater whole. Once again, however, since space and time are infinite in extent, there is no limit to the number of parts that can be combined when forming the representation of a totality through successive addition; and since the number of parts contained in that whole will be infinite, the mind will never be able to complete the synthesis required to form an intuition of all those parts existing together as a single whole.²⁴⁵

²⁴⁴ At this stage of the *Dissertation* Kant is merely assuming that time and space are continuous and infinite in extent for the purpose of illustrating the problem which ID is supposed to solve. He argues for these claims in Ak 2:399-400 & 403 (cf. Ak 1:478-79). It should be noted that the concepts of continuity and infinity, like the concepts of a simple and a totality, cannot be represented in intuition, they can only be conceived of through the intellect. What this entails is that the continuity and infinity of time and space is *not* given through intuition, it is *inferred* by a rational demonstration. But there isn't anything necessarily problematic about this, for the fact that time and space are both sensory does not mean that the mind cannot also apply concepts of the intellect to those representations: space and time can be *conceived* of as continuous and infinite in the same way that the mind represents sensible objects as causes or as substances. Although Kant denies that time and space can be represented *through intuition* as continuous or infinite, he allows that the continuity and infinity of time and space can be conceived of through the intellect. This is noted by Falkenstein, *Kant's Intuitionism*, p. 373n37, who observes that Kant himself makes this very point at Ak 4:506-07.

²⁴⁵ Note that there are two different kinds of reasons why these concepts cannot be represented through the senses, each of which is based on the different ways in which time and space are conditions of sensory intuition. First, they are conditions for the *objects* represented through the senses, in the sense that every sensible object must appear in time and space; second, time is a condition for the mind's *intuitions* of those

In both of these examples, the basic problem is that when an object is either continuous or infinite, the complexity of the object exceeds what the mind is capable of representing through intuition. Since there is no end to the series of intuitions which the mind has when the object is either continuous or infinite, neither the concept of a simple or of a totality can ever be exhibited in the concrete through the senses. There is, in other words, something in the content of these concepts, together with the mind's faculties of sensory cognition, which makes them *in principle* unrepresentable by means of the senses.²⁴⁶ As Kant notes, it is for this very reason that many reject these concepts as

objects, in the sense that every act of representation must occur in time. Kant is not always careful to explicitly distinguish between these different senses, though they are implicit in the text. Each of these conditions imposes a different kind of limitation on what the mind can sense. As the form of intuition, time imposes limitations on what kinds of representations the mind can form; as the form of appearance, time and space impose constraints on what kinds of things can appear in the sensible world. As for the first constraint, the reason why the mind cannot represent an infinite or continuous magnitude through sense is because the number of parts which need to be represented—either by continuously “zooming in”, so to speak, to represent ever smaller parts, or by “zooming out” to represent a larger whole—is infinite; in that case, neither the synthesis nor analysis of a composite can ever come to completion, since this would require the mind to run through and successively combine all its parts, one by one, which the mind could never do in a finite time since the number of their parts is infinite. In other words, the reason the mind cannot form these representations is because the process required to do so cannot be completed in a finite amount of time, but since time is the form of intuition, whatever the mind cannot intuit in time, cannot be intuited at all. Though it is not entirely clear why Kant imposes the restriction that these acts of analysis and synthesis must be completed in a finite time, presumably the idea is that if the number of parts the mind needs to represent is infinite, then the amount of time it will take to form this representation must also be infinite, but since an infinite amount of time can never come to an end, neither can the process of forming these representations (“In order, therefore, to think, as a whole, the world which fills all spaces, the successive synthesis of the parts of an infinite world must be viewed as completed, that is, an infinite time must be viewed as having elapsed in the enumeration of all coexisting things. This, however, is impossible” [A426/B454]). The second reason Kant has for denying that these concepts could be represented in the concrete is based on the fact that time and space impose conditions on what kinds of objects can exist in the sensible world. Since time and space are infinite magnitudes, the objects that exist in the sensible world must be infinitely divisible and infinite in extent and duration, but that entails, according to Kant, that simple substances cannot exist in the sensible world and that the sensible world cannot be thought of as a genuine totum. If every sensible object must exist in space, and space is infinitely divisible, then those objects must also be infinitely divisible (“Since all external relation, and therefore all composition of substances, is possible only in space, a space must be made up of as many parts as are contained in the composite which occupies it. Space, however, is not made up of simple parts, but of spaces. Every part of the composite must therefore occupy a space...everything real, which occupies a space, contains in itself a manifold of constituents external to one another, and is therefore composite” [A435/B463]). Likewise, it is impossible to ever think of the sensible world as an absolute totality since both the parts of the world, as well as its past and future states, all alike exist in time and space, and since time and space are continuous and infinite, any extensive magnitude or series of events can only ever be represented as something which is bounded by more time and space, or, as something which is a delineated part of a greater whole. Thus, whereas the first constraint explains why something is not representable by appealing to a feature of the mind's faculty of intuition, the second rules out the possibility of certain objects according to the conditions which time and space impose on appearances. Cf. A426-444/B454-473 & A508-527/B536-B555.

²⁴⁶ The distinction Kant is drawing here is an important one, and one way to elaborate on it is to recall our earlier discussion of the disagreement between Leibniz and Locke on the question of whether the mind has a positive idea of the infinite. According to Leibniz, the fact that the mind cannot imagine an infinite whole in thought is no reason to think that the mind does not have a positive idea of the infinite, in the same way that the inability to imagine a chiliagon does not prevent us from having a clear and distinct idea of that figure. But these ideas appear to be different in one very crucial respect: the idea of a chiliagon can, in principle, be represented in the concrete through a *possible* sensory intuition, whereas the idea of the

incoherent, for “since *unrepresentable* and *impossible* are commonly treated as having the same meaning, the concepts both of the *continuous* and of the *infinite* are frequently rejected” [Ak 2:388]. The lack of cohesion between what the mind represents through the intellect and what the mind is capable of representing in sensory intuition leads to a conflict, for if there are certain concepts generated by the intellect whose objects can never be encountered in a possible sensory experience, one might begin to doubt whether these concepts are in fact genuinely possible, or whether they are instead merely fictive concepts conjured up by the imagination. Even worse, if the existence of the objects corresponding to those concepts appears to be guaranteed by the principles of reason, one might then conclude that human reason is inherently defective. But Kant thinks this is a mistake, and that those who argue in this way “are guilty of the gravest errors” [ibid]. As Kant explains,

...whatever *conflicts with* the laws of the understanding and the laws of reason is undoubtedly impossible. But that which, being an object of pure reason, simply *does not come under* the laws of intuitive cognition, is not in the same position. For this lack of accord between the *sensitive* faculty and the faculty of the *understanding*-the nature of these faculties I shall explain later-points only to the fact that the *abstract ideas which the mind entertains when they have been received from the understanding very often cannot be followed up in the concrete and converted into intuitions*. But this *subjective* resistance often creates the false impression of an *objective* inconsistency. And the incautious are easily misled by this false impression into taking the limits, by which the human mind is circumscribed, for the limits within which the very essence of things is contained. [Ak 2:388-389]

The fact that something cannot be represented in sensory intuition does not mean it is impossible in itself. The only things that are impossible are those which cannot be thought without contradiction, but neither the concepts of continuity nor infinity are self-contradictory.²⁴⁷ Although the mind could never intuit these concepts in the concrete,

infinite cannot be. This indicates an important difference between the ideas that belong to the intellect. The ideas of geometrical figures, like triangles and chiliagons, as represented through the intellect, are both abstract and general, but each of these ideas can be “followed up” and represented in the concrete: the mind can sense a three-sided figure, and although it cannot sense or imagine all the sides of a chiliagon at a glance, so to speak, we can still represent it by counting the sides of such a figure one after another. Indeed, as Leibniz, *New Essays*, p. 220 & 261 notes, it seems that a chiliagon could, in principle, be something we could represent in a single intuition if our senses were more fine-grained; the fact that the mind cannot form an intuition of a chiliagon at a glance seems to be a mere limitation which pertains to the actual constitution of our sense organs, but one could surely imagine creatures whose sense organs have a greater power of discrimination than our own who could determinately represent all the sides of that figure in a single glance. The crucial point here is that although certain concepts, like triangularity or the concept chiliagon are abstract, it is possible to encounter an object through the senses which corresponds to that concept. But the concept of the infinite is not like that: the mind could never, even in principle, represent the infinite in the concrete through any possible sensory intuition. The concepts represented through the intellect thus appear to be of two different sorts: the difference is that the intentional content of some of these concepts can be “matched up” and encountered in some possible sensory experience, whereas others could never be encountered through the senses.

²⁴⁷ One problem here is that Kant does not explain how we can know that these concepts are genuinely possible. This would require a *real* definition of these concepts, and thus a proof that these concepts are

that only shows that these concepts cannot be represented through the senses, it does not mean they cannot be represented *at all* through some other faculty of cognition. To claim that what cannot be represented through the senses is, for that reason, *unrepresentable* is to confuse what the mind can picture or sense with what the mind can conceive. In other words, it is to make the same mistake that Leibniz accused Locke of having made when Locke denied that the mind has a positive idea of the infinite: the fact that the mind cannot imagine an infinite whole in thought does not mean the mind does not have a positive idea of the infinite, for all that is required for having this idea is that the mind can conceive the infinite through an idea that is clear and distinct. The fact that the intentional content of this idea is not something sensible or an image of any sort is irrelevant, for the concepts represented through the intellect are conceived of differently from the way the mind represents something through the senses or the imagination: what appears before the mind when it conceives of the infinite or continuity, of a simple substance or a totality, is something abstract, not something which is identical to any image or idea of sense. Kant thus appears to be in agreement with Leibniz: the intellect is a genuine source of cognition which enables the mind to conceive of certain things independently of sense, and as pure concepts of the intellect, infinity, continuity and other such concepts are conceived of differently from the way something sensible is represented.

But Kant's defense of these concepts is not based solely on the observation that their intentional content is abstract. Indeed, if this is all that Kant had to say on their behalf, his defense would be a failure, for those who maintain that these concepts are all incoherent do not simply reject them because they cannot be sensed; they reject them because there appear to be arguments which demonstrate that they impossible. For example, those who reject the concept of a simple substance as incoherent do so because they reason that if composites are made up of simples, then these simples must either be extended or not, but if they are extended then they are not simple, and if they are not extended, then they cannot compose anything extended through aggregation. It isn't that simple substances are impossible because they cannot be sensed, instead, they cannot be sensed (or indeed represented in any other way) *because* they are impossible. But Kant himself signals that his defense of the intellect is not based solely on the fact that the mind cannot intuit these concepts in the concrete, that he is not "pleading a case for these concepts*—concepts which have been expelled in disgrace from not a few schools, especially the concept of the continuous" [Ak 2:388-389]. His more fundamental point is that the arguments which attempt to demonstrate that these notions are incoherent are

actually possible. As we saw earlier, there are two ways of demonstrating that some concept denotes a possible being. The first is by experience: if we encounter an object in experience, then the concept that object corresponds to must be possible, since anything actual is possible. But obviously if the concepts of continuity, infinity, simple substance and world cannot be represented in the concrete through sensory intuition, their possibility cannot be demonstrated by experience. This leaves us with the second method of demonstrating that something is possible. The second method starts with concepts which are already known to be possible and then demonstrates how a new concept can be formed by putting those concepts together, along with a demonstration that combining these concepts does not result in any contradiction. Kant must be assuming that the possibility of these concepts can be demonstrated in this way, in other words, by using the synthetic method found in the textbooks of Wolff, Baumgarten and others.

all based on a certain “perverse method of arguing” [ibid]. This “perverse method” is uncovered in the final section of ID, where Kant seeks to develop his conception of the proper method for metaphysics. As Kant notes, his goal in this section is not to determine the positive laws of metaphysics, but only to make a purely negative contribution, namely, to explain what must be avoided in all metaphysical speculation:

Every method employed by metaphysics, in dealing with what is sensitive and what belongs to the understanding, amounts, in particular, to this prescription: great care must be taken *lest the principles which are native to sensitive cognition transgress their limits, and affect what belongs to the understanding.* [Ak 2:411]

The key error which must be avoided in all metaphysical reasoning is to mistake the conditions of sensory cognition for the conditions of things as they are in themselves. The failure to recognize this distinction is what leads many to adopt certain mistaken principles, or “subreptic axioms,”²⁴⁸ which then result in metaphysical fallacies. The concepts cognized through the intellect represent things as they are in themselves, but the concepts that belong to sense are not valid of things as they are in themselves since they only belong to things according to the subjective conditions of our sensory cognition. Consequently, when the subject of some judgment is a concept of the intellect, one can never predicate anything of that concept which belongs to sense, for this would confuse a condition of what makes something a possible object of sensory cognition with a condition for the possibility of things as they are in themselves [Ak 2:412*]. One must always be sure then to exclude conditions of sense from any pure concept of the intellect. Now, in Sec.3, Kant claims to have established that time and space are not concepts of the intellect. And, once time and space are recognized to be subjective conditions of our *sensory* cognition, one must always avoid predicating anything which contains determinations of time and space to a concept which belongs to the intellect. For Kant, the failure to recognize that time and space are subjective conditions of sensitive intuition is one of the main sources of metaphysical errors: if one assumes that time and space are conditions of every possible object, then anything that cannot be represented in time and space must be impossible, and that what cannot be intuited is neither thinkable nor possible.

The PRINCIPLE OF REDUCTION for any subreptic axiom is, therefore, this: *If of any concept of the understanding whatsoever there is predicated generally anything which belongs to the relations of SPACE AND TIME, it must not be asserted objectively; it only denotes the condition, in the absence of which a given concept would not be sensitively cognisable...* But that the understanding should fall so easily into this fallacy of subreption results from the fact that it is deluded by the authority of a certain other rule which is in the highest degree true. For we rightly assume that *whatever cannot be cognized by any intuition at all is simply not thinkable*, and is, thus, impossible. But since we cannot, by any effort of the mind, nor even by invention, attain any other intuition than that which occurs in

²⁴⁸ A subreptic axiom is a fallacy in which “the principles which are native to sensitive cognition transgress their limits, and affect what belongs to the understanding” [Ak 2:411].

accordance with the form of space and time, it comes about that we treat as impossible every intuition whatsoever which is not bound by these laws (leaving aside a pure intuition of the understanding which is exempt from the laws of the senses, such as that which is divine and which Plato calls an idea). And thus it is that we subject all things which are possible to the sensitive axioms of space and time. [Ak 2:412-413]

Having formulated this methodological prescription, Kant then proceeds to discuss a number of specious metaphysical arguments in which the principle of reduction is violated. Kant identifies three different types of subreptic axiom [Ak 2:413], each of which is a source of different kinds of fallacious, metaphysical reasoning. Thus, the first subreptic axiom that “*Whatever is, is somewhere and somewhen*” [Ak 2:413-414] assumes that space and time are conditions for every possible object, for if everything that exists must be in time and space, then whatever exists must be “somewhere and somewhen.” But once this axiom is accepted, problems immediately arise about the location of immaterial souls (or simple substances) or about the presence of God in the sensible world [Ak 2:414]: if God exists in time, then “why did not God establish the world many centuries earlier?”, and how can God have foreknowledge of things “which are to be, that is to say, actual *at a time at which He is not yet*” [ibid]? Likewise, if God exists in space and is said to be omnipresent, then how can we avoid the contradiction that something is “in several places at the same time” [ibid], or the conclusion that God is extended and made up of parts? Again, from the assumption that space and time are conditions of every object, it follows that “every substance is *extended* and continuously *changed*” [ibid], and hence that simple substances are impossible. But all of these problems “vanish like smoke” [ibid] as soon as it is recognized that time and space are only forms of sensitive cognition, not conditions for the possibility of objects in general. Neither God nor simple, immaterial substances exist in space. The arguments which purport to show that there is something incoherent in these notions all derive their force by surreptitiously assuming that the only way anything can exist is if it exists in time and space. The reason, for example, that one assumes that composite substances cannot be composed of simples is because it is assumed that these simples must exist in space; from this assumption, it follows that these simples must either be points, in which case they cannot be parts of extended objects since un-extended points could never be combined in a way that would result in something extended, or they are extended, in which case they are no longer simple since anything extended will always have parts. But this argument loses its force as soon as one recognizes that simple substances need not exist in space. Once it is recognized that space and time are only principles of sensory cognition, and thus do not extend to things as they are in themselves, this paradox, as well as many others, is easily resolved.²⁴⁹

²⁴⁹ On Kant’s reading of Leibniz, simple substances are not contained in composite substances as one of their parts, but are instead their requisites or grounds.

Is it really believable that Leibniz, the great mathematician, held that bodies are composed of monads (and hence space composed of simple parts)? He did not mean the physical world, but its

In the next set of examples, Kant returns to the arguments discussed at the beginning of ID which purport to show that the concepts of a simple substance and a totum are incoherent since they cannot in principle be intuited through the senses. These are both examples of the second subreptic axiom, according to which “the same sensitive condition, under which alone *it is possible to compare what is given so as to form a concept of the understanding of the object*, is also a condition of the possibility itself of the object” [Ak 2:413]. The second subreptic axiom involves the assumption that the conditions for cognizing an object through sense impose constraints upon what can be cognized through the intellect: since the act of forming a cognition of some magnitude through sense requires that the parts of that thing are combined one after another in time, if the magnitude contains an infinite number of parts, then the mind will not be able to form a representation of that thing in a finite time. But this only indicates a limitation on the part of our faculty of sensory cognition, not on what the mind can conceive of through the intellect, and one should not mistake a subjective condition of sense for an objective condition of an object. That the magnitude of the world is limited and bodies consist of simples is something known by pure reason. The fact that this cannot be verified by sense does not imply that it cannot be known or cognized in some other way. To assume otherwise would be to confuse what the mind can sense with what it can think through the intellect. And once this is recognized the fact that the mind cannot exhibit infinite wholes or simple substances through intuition is no reason for thinking that these concepts are incoherent [Ak 2:415-416].

According to Kant, all the puzzles and paradoxes that are thought to arise for the pure concepts of metaphysics are based, in one way or another, on confusing the conditions of sensory cognition with those of intellectual cognition: they all assume that the same laws and principles which condition the possibility of the objects cognized by the senses also condition the possibility of the objects cognized by the intellect. But all these problems will disappear if we are careful to distinguish between what is proper to sense and what is proper to the intellect. Kant’s resolution of these metaphysical paradoxes and his account of the intellect appear to put him squarely on the side of Leibniz. In each of these examples, Kant assumes that the mind has a power to cognize certain kinds of entities through a faculty of the mind distinct from sense. The concept of a simple substance, a totality, the infinite, etc., are all concepts that cannot be represented by the mind through sense. But that does not mean the mind does not have these

substrate, the intelligible world, which is unknown to us. This lies merely in the Idea of reason, and in it we must certainly represent to ourselves everything which we think as a composite substance as composed of simple substances. [Ak 8:248; cf. 209*, 211 & Ak 2:339]

See Rutherford, *Leibniz and the Rational Order of Nature*, pp. 218-226 for discussion and citations. See Vaihinger, *Commentar II*, pp. 146-147 for discussion of Kant’s “metaphysical” reading of Leibniz. As for the argument that the world cannot constitute an infinite totum, this is because it is imagined to exist in time and space. Note that Leibniz, *New Essays*, pp. 150-151 also denies that any infinite whole can exist in the sensible world, and that the universe cannot be considered to be a kind of genuine whole. It is worth comparing the remarks Kant makes about the idea of the infinite in ID to what he later writes in the *Critique of Judgment*, Ak 5:248-260, where he notes this concept cannot be represented through the imagination.

concepts; it only means that the way in which the mind represents these concepts is different from the way it cognizes something through sense.²⁵⁰

In turn, Kant's proposed solution to these metaphysical puzzles also explains why he rejects the Wolffian approach to ontology. The basic problem with Wolff's methodology is that the fundamental categories of reality are all supposed to have been obtained by abstraction from what is given by the senses. But in that case, it is inevitable that time and space will then be elevated to the status of fundamental categories of being, for since time and space are the forms of all sensory cognition, everything the mind perceives through the senses must exist in time and space. But if the fundamental categories of being are to be derived by abstraction from what is given by sensory experience, and everything given through sensory experience exists in time and space, one will inevitably infer that nothing can exist unless it exists in time and space.²⁵¹ But according to Kant, once this has been done, the distinction between phenomena and noumena will have been "completely abolished" [Ak 2:395]. For Kant, the noumenal realm is inhabited by entities which exist outside of time and space, and the only way to explain how the mind can have concepts of these entities is by appealing to a source of cognition which generates concepts independently of sense. The failure, then, to recognize the real use of the intellect is what leads to either a deeply mistaken understanding of the nature of immaterial or simple substances, the infinite, and God, or to the rejection of these concepts as purely fictive entities of the imagination.

Section §2.6: Kant's Distinction Between Sense & Intellect

With these results in hand, we may finally return to the question of what ultimately grounds the distinction between the faculties of sense and intellect. Before presenting my own account, it will be useful to first provide a brief recap of what we have learned thus far. As we noted at the beginning of Chapter 1, there are two major pairs of criteria which Kant appears to use to distinguish between intellectual and sensory cognition: first, in sensory cognition the mind is passive, while in intellectual cognition it is active; second, the content of a sensory representation is always something singular, whereas the content represented through the intellect is always general. But, although each of these criteria mark important differences between sensory and intellectual cognitions, throughout our

²⁵⁰ Although Kant is said to have discovered the antinomies sometime before writing ID, they are used for very different purposes in ID and the CPR: in the *Critique*, they are used to show that reason comes into conflict with itself when it seeks for the unconditioned, but in ID the arguments which later appear as antinomies are used to demonstrate a conflict between reason and sense, not between reason itself in its unrestricted use. Moreover, in ID Kant appears to accept the arguments which later appear as the theses of each of the antinomies in the *Critique*, each of which are Leibnizian.

²⁵¹ Many of the examples of metaphysical subreption which Kant cites, such as the principle "whatever is, is somewhere and somewhen", are derived from Crusius. In *Entwurf der Nothwendigen Vernunft Wahrheiten* (Leipzig, 1745) §48-56, Crusius identifies time and space as fundamental categories of being, and this is precisely because Crusius, like Wolff, attempts to explain the origin of the pure concepts of ontology by appealing to acts of abstraction performed upon the objects of sense, rather through the innate activity of the intellect in its real use.

discussion we have encountered a number of reasons which show that neither of these criteria can ultimately ground the distinction between those two forms of cognition.

The main problem for any attempt to distinguish between sense and intellect in terms of passivity and activity is that the mind is active when generating the representations of time and space, though these representations assuredly do not belong to intellectual cognition. But what has also been revealed over the course of our discussion is that the cognitions generated through the logical use of the understanding are *also* sensory, though they too are in part generated through the activity of the mind. In that case, activity and passivity alone cannot ground the distinction between sense and intellect. In fact, what has become clear over the course of our discussion is that the distinction between passivity and activity is much more fine-grained than it may appear to be at first sight. Generally speaking, whether the mind is passive or active in forming a representation depends upon whether it is causally responsible for producing that representation. But in every representation there is both matter and form, and the mind can, in principle, be responsible for either generating the *form* of a representation or its *content*. In section §2.2, we noted that within every sensory representation, Kant distinguishes between the sensual and the sensitive: the sensual element of every sensory representation corresponds to the matter given by affection, whereas the sensitive is that by virtue of which the sensual content is represented according to a certain form. The form of a sensory representation is always one of two sorts. First, the mind is active when producing the spatiotemporal form of an appearance, since this is generated when the mind coordinates the sensations given by affection by projecting them into spatiotemporal locations. Second, the mind is active when forming general concepts of the appearances represented in time and space, since these are generated by reflecting on the sensual content given by affection, comparing it to others, and then abstracting that content so as to represent it independently of the other sensual contents which appear alongside it. What this demonstrates is that the mind is never completely passive in sensory cognition, it is only passive with respect to sensation: the mind is never causally responsible for generating the sensual content given by affection, it is only responsible for generating *ways* of representing that content. Thus, when the mind represents something in time and space, it first receives some content through affection, such as a color, a taste (etc.), and while the spatiotemporal order in which that content is represented is produced by the mind, the content that is sensed is not: when the mind sees blue, or tastes something sweet, the content sensed (i.e., blue, sweet) is given through affection, while the spatiotemporal form of what is sensed is given by the mind itself. Here, these forms are just ways in which the sensual content given by affection, which is otherwise intrinsically non-spatial and non-temporal, comes to be represented. Similarly, the concepts generated through the logical use of the understanding always presuppose that some content is first given to the mind; although a general concept can only be formed through acts of reflection, comparison and abstraction, the mind is partially passive when forming that concept when the *content* of that concept is given by sense. Once again, the mind is only active here with respect to the *form* of the representation, for making the

content represented general, but it is not active with respect to its matter. In each of these cases, the mind is thus partially active and partially passive: it is active with respect to the form of a representation, passive in regards to the content. And the crucial point here is that the distinction between the sensual and the sensitive is one that is drawn with respect to *sensory* cognition. Thus, not only are the concepts of space and time, as forms of intuition, both sensory cognitions, so too are those concepts generated through the logical use of the intellect when the content of those concepts contains something sensual. So long as the matter of what is represented is something sensual, a cognition will belong to sensory cognition even if the form of that cognition is given by the activity of the mind.

The distinction between sense and intellect cannot, then, be based on whether the mind is active or passive when forming a representation. Instead, what is suggested by these remarks is that the distinction is based on the *content* of what is represented. Thus, the representations of time and space, as well as the empirical concepts generated through the logical use of the intellect, both belong to sensory cognition since they contain, as part of their content, something sensual, or, refer to something which is an object of sense. Moreover, although Kant's initial formulation of the distinction between sense and intellect in §3 appears to be given in terms of receptivity and spontaneity, in the very same passage Kant also suggests that the distinction is based on the *content* of what is represented, as when he writes that the objects represented through the intellect "cannot by their own quality come before the senses of the subject" [Ak 2:392]. What this suggests is that it is something about the nature of the objects represented through the intellect which *explains* why they cannot be given to the mind through affection, or, that the difference between the faculties of sense and intellect may not be ultimately grounded on the difference in their mode of production, but instead on certain fundamental differences in the nature of the things which the mind represents.

Although one might be tempted to assume that what Kant has in mind here is the difference between representations that are singular as opposed to general, what has also become clear from our exposition is that the distinction between sense and intellect cannot be based on whether the intentional content of a representation is singular or general. As we have already seen, one of the key points that Kant stresses throughout his discussion is that the generality of a cognition does not alone entail that the cognition is not sensory. Singularity and generality, as such, are not the criteria which distinguish sensory from intellectual cognition, for the concepts generated through the logical use of the understanding remain sensory even though the content of those concepts is something general. But if a concept can be sensory even though it is general, generality and singularity cannot ground the distinction between sense and intellect either.

If, therefore, sensitive cognitions are given, sensitive cognitions are subordinated by the logical use of the understanding to other sensitive cognitions, as to common concepts...But it is of the greatest importance here to have noticed that cognitions must always be treated as sensitive cognitions, no matter how extensive the logical use of the understanding may have been in relation to them. For they are called

sensitive *on account of their genesis* and not on account of their *comparison* in respect of identity or opposition. [Ak 2:393]

The reason general concepts remain sensory is because the content is still related to something originally given by sense. Through the logical use of the understanding, representations are ordered in terms of their generality, but if their content is sensual, or refers to something present within sensible objects, then the concept remains sensory, no matter how general it might be: “empirical concepts do not, in virtue of being raised to greater universality, become intellectual in the *real sense*, nor do they pass beyond the species of sensitive cognition; no matter how high they ascend by abstracting, they always remain sensitive” [Ak 2:394]. After the determinations which are unique to some sensible particular have been abstracted, the content represented by the mind is still related to that sensible particular, since it is included within the original sensory content as a part to a whole. And no matter how much abstraction was involved in forming a concept, the cognition will remain sensory so long as the content of that representation was originally given by the senses and is thus related to the sensible particulars from which it was originally abstracted as one of their constituent features. The fact, then, that a representation is general does not alone make it a non-sensory representation, and in that case, Kant’s distinction between intellectual and sensory cognition cannot be ultimately grounded on the fact that the contents represented through sense are singular whereas the intellect represents concepts that are always general.

But then what is it that grounds the distinction between sense and intellect? There is another option which appears to be more promising. In Sec §2.2 & §2.5, we noted that Kant frequently characterizes a concept of the intellect as one whose intentional content is abstract. In contrast, the intentional content of the ideas of sense is repeatedly characterized as concrete. What this suggests is that perhaps the distinction between sense and intellect may ultimately be grounded on whether the intentional content of a representation is abstract or concrete. There is a good deal that can be said on behalf of this interpretation. The first piece of evidence is textual: throughout ID, the sense-intellect distinction is paralleled, and often explained in terms of, the distinction between the abstract and the concrete. When first introducing the distinction, Kant contrasts two ways of representing something as a composite: the mind represents the concept of composition through the intellect by “using an abstract concept”, whereas the faculty of sense is used to represent “the same concept to oneself in the concrete by a distinct intuition” [Ak 2:387]. Likewise, the examples Kant gives to demonstrate the “lack of accord between the *sensitive* faculty and the faculty of the *understanding*...points only to the fact that *the abstract ideas which the mind entertains when they have been received from the understanding very often cannot be followed up in the concrete and converted into intuitions*” [Ak 2:389]. In other words, the lack of agreement between the two faculties is based on the difference between the intentional content of the mind’s representations, some of which are abstract, while others are concrete. In §10, when contrasting intuition and symbolic cognition, we are told that “thinking is only possible for us by means of universal concepts in the abstract, not by means of a singular concept

in the concrete” [Ak 2:397]. Again, the laws of intuition, which belong to the faculty of sense, are described as those by means of which we represent a concept in the concrete [Ak 2:388, 389], whereas the understanding is the faculty that enables the mind to represent abstract concepts [Ak 2:394]; and Kant specifically stresses in §6 that the concepts generated through the real use of the intellect are pure *because* they are abstract, and contrasts these concepts with those that are “given only *concretely*, and only in such a way that it is separated from the things which are joined to it” [ibid, my emphasis].

A second reason to pursue this strategy is that it may provide us with a way of resolving the various inconsistencies that arise for the other possible criterion which are supposed to ground the distinction. Take, for example, the apparent problem that space and time are both sensory representations even though they are actively generated by the mind. There is no reason to think that this problematic if the distinction between sense and intellect is grounded in the distinction between the abstract and the concrete: it may be that every representation whose intentional content is abstract cannot be given passively through affection, but from this it does not follow that every representation generated by the mind must also be abstract, and in that case, the fact that the representations of time and space are generated by the mind does not entail that they are intellectual cognitions. So long as the intentional content of these representations is not anything abstract, they will belong to sense rather than intellect. A similar strategy would also explain why the concepts generated through the logical use of the intellect are sensory even though their intentional content is general. Once again, it may be that every representation whose intentional content is abstract is also general, but from this it does not follow that every general representation must also be abstract, and in that case, so long as the intentional content of the concepts generated through the logical use of the intellect is not abstract, they will belong to the faculty of sense.²⁵² If the distinction between sense and intellect is ultimately grounded on the abstract and the concrete, then the other marks which Kant uses to distinguish these types of cognition are not basic. And in that case, if it can be shown that the distinction between sense and intellect is grounded on the abstract and the concrete, rather than singularity-generality or passivity-activity, then we would be in a position to resolve the apparent inconsistencies in the text.

But although there are a number of reasons to pursue this strategy, it also raises a number of problems. In the first place, a definition of the abstract and the concrete is required if we are to avoid explaining *obscurum per obscurius*, but this raises enormous problems since there is no consensus as to how this distinction is to be understood, either in the early-modern period or in the contemporary literature. Nor, for that matter, does Kant himself bother to explain the nature of the distinction in any detail—indeed, his

²⁵² Kant does at times assert that all general concepts are abstract, but he explains that all this means is that they are products of *acts* of abstraction (“Abstract concepts, therefore, should really be called *abstracting* concepts, i.e., ones in which several abstractions occur” [Jäsche Logic, §6, Ak 9:95]); but this does not mean that the intentional content of these concepts is something abstract in the same way as the pure concepts of the intellect. In the *Jäsche Logic*, Kant gives the example of the concept of body, which is not a concept of something abstract, but instead the concept of a thing abstracted from its size, color, hardness or fluidity (etc.), or, in other words, something abstracted from all the special determinations of particular bodies.

usage of these terms appears to *depart* from the way they were standardly defined by many of his contemporaries (as we will see momentarily). There are a number of different ways of approaching the distinction.²⁵³ One option is to define the abstract and the concrete in terms of some other metaphysical distinction which is already understood. Among the various options here, one standard approach in the early-modern period, which was especially common amongst the Wolffians, was to define the distinction in terms of universals and particulars. An especially clear illustration of this approach can be found in Baumgarten, who defines concrete entities as those that are singular, while abstract entities are universals. A singular entity is defined, in turn, as something completely determined (in the sense that, for every possible determination P, that entity is either P or not-P) and a universal entity as one that is not completely determined. The basic idea here is that if some entity is incomplete, then it is undetermined with respect to at least one pair of contradictory determinations, say P and not-P; but if some being can be determined as either P or not-P, then this determinable being must be a kind of universal since it will be common to both the being that is subsequently determined as P, as well as the other being determined as not-P—these, after all, are just determinates of that more determinable content, which means that this determinable content must be shared in common by both of those beings, and is thus universal. Finally, to represent something *abstractly*, is just to represent a determination of a singular entity in abstraction of the other determinations that belong to that thing. The intentional content of a representation is thus *abstract* when a determination of some singular entity is represented independently of the other determinations that belong to that thing.²⁵⁴

Whatever one might think about the merits of this proposal, considered in its own right, this cannot be the same notion of ‘abstract’ which Kant has in mind—even if he does appear at times to adopt it, as when he appears to argue that time and space are concrete *because* they are singular representations [Ak 2:399, 402]. When Kant distinguishes

²⁵³ For a helpful overview of contemporary attempts to explain the distinction see, Sam Cowling, *Abstract Entities* (Routledge: London & New York, 2107), pp. 69-105.

²⁵⁴ Thus, Baumgarten, *Metaphysica*, §148-149

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The collection of all determinations compossible in a being is its COMPLETE DETERMINATIONS. Hence, a being is either completely determined or not (§10). The former is SINGULAR (an individual), and the latter is UNIVERSAL. Either of these is called MORE INFERIOR with respect to all the universal things that it contains within itself, while the latter are called superior with respect to the former.

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A universal being considered in its inferior being, and a singular being considered in terms of the other predicates belonging to it beyond a certain universal, is CONSIDERED CONCRETELY, and is then called CONCRETE. However, the universal being that is indeed considered, but not in its inferior, and the singular being in which, however, only a certain superior predicate belonging to it is CONSIDERED, is considered ABSTRACTLY and is then called ABSTRACT.

Cf. John Locke, *Essay*, II.xxxii.6-8, who appears to use ‘abstract’ in much the same way. Similar accounts of the abstract-concrete can be found in the contemporary literature. Considered on its own merits, this approach does have its problems. To mention just one: the kinds of universals which are abstract on this account are not Platonic universals (which most agree are both general and abstract), but immanent universals, and although these are assuredly general, they are not obviously abstract.

between the two senses of ‘to abstract’, he insists that the pure concepts of the intellect are not abstract in the sense that they are partial (or “incomplete”) determinations of some singular entity. The intentional content of a representation which is given by omitting in thought the determinations which belong to a singular entity are universal, but the intentional content of the pure concepts of the intellect are abstract *in some other way*. In addition, if the abstract-concrete distinction is defined in terms of the universal-singular distinction, then obviously the singularity-generality of a cognition cannot be derived without circularity from the fact that it is abstract or concrete, contrary to the strategy proposed above. Consequently, whatever Kant means by ‘abstract’ and ‘concrete’, the meaning of these terms has not been simply inherited from that of his Wolffian predecessors. He must be using these terms in some other way.

Another option is to define the abstract and the concrete in terms of the sensible and the non-sensible.²⁵⁵ There is some reason to think that this may be what grounds Kant’s account of the distinction, since he frequently describes the abstract concepts of the intellect as those which are devoid of sense. But how, then, is one to define the sensible and the non-sensible? One option is to define the non-sensible as that which does not contain anything sensual as part of its content, where the sensual, in turn, is defined disjunctively as anything that is either a color, smell, shape, etc., or some determination thereof.²⁵⁶ But this appears to be too narrow: the intentional content of a *pure* intuition does not include anything sensual, but that does not make it abstract. A similar point prevents us from defining the sensible as that which can be detected by the sense organs, for once again, time and space are sensible, but they not detectable by the sense organs since they do not “strike” the senses. Moreover, if whether or not something is detectable by the sense organs depends, in part, on whether the mind forms an idea of that thing through affection, then the distinction between the abstract and the concrete will ultimately be defined in terms of spontaneity and receptivity, which again conflicts with our suggestion that these marks of a cognition are not what ultimately ground the distinction between sense and intellect.

Another way of drawing the distinction between the abstract and the concrete, which is also common in the contemporary literature, is to define the concrete as that which exists in time and space, whereas the abstract is that which does not exist in time and space. This way of drawing the distinction certainly harmonizes with much of Kant’s usage, since he claims that the concepts of time and space are *principles* of intuitive cognition which make the cognition of something in the concrete possible [Ak 2:387-388, 389]; nothing can appear before the senses *in the concrete* unless it is given in time and space [Ak 2:396-397 & 398]. Conversely, the pure concepts of the intellect are abstract since they can be used to represent immaterial entities, which are defined as beings that

²⁵⁵ A version of this approach can be found in Frege, who defines the abstract as something that is both non-mental and non-sensible. See Gottlob Frege, “The Thought: A Logical Inquiry” (*Mind*, New Series, Vol. 65, No. 259 (July, 1956), pp. 289-311.

²⁵⁶ Thus, Wolff, *Psychologia Empirica*, §77 defines “sensible object” as “what can be perceived by sense, or, what can effect some modification in the sense organs”—that is, what “can be seen, heard, smelled, tasted, or touched”. My translation.

do not exist in time and space.²⁵⁷ What this suggests is that, at the very least, one minimal criterion required for something to be concrete is that it exist in time and space. And yet this criterion cannot be sufficient: the distinction between the abstract and the concrete cannot be *defined* in terms of whether something exists in time and space, for Kant applies the term ‘concrete’ not only to the objects that appear in time and space, but also to time and space themselves. This criterion is thus too narrow, since it only applies to objects in time and space, and does not include time and space themselves. Now, one might be tempted to respond to this by asserting that time and space are concrete by definition. The problem, however, is that this would then make time and space sensory by stipulation. But when Kant asserts that time and space cannot be conceived of through pure concepts of the intellect, and can only be apprehended *in concreto*, he takes himself to be asserting something controversial. As we will see in more detail in the chapters that follow, Kant consciously opposes the attempts of Leibniz, Wolff, Baumgarten, and others, to define time and space through pure concepts of the intellect, and surely he did not believe that this alternative could be simply rejected out of hand by stipulative fiat. Indeed, one of the main goals of Sec. 3, §14-15 is to *demonstrate* that time and space are sensory—Kant *infers* that these concepts must be sensory on the basis of some independently given criterion, not by mere stipulation.

But then what is this criterion? There seem to be two possibilities. First, it may be that the distinction between the abstract and the concrete is defined by Kant in terms of some other, more fundamental metaphysical distinction, but given the inadequacy of the various options we have already canvassed, it is far from clear what other criterion might be left which could serve this purpose. There is, however, another possibility: it may be that Kant thinks that the distinction between the abstract and the concrete is not definable in terms of some other, more basic distinction, but is instead based on some primitive difference that can only be defined through ostension. There is a whole circle of terms which revolve around the sense-intellect distinction (viz., the abstract and the concrete, the material and immaterial, the sensible and the non-sensible) and presumably there must be some primitive notion at the bottom of all these terms. In that case, perhaps what

²⁵⁷ One problem here is that Kant also maintains that the abstract concepts of the intellect can be “followed up” and represented in the concrete (though, even here, their “actualization in the concrete requires the auxiliary notions of time and space” [Ak 2:397], which again indicates that existence in time and space is a mark of the concrete): “Etwas sinnlich machen heißt: Die allgemeine Idee im beispiele zeigen und das abstracte in concrete” [Ak 2:79, Refl. 206. (1769. 1770)]. But if the difference between the abstract and the concrete is truly irreducible in kind, then how can abstract concepts be given in the concrete at all? How could something abstract become concrete, or be both abstract and concrete? Kant himself does not provide any answer to this question in ID, though he does attempt to solve a very similar problem in the Transcendental Schematism in the *Critique* A137-147/B176-187. A complete discussion of the contents of Schematism would obviously take us too far afield; here I will simply limit myself to the observation that Kant’s claim that abstract concepts can be represented in the concrete does not seem to require that something abstract literally become something concrete. Frege, for example, maintains that numbers are abstract entities, but this does not prevent us from applying this concept to sensible objects, as when we say that the number of apples on the counter is five. The truth of this assertion does not require that the number 5 become something sensible, it only requires that something sensible is represented through a certain abstract concept. Although, once again, just how this is possible is a very difficult question to answer.

Kant is proposing is that the distinction between the representations of time and space, on the one hand, and the pure concepts of the intellect on the other, is based on some primitive difference which can only be defined through ostension. The basic idea, it seems, is that when we reflect on what appears before the mind when it conceives of some pure concept of the intellect, we observe that the intentional content of these concepts all share some common feature which may be designated as 'abstract'. This notion of 'abstract' is primitive and can only be defined ostensively. In turn, when we compare the intentional content of these concepts with the representations of time and space, we observe that the latter are not abstract; the intentional content of these representations is simply different in kind from those given by the intellect, and Kant uses the term 'concrete' to designate whatever it is that these representations share in common with one another and which distinguishes them from those representations which are abstract. In other words, when we reflect on the intentional content of those concepts which Kant designates as 'pure', and compare them to the intentional content of pure intuitions, we will observe an irreducible difference in kind between these representations which cannot be defined in terms of anything more basic, but which depends on our intuitive apprehension of the difference between these intentional contents. In that case, the difference between these representations would not be established by some sort of arbitrary stipulation, it would be based on the recognition of some primitive difference in the intentional content of these representations, a difference which Kant marks with the terms 'abstract' and 'concrete'.²⁵⁸

²⁵⁸ This approach is also common in the contemporary literature. For some, the difference between the abstract and the concrete is based on our observation of certain paradigm cases which illustrate the distinction, such as the difference between abstracta like numbers, pure sets, etc., and concreta like this apple, or that tree, etc. The distinction is given by reflecting on these examples, but there is no way to formulate any criterion which explains why some entities are abstract, and others concrete, since the distinction is simply primitive. See Sam Cowling, *Abstract Entities*, pp. 92-97 for a defense of this approach.

It should be noted that although some of the concepts which Kant cites, like number, are indeed widely accepted as legitimate examples of abstracta (though Kant assuredly does not think they are abstract *objects*), others are far more problematic: it is rather strange, for example, to refer to the concepts of substance and cause & effect as abstracta. These examples not only depart from most accounts of the distinction found in the contemporary literature, they also conflict with the judgments of many of Kant's contemporaries: substances, for example, were often cited as paradigmatic examples of *concrete* entities, not as abstracta—although, in this case, this is because concrete entities are often defined as singular entities, whereas abstracta are general, so that substances, as particulars, must be concrete, whereas their properties are abstract. Leibniz, *New Essays*, 217, 151, 145 claims that a substance is not an abstractum but a concretum: one conceives of something as a substance when distinct sensible qualities are represented as qualities of *one and the same subject* (ibid, 217, 218), and these qualities are abstracta when they are conceived of apart from the substance they inhere in. Moreover, Kant's usage of the abstract-concrete distinction often covaries with the distinction between the material and the immaterial, but if this means that immaterial entities are 'abstract', then we get the unorthodox result that immaterial entities like Cartesian minds, or God, are also abstract—which again, for the most part, deviates from contemporary usage. Nevertheless, it seems to me that whether Kant's use of the term 'abstract' maps onto the way others use the term is neither here nor there; although Kant's account of the distinction departs from standard usage, what matters is whether there is in fact some feature that belongs to those concepts of the intellect which deserves some special designation to mark their unique status. Kant uses the term 'abstract' to pick out this feature; when he refers to these concepts as 'abstract', he is only drawing attention to the fact that

Now, there is in fact a good deal of evidence which supports this interpretation. As we will see in more detail in Ch. 5, the arguments in Sec. 3, §14-15 which are given to show that time and space are sensory, rather than intellectual, generally turn on the fact that when we reflect on the intentional content of a pure concept of the intellect, and compare it to the intentional content of our representations of time and space, we observe that the two are irreducibly different in kind. Thus, when the mind conceives of an order of coexistence or an order of succession (the standard definitions of time and space amongst Leibnizian-Wolffians) the intentional content of these representations is something abstract, since the concepts of order, coexistence and succession, at least as defined by the Leibnizians are, for Kant, pure concepts of the intellect; but, for reasons that we will discuss later, Kant maintains that the mind could never apprehend time and space by means of these concepts—when, for example, the mind conceives of an order of coexistence, it does not thereby conceive of space, for the intentional content of the former representation omits some element contained in the latter, and this additional element is something that can only be understood by means of acquaintance. Other arguments purport to show that time and space cannot be conceived of through pure concepts of the intellect since the latter do not determine the content of the former: for example, the fundamental properties of space (e.g., that it “does not have more than three dimensions, that between two points there is only a straight line, that from a given point on a plane surface a circle can be described with a given straight line, etc.,”) cannot be “derived from some universal concept” but “can only be apprehended concretely” [Ak 2:402-403]. Geometry, which studies the fundamental properties of space, “does not demonstrate its own universal propositions by thinking an object through a universal concept, as happens in the case of what is rational”; rather, it does so “by placing it before the eyes by means of a singular intuition, as happens in the case of what is sensitive” [Ak 2:403]. The properties of time and space cannot be inferred through reason; what this means is that time and space cannot be conceived of through pure concepts of the intellect since there will always be some features belonging to the former which are not contained in the latter, and these features can only be given directly through acquaintance.²⁵⁹ Indeed, other arguments purport to show that the concepts of the intellect positively *conflict* with what we observe when we intuit time and space. For example, the concepts of part and whole are for Kant pure concepts of the intellect; Kant also maintains that it is a law of reason that whatever is a composite, or a kind of whole, is always made up of simples, and that the simple parts are what ground the existence of the whole. But time and space are not grounded in simple parts, since space is not composed of points, and time is not composed of moments—instead, these ‘parts’ are grounded in the whole, since they only exist as limits of time and space as a whole [Ak 2:405]. The mereological structure of space and

the intentional content of these concepts is distinct, in kind, from that of others. Kant’s use of these terms need not have the same meaning or connotations as it does for others.

²⁵⁹ Similarly, the argument from incongruent counterparts is used to show that the difference between right and left, or “spherical triangles from two different hemispheres” cannot be understood through abstract concepts of the intellect (or “expressed by means of characteristic marks intelligible to the mind”, but “can only be apprehended by a certain pure intuition” [Ak 2:403].

time cannot be inferred from reflecting on the pure concepts of the intellect, it can only be revealed directly through intuition.

Whether or not these arguments succeed will be the subject of the chapters that follow. What matters for our present purposes is that the basic strategy Kant employs to demonstrate that time and space are not concepts of the intellect is to show that there is never the right kind of match between the intentional content of the latter, which is always abstract, and the intentional content of the former, which is concrete.²⁶⁰ In other words, the fact that time and space cannot be conceived of through pure concepts of the intellect is what entails that these concepts must be different in kind, and this difference is one that can only be indicated ostensively by reflecting on the intentional contents of these representations. What I propose is that Kant uses the terms ‘abstract’ and ‘concrete’ to denote this difference. Whatever it is, then, that makes the pure concepts abstract, and time and space concrete, is something primitive which cannot be explained in terms of anything else, but can only be defined through ostension. That is why Kant refers to time and space as *primitive* concepts of sensibility [Ak 2:398, 402, 403; Cf. Ak 2:383]: as primitive concepts, time and space can only be understood directly through acquaintance, they can never be grasped by means of anything else which is more basic. In turn, the other representations which Kant designates as ‘concrete’ (i.e., an appearance, an abstracted sensible quality) are those which include, as part of their content, some determination that involves time and space. Time and space are primitive not only because they cannot be conceived of through pure concepts of the intellect, but also because they are conceptually prior to any other sensory concept. Since time and space are the conditions which make any other possible representation concrete, whatever exists in time and space is concrete by virtue of inheriting whatever primitive property which belongs to time and space themselves which makes *them* concrete. In that case, something is concrete if it exists in time and space, but not because the concrete is *defined* in terms of existence in time and space, but rather because there is some primitive feature which belong to time and space *themselves*, which can only be indicated by ostension, and which appearances “inherit”, so to speak, by virtue of existing in time and space.

What I propose then is that for Kant the distinction between sense and intellect is ultimately based on the difference between the abstract and the concrete, and this distinction is one that can only be defined through ostension by reflecting on the intentional contents of our representations. When we perform a survey of the mind’s various representations, we observe that the intentional content of some is abstract, whereas the intentional content of others is concrete, and these intentional contents differ from one another in such a way that one could not explain how the mind could have representations of such radically different sorts unless one postulates that the mind has at least two distinct faculties of representation. The content of these representations differ

²⁶⁰ Kant also argues that time and space must be sensory because they are singular, and this does make it appear as though the distinction between sense and intellect is in fact grounded in the difference between singular and general representations. But my claim is that this is not his only, or even his *main* reason for thinking that time and space are sensory. The exact role of these arguments will be discussed in Ch. 5.

so radically that they could not have a common origin in a single faculty, for the way the mind cognizes the one is different from the way it represents the other. If the distinction between sense and intellect is based on the difference between the abstract and the concrete then a concept is sensory just in case the intentional content of that representation is something that can only be given in the concrete, where something is concrete just in case it contains some determination of time and space or is time and space itself. A concept is intellectual, on the other hand, when the intentional content of that representation is something abstract; as abstracta, the intentional content of these concepts is not something that can *only* be given in the concrete.²⁶¹ Once it is recognized that the ultimate grounds for the distinction between sense and intellect is not based on whether a representation is general or singular, spontaneously generated or passively received, but instead on whether the intentional content is concrete or abstract, the various difficulties posed at the start of this section may now be resolved. If the distinction between sense and intellect is based on whether the intentional content of a representation is abstract or concrete, then a concept could be actively generated by the mind (like the concepts of time and space), or refer to something general (like empirical concepts), and still be sensory; so long as the intentional content of that representation can only be given in the concrete, it will belong to sense rather than intellect.

One final question worth asking at this point is whether the other criteria Kant uses to distinguish between intellectual and sensory cognitions are ultimately derived from the distinction between the abstract and the concrete, or, whether they are instead merely independent marks of those cognitions which only belong to them as a matter of contingency. Are intellectual cognitions spontaneously generated, and always general, *because* the intentional content of those representations is abstract? And are sensory cognitions always received passively and singular, because the intentional content of these representations is concrete? Clearly the answer to the second question must be 'no'. Empirical concepts are sensory since the intentional content of those concepts is always something that appears in time and space; but these concepts are also general, and that means that a cognition cannot be inferred to be singular because it is concrete. Similarly, the representations of time and space are not passively received, but actively generated, and that means that not every concrete representation is given passively through sense. In that case, there is nothing about a concrete representation which entails that it must always be given passively and refer to something singular.

On the other hand, the answer to the first question is far less clear, for at times Kant does appear to suggest that there is something about a concept whose intentional content is abstract which *explains* why it could never be given to the mind through affection and must always refer to something general. This connection is partly based on the fact that the abstract concepts of the intellect can be used to represent immaterial

²⁶¹ I add this qualification since Kant allows that concreta can be represented through abstract concepts of the intellect although, once again, just how this connection is possible is unclear. What matters for Kant is that these concepts *can* be conceived of independently of any relation to something concrete.

entities. The explanation as to why an abstract concept can be used to represent an immaterial entity is suggested in the following passage:

Accordingly, whatever the principle of the form of the sensible world may, in the end, be, its embrace is limited to *actual things*, in so far as they are thought capable of *falling under the senses*. Accordingly, it embraces neither immaterial substances, which are already as such, by definition, excluded from the outer senses, nor the cause of the world...[which] cannot be an object of the senses. [Ak 2:398]

As abstracta, the intentional content of these representations does not contain any spatiotemporal determination as an essential part of their content. And, insofar as that is the case, there is nothing preventing us from using these concepts to represent something that is immaterial, since immaterial entities are those which do not exist in time and space.²⁶² Now, keeping this in mind, Kant appears to explain the connection between abstracta and generality in the following passage:

There is (for man) no *intuition* of what belongs to the understanding, but only a *symbolic cognition*; and thinking is only possible for us by means of universal concepts in the abstract, not by means of a singular concept in the concrete. For all our intuition is bound to a certain principle of form, and it is only under this form that anything can be *apprehended* by the mind immediately or as *singular*, and not merely conceived discursively by means of general concepts. But this formal principle of our intuition (space and time) is the condition under which something can be the object of the senses. Accordingly, this formal principle, as the condition of sensitive cognition, is not a means to intellectual intuition. [Ak 2:396]

Kant begins by denying that the human mind can have any intuition of what belongs to the pure understanding: the abstract concepts of the intellect cannot be represented as singular entities, but can only be conceived of as universal concepts in the abstract. His explanation as to why this is so turns on the fact that space and time are the forms of intuition. Admittedly, Kant's reasoning is opaque, but it seems to me that the best way to reconstruct the argument here is to recognize that it turns on the implicit assumption that time and space are *principles of individuation*. This assumption is explicitly endorsed in the *Critique* (as well as the *Nova Dilucidatio* [Ak 1:409]) where Kant argues that the only

²⁶² One might object here that certain concepts of the intellect, specifically the concepts of substance and cause-effect, must contain some spatiotemporal determinations as part of their content. A substance, after all, is something that endures through time; and how can one understand a causal connection independently of succession in time? Indeed, in the *Critique*, Kant maintained that these concepts can only be legitimately employed when combined with the forms of intuition, and thus essentially involve some reference to time and space. Otherwise, these are merely empty concepts of an object in general, which have no objective validity. But this is only because in the *Critique*, Kant no longer allows the intellect to cognize things as they are in themselves—only the *schematized* concept containing spatiotemporal determinations is legitimate. On the other hand, in ID Kant still permits the employment of these concepts independently of sense, and in applying these concepts to immaterial entities, the mind represents them as outside of time and space; the sense in which they “endure” as substances, or causally interact with one another, cannot involve any spatiotemporal determinations.

way the human mind can individuate things is by representing them in different times and places (A263-265/B319-320). The basic idea is that when the mind entertains some concept, the marks of that concept will never be sufficient for determining an individual unless they are represented in some particular time and place; otherwise, no matter how determinate that concept is, it will always be possible for more than one thing to satisfy those marks in different locations in time and space—for there to be, for example, *two* entities in different locations of time and space which are qualitatively identical with respect to all their other determinations. In order, then, for something to be represented as singular by the human mind, it must be represented in time and space.²⁶³ However, when the mind conceives of a pure concept of the intellect, in abstraction of any sensible particular, the intentional content of that representation is something abstract. And, insofar as these concepts can be used to represent immaterial entities, or entities that exist outside of time and space, the abstract concepts of the intellect do not contain any spatiotemporal determinations as an essential part of their content. But if the mind can only represent something as singular if that thing appears in time and space, and the intentional content of an intellectual concept is something purely abstract which does not essentially contain any spatiotemporal determinations, then these concepts cannot refer to something singular; and if they are not singular, then the intentional content of these concepts must always be something general. If this reconstruction is correct, then from the assumption that time and space are principles of individuation, Kant *infers* that every abstract concept of the intellect must always be general.

Finally, Kant's claim that every concept of the intellect must be actively generated can also be inferred from the fact that these concepts are abstract. Though there are a couple of ways this might work, one approach is to begin by first identifying which concepts are passively received by the mind. The examples Kant gives are sensible qualities like colors, smells, tastes, etc. Now, there are two basic reasons why these concepts can only be given through affection. The first is that we observe through introspection that the mind is incapable of producing these ideas at will: even if the mind imagines some sensible quality, the idea will lack the same vivacity as an actual sensation. Second, anyone who lacks the requisite sense organs also lacks the sensations associated with that organ: no one who is blind has an idea of color, no one who is deaf has an idea of sound, etc. In other words, the ideas that are given passively are sensible qualities, and we know these ideas can only be given through affection by introspection, which reveals that we lack any power to produce these ideas at will. Now, insofar as the pure concepts of the intellect are abstract, they are devoid of any sensual content; that is why, after all,

²⁶³ One might object that this is circular if the only reason why time and space are principles of individuation is because they are singular representations. But it is not clear whether the singularity of time and space is what does the explanatory work here. Alternatively, it may be that objects can be individuated in time and space by virtue of the fact that time and space contain a manifold of parts that must exist outside one another since each part is defined by its location; for this reason, nothing that occupies one part of space or time can also cohabit another, since this would require that the parts of time and space that are occupied are identical, contrary to hypothesis. In other words, it may be that certain facts about the structure of time and space, other than their singularity, are what explain why they can function as principles of individuation. We will return to this in Ch. 5.

they cannot be acquired by abstraction from anything originally given in sensory experience. But if the only concepts given to the mind passively through affection are sensations, and the pure concepts of the intellect are not sensual, then these concepts cannot be given passively through affection. And in that case, the only alternative is that they must have been actively generated by the mind itself. The reason, then, why every concept of the intellect is actively generated by the mind is because the intentional content of those concepts is abstract.²⁶⁴

²⁶⁴ If this interpretation is correct, then we are in a position to respond to the various objections that Falkenstein raises against Kant's account of the intellect in ID (see introduction). To begin, Falkenstein objects that the only reason Kant appears to give for adopting the sense-intellect distinction is that it enables him to solve a number of otherwise intractable metaphysical puzzles. But what we have now established is that although these puzzles are used to *motivate* the distinction, the distinction is drawn on principled grounds: it is based on the observation that the intentional contents of our representations differ in that some are abstract, whereas others are concrete, and that this is an irreducible difference in kind. Although Kant *applies* this distinction to solve the various puzzles of metaphysics, the distinction is first drawn on independent grounds and his solution to these puzzles is not what justifies that distinction. The second problem with Falkenstein's interpretation is that he fails to take Kant's distinction between the real and logical use of the intellect into adequate account. Although Falkenstein recognizes that Kant draws this distinction, he fails to recognize its importance (the real use of the intellect is only described, in passing, as the faculty responsible for providing the mind with knowledge of things as they are in themselves). According to Falkenstein, for Kant the intellect is nothing more than the power the mind has to form concepts of universals through abstraction (*Kant's Intuitionism*, pp. 43-47), and Kant simply inherited the sense-intellect distinction from those of his predecessors who "thought universals could not be acquired by abstraction from sensation" (ibid, p. 29; Cf. pp. 32-33, 48). But the real use of the intellect is the faculty responsible for generating concepts, not acquiring concepts of universals by abstraction from what is given by sense—the latter is instead the proper function of the intellect in its logical use alone, and universals *are* acquired by abstraction from sensation. This oversight is what leads Falkenstein to argue that Kant provides us with no principled reason for his claim that time and space are sensory representations. According to Falkenstein, Kant's argument rests on the assumption that the intellect is fundamentally discursive, that sense gives particulars while intellect abstracts universals. But this, Falkenstein claims, cannot show that time and space are not intellectual representations unless Kant first establishes that the intellect cannot intuit singular entities; but the only argument Kant ever appears to give for that claim appears in §8, where we are told that the intellect cannot intuit singular entities since these can only be given through time and space, and time and space are sensory representations. But this, as Falkenstein notes, is obviously circular (ibid, pp. 51-52). But on my reading, there is no circularity here: the reason why time and space are sensory is because they are not abstracta, not because they are singular. Finally, Falkenstein objects that Kant never explains why a non-sensory perception cannot be singular (ibid, pp. 45-47); but, as we have just seen, the reason Kant denies the possibility of a non-sensory intuition is because time and space are principles of individuation, and since anything non-sensory will not contain any spatiotemporal determinations, it cannot be represented as singular.

Chapter 3

In Sec. 14 and 15 of the *Dissertation*, Kant attempts to establish two important theses about the representations of time and space. First, they are not acquired by abstraction from what is given by sensation; they are instead generated by the mind when it coordinates the sensations given through affection. Second, time and space are not concepts of the intellect, they are instead fundamental forms of sensory cognition. As we will see in more detail in Chapters 4 and 5, there is a good deal of textual evidence which strongly indicates that each of these claims are directed against the Leibnizian-Wolffian theory of time and space. For both Leibniz and Wolff, time and space are empirical concepts which are originally acquired, in part, from sensory experience: in order to form a concept of time, the mind must *first* have representations of succession and simultaneity, while the concept of space is acquired only after the mind first perceives objects existing outside itself and outside one another, and each of these representations are given through sensory experience. This, of course, is the very position which Kant attempts to refute in Sec.13, para. 1, and Sec. 14, para. A, where he argues that the mind could never acquire the representations of time and space from the experience of objects standing in spatiotemporal relations, since these experiences are not possible unless the mind already has the concepts of time and space. Moreover, as we will see in the remarks that follow, the Leibnizians-Wolffians also maintain that the concepts of time and space are intellectual rather than sensory: although the basic materials required for forming the concepts of time and space are originally given by sensory experience, each of these concepts are nevertheless regarded as intellectual cognitions since they only arise through certain acts of the understanding—it is through the operations characteristic of the logical use of the understanding which enable the mind to abstract these concepts from the materials given by sense.

Insofar as each of the main theses which Kant will attempt to establish in Sec. 13 and 14 are directly opposed to those defended by the Leibnizians-Wolffians, it will be useful to first give an overview of the alternative theory which Kant opposes, for not only will this help us situate Kant's arguments in their proper context, it will also put us in a position to properly assess the arguments Kant gives for each of these claims. Getting clear on the Leibnizian-Wolffian theory of time and space will be especially useful for the purpose of understanding the arguments Kant gives in support of his claim that the concepts of time and space belong to sensory rather than intellectual cognition. One puzzling aspect of Kant's exposition is that his main argument for the claim that time and space are not intellectual concepts appears to turn on the fact they are not general, discursive concepts. What is puzzling about this is that even if these arguments succeed, they alone will not yet show that the concepts of time and space are sensory rather than intellectual. As we observed in the previous chapter, Kant's distinction between the faculties of sense and intellect is based on the difference between abstract and concrete representations. Insofar as that is the case, a demonstration that time and space are not general, discursive concepts will not show that they are not intellectual; what is also required is that Kant demonstrate that time and space are not concepts of abstracta, or,

that they are not generated or conceived of through the real use of the intellect. But then why does Kant even bother with the question of whether time and space are general concepts formed through abstraction?

Presumably at least part of the answer to this question is that Kant must have felt the need to refute the alternative position defended by Leibniz and Wolff so as to clear the way for his own account of the concepts of time and space. Even if *Kant's* distinction between sense and intellect is not ultimately based on whether a concept is general or singular, the acts of reflection, comparison and abstraction are nevertheless identified as characteristic operations of the intellect in its logical use; and since these operations, as well as their products, are characteristic of at least one form of the intellect, if Kant's demonstration that time and space are not intellectual is to be complete, he must show that they are not formed through these kinds of mental activities. In other words, if Kant is to establish that time and space are sensory, rather than intellectual, then at least part of his task will be to show that these concepts are not given by abstraction in the way proposed by Leibniz and Wolff.

Of course, this cannot be the whole story, for even if these arguments succeed they will not show that time and space are sensory by Kant's *own lights*. What is also required is that Kant demonstrate that time and space are not concepts given through the real use of the intellect. But even here a careful look at the Leibnizian-Wolffian theory of space and time can help shed light on the arguments Kant will give in support of this claim. As we will see, Leibniz, as well as Wolff and his followers, all maintain that the concepts of time and space are definable through certain fundamental categories of being, such as the concepts of possibility, order, coexistence, impossibility, and ground. These concepts are among those which Kant identifies as ones which belong to the intellect in its real use. Insofar as that is the case, an exposition of the Leibnizian-Wolffian attempt to derive the concepts of time and space from the most fundamental concepts of ontology will provide us with a useful backdrop for understanding why Kant denies that time and space are concepts of the real intellect. Indeed, as we will see, although both Leibniz and Wolff explain the origin of the concepts of time and space by appealing to the kinds of operations characteristic of the logical use of the intellect, Leibniz, in contrast to Wolff and his followers, also maintains that there is another sense in which the concepts of time and space may be regarded as intellectual. As we saw in the previous chapter, a close reading of the *New Essays* reveals that Leibniz, like Kant, maintains that a concept is intellectual when the intentional content of that representation is abstract. But Leibniz, in contrast to Kant, maintains that the concepts of time and space can be defined through certain fundamental categories of being; and since Leibniz accepts that these concepts are all abstract concepts of the pure understanding, it follows that Leibniz must also allow that the concepts of time and space can be conceived of through pure concepts of the intellect in its real use (although the exact sense in which this is true will only become clear after a careful discussion of the relevant texts). This, of course, is the very position which Kant will attempt to refute in ID, and so an overview of Leibniz's position on this matter will also put us in a position to better understand Kant's reasons for rejecting it.

The main goal of this chapter is thus to provide an outline of the Leibnizian-Wolffian account of the concepts of time and space. In the first section, I start with an overview of Leibniz's discussion of the concepts of time and space as it appears in his correspondence with Clarke, since this provides the starting point later taken up by Wolff and his followers in their own expositions of these concepts. In the second section I then discuss how Leibniz and Wolff attempted to define these concepts through certain fundamental categories of being. Finally, in the third section, I will discuss the precise sense in which time and space are supposed to be intellectual cognitions for Wolff and his followers, as well as for Leibniz.

§3.1: The Leibnizian-Wolffian Account of Time and Space

Leibniz provides his most detailed exposition of how the mind forms a concept of space in the Fifth Letter of his Correspondence with Clarke.²⁶⁵ There are two main parts to Leibniz's discussion which we will focus on. In the first, Leibniz explains how the mind can construct a concept of space from the ideas it has of certain kinds of spatial relations, ideas which are themselves originally acquired from experience. The Leibnizian view on the ontological status of time and space depends, in part, upon the success of this account. For Leibniz, space and time are both "something merely relative," space is "...an order of coexistences, as time is an order of successions."²⁶⁶ But if time and space are nothing more than systems of relations, a demonstration is required which shows how the mind can form concepts of space and time which are grounded solely on the ideas we have of various kinds of relations, as well as an analysis which shows that all our spatiotemporal concepts are, at bottom, inherently relational. This is not to say that one cannot conceive of time and space as substantival entities which exist independently of the relations bodies have to one another; but Leibniz thinks that such concepts do not refer to anything that actually exists in the external world. Upon the completion of his own analysis, Leibniz then proceeds to explain the reasoning that motivates the Newtonians to go beyond a relational account to posit a substantivalist conception of time and space. The second part of his discussion is thus a diagnosis of the fallacious reasoning involved in moving from a relational account to the Newtonian view that time and space exist as independently existing containers distinct from all body.

A concise summary of the various steps involved in constructing a concept of space appears in the following passage:

[Men] consider that many things exist at once, and they observe in them a certain order of coexistence...This order is their situation or distance. When it happens that one of those coexistent things changes its relation to a multitude of others

²⁶⁵ In his correspondence with Clarke, Leibniz does not discuss how the mind forms a concept of time, but since time and space have the same status as systems of relations, one should expect that his account of how the mind forms a concept of time would be broadly similar in outline to his explanation of how the mind forms a concept of space, so that one should be able to reconstruct the former along the same lines as the latter.

²⁶⁶ L.iii.4, p. 14. Every citation to this correspondence will note the author, letter, paragraph, and page number of *The Leibniz-Clarke Correspondence* (Hackett, 2000).

which do not change their relation among themselves, and that another thing, newly come, acquires the same relation to the others as the former had...then we may say that those which have such a relation to those fixed existents as others had to them before, have now the *same place* which those others had. And that which comprehends all those places is called *space*.²⁶⁷

According to Leibniz, the mind forms a concept of space in three steps. In the first stage, the mind perceives a multitude of bodies standing in “a certain order of coexistence”, which Leibniz calls their “situation or distance.” Though Leibniz does not explain this in any detail, ‘situation’ is a technical term from *Analysis Situs*, a project Leibniz developed in a series of writings devoted to the foundations of geometry. A situation, or situs, is a set of relations that a multitude of coexistent bodies have to one another at a given time; in particular, a situation is generally described as the collection of angles and distances that are formed when lines are drawn from some arbitrarily selected, fixed reference point, to every other body that coexists with it.²⁶⁸ When a multitude of coexistent bodies, A, B, C (etc.), is given, and one of these bodies, A, is taken as a fixed reference point, one can draw a set of lines from that body to every other body that coexists with it; these lines determine the distances and angles that each of these bodies have to one another: the distance from one body to another is the shortest line that connects them, while their relative orientation is given by the angle of the line along its axes. The collection of these angles and distances at a single moment in time is what gives their situation.

The first step that is required for the mind to form a concept of space consists in observing a collection of simultaneously existing bodies standing in certain relations to one another. These observations are what enable the mind to form ideas of the particular kinds of relations that a multitude of coexistent, sensible objects stand in to one another. The kinds of ideas the mind can form by observing these relations are presumably not limited to those of distance or situation, but also any others which might be involved in perceiving those relations, such as the ideas of their left-right and up-down relations, adjacency, betweenness, etc., as well as the ideas of determinate shapes and sizes—which consist in the situation of the parts which constitute an individual body’s extension—and other modes of extension. Note, however, that the ideas acquired in this way are only of the particular spatial relations given directly through observation; presumably, however, once the mind acquires these particular ideas, it can then go on to form general concepts of these relations through processes of comparison, reflection and abstraction, viz., to obtain general concepts of distance, adjacency, etc.²⁶⁹

²⁶⁷ L.v.47, pp. 45-46.

²⁶⁸ See Vincenzo De Risi, *Geometry and Monadology: Leibniz's Analysis Situs and Philosophy of Space* (Basel: Birkhäuser, 2007), pp. 132-137 for Leibniz’s various definitions of ‘situation’.

²⁶⁹As Lorne Falkenstein has pointed out to me in correspondence, it is not entirely clear whether the passage just cited from Leibniz’s third letter to Clarke justifies the claim that, for Leibniz, we come to observe spatial relations directly through experience. Although this is suggested by Leibniz’s remark that we “*observe* in [bodies] a certain order of coexistence” (my italics), Falkenstein notes that “observe” is Clarke’s translation of “ils trouvent”, and that this is perhaps better translated as “find” or “discover.” In turn, Leibniz’s apparent commitment to the reducibility of relations appears to rule out the possibility that our ideas of spatial

One important issue that Leibniz does not address here are the psychological processes that are involved in coming to perceive these spatial relations. Leibniz does not bother to explain just how the mind comes to perceive these relations, and what role, if any, the senses play in the formation of these ideas. We are only told that the mind comes to observe a multitude of bodies standing in various spatial relations to one another *through experience*, and that it is by observing the angles and distances of coexisting bodies that the mind is able to first acquire the ideas of those relations. But no detailed explanation as to how this comes about is given here. This of course is not entirely surprising since for Leibniz's present purposes the psychological processes involved in the formation of these ideas are not important. Leibniz's primary goal in these passages is to explain how one can define concepts of space and place which make no appeal to the notion of absolute space, or, to space considered as something distinct from the relations of bodies. The experience of objects standing in spatial relations to one another is thus assumed as a given, as the starting point from which the mind subsequently proceeds to form more complex ideas, such as those of 'place' and 'space'.²⁷⁰

But for our purposes the psychological processes assumed here are important for, as we will see, Kant is going to argue that the ability to represent objects standing in various spatial relations presupposes that the mind already has a concept of space, and this claim, I will argue, is directed against the very assumption that forms the starting

relations could be given directly through observation. Many commentators have claimed that, for Leibniz, relations in general, and hence spatiotemporal relations in particular, are reducible to the intrinsic determinations of substances, and have no independent reality outside the mind. For this reason, Falkenstein proposes that, for Leibniz, our ideas of spatial relations cannot be given directly through experience; through sensory experience, we only perceive objects and their intrinsic properties, and our ideas of relations only emerge through intellectual acts of comparison performed upon the intrinsic determinations of these objects. It seems to me, however, that this reading of Leibniz's theory of relations is questionable. While many scholars, taking their cue from Russell, have claimed that Leibniz endorses the reducibility of all relations, this interpretation has been vigorously challenged by Hide Ishiguro, *Leibniz's Philosophy of Language and Logic* (Cambridge: Cambridge University Press, 2nd ed, 2001), pp. 101-153, and more recently by Richard Arthur, *Leibniz on Time, Space and Relativity* (Oxford: Oxford University Press, 2022), pp. 337-356. Cf. Richard Arthur, "Leibniz's Theory of Time" (in Okruhlik and Brown (eds.), *The Natural Philosophy of Leibniz*, 263-313), pp. 278-285 and Richard Arthur, "Leibniz's Theory of Space" (*Foundations of Science*, 2013), pp. 520-526. On the alternative reading proposed by Ishiguro and Arthur, "it is only relations considered in abstraction from determinate *relata* that are ideal. As an abstract entity, a relation is ideal, an *ens rationis*; but inasmuch as it expresses a relational property of one *relatum* (subject) or the other, it is a concrete attribute of the subject in question. It follows that space and time are ideal only insofar as they are orders of such abstract relations; but this by no means entails the ideality of spatial and temporal orders of concrete existents" (Arthur, "Leibniz's Theory of Time", p. 285). But if this interpretation is correct, nothing prevents us from taking Leibniz at his word in his letter to Clarke and allowing that the ideas of spatiotemporal relations are indeed given directly through the observations of sense, for as "concrete attributes of the subject in question", we should be able to perceive these relations directly in the same way we perceive the other modes of a body through sense.

²⁷⁰ It is worth noting here that this assumption is dialectically acceptable since the Newtonians acknowledge that space itself cannot be perceived, and that we are only ever perceptually acquainted with the relative locations of objects, so that the mind can only begin to form a concept of space after first forming the ideas of the various kinds of spatial relations presented to us when perceiving bodies. The existence of absolute space is not established through perceptual experience, but instead inferred from certain considerations based on mechanics and metaphysics. See Isaac Newton, *Philosophiae Naturalis Principia Mathematica* (Berkeley: University of California Press, 1947), p. 8.

point of Leibniz's own account. In other texts which Kant had access to, Leibniz does suggest that the senses play a role in the formation of our ideas of spatial relations. In the *New Essays on Human Understanding*, Leibniz repeatedly suggests that the ideas of these relations are first given in experience through vision and touch, though admittedly he does not explicitly discuss how this occurs.²⁷¹ This is at least implicit throughout Leibniz's discussion of the Molyneux question, where he acknowledges that we come to perceive the *shapes* of objects through vision and touch. What this seems to imply is that vision and touch also provide us with the ideas of distance, or situation, for an object's shape cannot be perceived without also perceiving the distances and angles between the parts which compose it, for these, after all, are what constitute its shape when taken together. Again, when Leibniz explains his own answer to the Molyneux question he claims, against both Locke and Molyneux, that a blind man would be able to tell the difference between a cube and a sphere as soon as his sight was restored to him and his argument for this claim is based on the fact that geometry can be learned through either sight or touch.²⁷² But if geometry can be learned through either of these senses, the ideas which form the subject matter of geometry—the ideas of figures, shapes, lines, etc.—must be acquired through sight and touch as well, although, once again, the details as to precisely how this occurs are never filled in.

What we have thus far then is that the first step required to form a concept of space consists in acquiring the ideas of various kinds of spatial relations, and that these ideas are given through experience. Through sensory experience we perceive a multitude of coexistent bodies standing in various spatial relations to one another. These experiences are based, at least in part, on sensations of vision and touch: through our sense of sight we perceive the distance between any two bodies, or parts of the same body; and we can also obtain these ideas through our sense of touch, when we feel different bodies or parts of the same body. These tactile and visual sensations are what enable us to perceive instances of various kinds of spatial relations and attributes, specifically the situation of co-existent bodies, and thus to form ideas of these relations.²⁷³

²⁷¹ Leibniz, *New Essays*, pp. 77, 124, 135-8.

²⁷² As Leibniz, *New Essays*, p. 137, notes, "geometry is most learned by sight alone without employing touch", and even those who are paralyzed are capable of learning geometry, which suggests that the sense of touch is not necessary for acquiring the ideas of geometry. On the other hand, vision is not necessary for learning these ideas since the blind are also capable of learning geometry. Although neither touch nor sight are by themselves necessary for forming ideas of shapes and figures, they appear to be individually sufficient.

²⁷³ One additional question worth asking here is whether sensation originally provides us with an idea of distance in the third dimension or instead only two-dimensional representations. In the early-modern period, it was commonly held that the perception of depth is not given immediately through visual sensations. The standard argument for this claim can be found in William Molyneux, *Dioptrica nova* (London: Benj. Tooke, 1792), p. 113. Cf. Nicolas Malebranche, *Search for Truth*, I.9.i LO pp. 40-41 and George Berkeley *New Theory of Vision*, Sec. II. The basic problem is that a visual sensation occurs when rays of light, conveyed from illuminated objects, are transmitted through the lenses of our eyes and projected onto our retinas; but, since the light from an object at any distance always strikes the retina at the *same* point, it follows that we do not see different distances along the same line of sight, since the physical effects on the retina are the same for an object at any distance from the eye. Both Leibniz and Locke allude

In the next stage, the mind constructs a concept of place from the ideas it has obtained of the various kinds of spatial relations bodies stand in to one another. After the mind acquires the ideas of distance by perceiving a multitude of coexistent bodies, it can then proceed to form a concept of place by observing the objects which stand in these relations undergoing changes in their relations of distance.

When it happens that one of those coexistent things changes its relation to a multitude of others which do not change their relation among themselves, and that another thing, newly come, acquires the same relation to the others as the former had, we then say that it is come into the place of the former; and this change we call a motion in that body in which is the immediate cause of the change.²⁷⁴

When an object remains at the same distance to another set of objects (all of whose members, we are assuming, also maintain the same distance to one another), we say that the first object is at rest; in contrast, if an object should change its relation of distance with any of the members of that set of objects, then we say that the object has changed its place. The notion of *sameness* of place arises when we perceive two objects standing in

to this issue in the course of a discussion over the fact that what we see is not determined solely by what is given through the senses, but also by judgments which the mind is innately disposed to make. One example Locke gives is that when we look at a globe painted on a flat surface, we perceive it as a sphere, even though, strictly speaking, what is immediately present in our visual field is a flat circle. According to Locke, we perceive the globe on a flat surface as a sphere by virtue of an intervening judgment which “alters the appearance into [its] cause”, and this judgment is based on certain visual cues, such as the “alterations of light according to the shapes of their surfaces”. In other words, since light is reflected differently off of different parts of its surface, the mind judges that what it sees is not flat but instead has some curvature, and this is what causes us to perceive the circle as a sphere. And it is precisely because this judgment is natural that in visual perception we so frequently confuse what belongs to judgment with what belongs to vision proper. See John Locke, *Essay*, Bk. II.ix.8-10. In his commentary on this passage, Leibniz agrees with Locke, noting that this is “how a painting can deceive us” (*New Essays*, p. 135). Similarly, when discussing the Molyneux question, Leibniz begins by describing what the newly sighted blind man would see, and he claims that, at least initially, “it will not at once occur to him that these paintings of them (as it were) that he forms at the back of his eye, which could come from a flat painting on the table, represent bodies.” The reason is because the retinal images are flat, and are like “paintings (as it were) that he forms at the back of his eyes,” so that depth will not be immediately perceived by someone whose sight has been restored. Leibniz then explains that this individual will only come to learn that these images represent three-dimensional bodies “by the sense of touch or when he comes, through applying principles of optics to the light rays, to understand from the evidence of the lights and shadows that there is something blocking the rays and that it must be precisely the same thing that resists his touch” (*New Essays*, p. 138). What Leibniz appears to be suggesting here is that the perception of depth is either given through our tactile sensations, or through reasoning done in accordance with innate principles of natural geometry. This appeal to innate principles of geometry in order to explain our ability to perceive depth was most prominently defended by nativists like Descartes and Malebranche, and it appears that Leibniz is at least sympathetic to this position, though he also appears to allow that three-dimensional spatial information can be given solely through sensations of touch. It is thus not entirely clear as to whether Leibniz is an empiricist or a nativist on the question of how the mind comes to perceive depth. Nevertheless, even if Leibniz thinks that our ability to perceive depth cannot be explained by sensation alone, this does not mean that the other ideas we have of spatial relations are not given through sensation—specifically those which Leibniz identifies as the ones necessary for forming a concept of space—for the ideas given through vision and touch do appear to provide us with the ideas of two-dimensional spatial relations, and this, in turn, is sufficient to give us ideas of length, distance, etc., or the ideas of the kinds of spatial relations which Leibniz thinks are required to form a concept of space.

²⁷⁴ L.v.47, p. 46.

the same set of distance relations to those objects at different times. So, for example, if at a given time t_2 , B is related to C, D, and E in the same way that A was related to C, D, and E, at time t_1 , then we say that B, at t_2 , occupies the same place that A occupied at t_1 . To say, then, that B is in the *same place* as A is just to say that B now stands in the same set of relations to a set of objects (which, we assume, have not changed their relations of distance to one another) which A did at t_1 .

It is worth noting that Leibniz does not think it is necessary that we actually observe these bodies undergo a change in their relations to one another, for it is enough if we can simply imagine them doing so.

And though many, or even all, the coexistent things should change according to certain known rules of direction and speed, yet one may always determine the relation of situation which every coexistent acquires with respect to every other coexistent, and even that relation which any other coexistent would have to this, or which this would have to any other, if it had not changed or if it had changed in any other way. And supposing or feigning that among those coexistents, there is a sufficient number of them which have undergone no change, then we may say that those which have such a relation to those fixed existents as others had to them before, have now the *same place* which those others had. And that which comprehends all those places is called *space*.²⁷⁵

In other words, we can construct the concept of place by simply entertaining certain counterfactuals about the bodies we perceive standing in relations to one another. We can form the concept of *same place* if we merely consider that some body, A, *could* have occupied the same place as B, where this just means that we can imagine B, instead of A, standing in the same relations to C, D, and E at t_1 that A, in fact does, at that time. The concept of place is thus formed by first holding every body that appears in a situation fixed, and then imagining one of those bodies being substituted for another, either by imagining another body moving into the place of the first or by simply abstracting the first in thought and substituting it for the other.

The third, and final step, required to form a concept of space consists in taking the concept of place and then forming the idea of the collection of all these places together, for the concept of space, we are told, is nothing more than the idea of “that which comprehends all those places”.²⁷⁶ As Vailati notes, this last claim is unclear, for presumably Leibniz “did not mean that space is that *in* (in a spatial sense of ‘in’) which places are under pain of circularity.”²⁷⁷ Space does not comprehend all those places in the sense that they are themselves located in space, as though the collection of these places were thought of as being in some other thing, space *itself*. But Leibniz expresses the point somewhat differently in another passage, writing that “*space* is that which results from

²⁷⁵ L.v.47, p. 46.

²⁷⁶ L.v.47, p. 46.

²⁷⁷ Ezio Vailati, *Leibniz and Clarke: A Study of Their Correspondence* (New York: Oxford University Press, 1997), pp. 114-115 proposes, and rejects, two other ways of interpreting the relation between space and places.

places taken together.”²⁷⁸ Although this is not much clearer than before, presumably what he has in mind is that, in the same way that one forms an idea of A’s place, one can also form an idea of the place of C, D, and E, etc., or any other body, and the concept of space is just the mereological sum of all these places taken together: we form this concept when we conceive of all of those places existing together side by side.

In his third letter, Clarke had objected that space and time cannot be an order or a situation, since “space and time are quantities, which situation and order are not.”²⁷⁹ But Leibniz is careful to note that this objection rests on a confusion, for his considered view is that space is neither an order nor a situation but instead an order of situations.

I do not say that space is an order or situation which makes things capable of being situated; this would be nonsense. Anyone needs only consider my own words and add them to what I said above (no. 47), in order to show how the mind comes to form to itself an idea of space, and yet there need not be any real and absolute being answering to that idea distinct from the mind and from all relations. I do not say, therefore, that space is an order or situation, but an order of situations, or (an order) according to which situations are disposed, and that abstract space is that order of situations when they are conceived as being possible. Space is therefore something ideal.²⁸⁰

Richard Arthur has carefully explained the various distinctions made in this passage by appealing to the different levels of abstraction involved in the Leibnizian construction of space.²⁸¹ At the lowest level, Leibniz defines a situation as the arrangement of parts that constitute a body’s extension. Each individual body is made up of an arrangement of distinct parts and, as before, if one of these parts is taken as a fixed reference point, one can draw lines from that part to every other part that coexists with it so as to determine the distances and angles that each of these parts have to one another.²⁸² The collection of these angles and distances at a single moment in time is a concrete situation.²⁸³ Next, an order of situations is given when the situations of every coexistent body in the actual world are taken together. The set of all concrete situations in the actual world constitutes a concrete space. At the next level of abstraction, Leibniz distinguishes between concrete

²⁷⁸ L.v.47, p. 46.

²⁷⁹ C.iii.4, p. 19.

²⁸⁰ L.v.104, pp. 60-61.

²⁸¹ Richard Arthur, “Leibniz’s Theory of Space” & Richard Arthur, “Space and Relativity in Newton and Leibniz”, *The British Journal for the Philosophy of Science*, Vol. 45, No. 1 (March, 1994), pp. 235-238. Cf. Ezio Vailati, *Leibniz and Clarke*, p. 115-116.

²⁸² At the start of the passage cited above, where Leibniz explains how the mind constructs a concept of space, he appears to define a concrete space as the situation that results when one body is taken as a fixed reference point and lines and angles are drawn to other bodies; in contrast, in this passage a concrete space is given when a part of a single body is taken as a fixed reference point. But there doesn’t appear to be any real inconsistency here; what matters is just what is taken as a fixed reference point, viz., a part of an individual body or instead a whole body.

²⁸³ As Arthur notes, the reason this is restricted to a single moment in time is because these relations are constantly changing from one moment to the next. Richard Arthur, “Space and Relativity in Newton and Leibniz”, pp. 237-238.

and abstract space. An abstract space is the order of situations given by a concrete space when it is “conceived as being possible”²⁸⁴: an abstract space is a way of representing the order of situations given by a concrete space as an abstract structure, it is, effectively, a mathematical representation of space, or, of space as it is studied in geometry.²⁸⁵ A concrete order of situations is represented mathematically when we conceive of a concrete space, or the order of situations in the actual world, in *abstraction* of all bodies, while at the same time preserving in thought the order of their situations. An abstract space is thus an order of all possible situations, for since we can conceive of any number of different bodies having these same relations of situation, the order of situations conceived in the abstract will consist of all such possible relations.

What this account is supposed to show is that the mind can form concepts of place and space solely through the ideas it acquires observing the varying relations of distance that a multitude of objects have to one another. More importantly, Leibniz thinks this also shows that there is no need to imagine that the concept of place corresponds to some entity—the *place* of an object—which is distinct from these observed relations.

This shows that, in order to have an idea of place and consequently of space, it is sufficient to consider these relations and the rules of their changes, without needing to fancy any absolute reality out of the things whose situation we consider.²⁸⁶

There is no need to hypostatize the place of an object, and imagine that it exists as something distinct from the relations objects have to one another, for the concepts of place and space formed by observing the relations of situation and distance of objects are the only ones that correspond to the way space and place *actually* exist.

With his own account of how the mind acquires concepts of place and space in hand, Leibniz then proceeds to argue that the Newtonian view is based upon the mistaken hypostatization of place and space. Whereas Leibniz reduces space and place to relations, on the Newtonian view these concepts refer to real entities distinct from the order of situation of objects.

And here it may not be amiss to consider the difference between place and the relation of situation which is in the body that fills up the place. For the place of A and B is the same, whereas the relation of A to fixed bodies is not precisely and individually the same as the relation which B (that comes into its place) will have to the same fixed bodies; but these relations agree only. For two different subjects, such as A and B, cannot have precisely the same individual affection, since it is impossible that the same individual accident should be in two subjects or pass from one subject to another. But the mind, not contented with an agreement, looks for an identity, for something that should be truly the same, and conceives it as being extrinsic to the subjects; and this is what we call place and space. But this can only

²⁸⁴ L.v.104, pp. 61.

²⁸⁵ Richard Arthur, “Space and Relativity in Newton and Leibniz”, p. 234.

²⁸⁶ L.v.47, p. 46.

be an ideal thing, containing a certain order, in which the mind conceives the application of relations.²⁸⁷

There is a good deal to unpack in this densely argued passage. Leibniz begins by distinguishing between place and the relation of situation. Though he originally appeared to use the term ‘situation’ to refer to the system of relations that define the distance and angles of a *collection* of bodies, here Leibniz uses it to refer to an individual accident of a single body (“...the relation of situation which is *in* the body that fills up the place” [ibid, my emphasis]). What he appears to have in mind is the particular arrangement of the parts that together make up a single body. A situation is now the way in which the parts of a single body are arranged in relation to one another, and this situation is an accident of that body; and, specifically, the particular accident Leibniz has in mind is a body’s extension.²⁸⁸ Next, Leibniz claims that the relation that A and B have to C, D, and E at t_1 and t_2 —i.e., the location or place of A and B—is not an identical relation at both times (“...that the relation of A...is not precisely and individually the same as the relation which B...will have” [ibid]). The reason given is that A and B are made up of different parts, and since the relata which stand in these relations are different, the relations A and B have to C, D, and E at t_1 and t_2 must also be different. Leibniz argues for this claim—that the relation of place that A and B have to C, D, and E, must be different—by appealing to the fact that “different subjects...cannot have precisely the same individual affection.” On its face this is a puzzling claim: for the Newtonians, a location is not a property of a body, it is an entity distinct from body which a body occupies. But the reason why Leibniz thinks he is entitled to characterize the Newtonian view in this way is because he takes himself to have already shown that, contrary to appearances, the Newtonians must, in fact, conceive of a location as a finite property of a body, and in particular, that a body’s location is the same as that body’s extension—unless, that is, they are willing to accept certain unpalatable, theological consequences.²⁸⁹ Clarke himself acknowledged in his

²⁸⁷ L.v.47, pp. 46-47.

²⁸⁸ As Leibniz, *The Leibniz-Des Bosses Correspondence* (New Haven, CT: Yale University Press, 2007), pp. 363-365 notes in a letter to Des Bosses dated May 29, 1716.

...I conceive of *extension* as the order of coexistence of parts outside of parts, which is explained in terms of *distances*, that is, the magnitude of the shortest path from one of the distant things to another. Next you ask whether extension is a mode of body or something absolute. You prefer the latter...[But] if extension is nothing other than the order according to which parts are outside of parts, then it is indeed nothing other than a modification of matter. Conceiving of extension as an absolute thing arises from the fact that we conceive of space in the manner of a substance, when it is no more a substance than time. And thus the Scholastics long ago correctly said that space without things is something imaginary, like number without a thing numbered. Those who think otherwise lead themselves into amazing difficulties. I think it is no more true that extension remains when monads are removed than that numbers remain when things are removed.

²⁸⁹ Much of the argument here depends upon the discussion which immediately precedes this section (L.v.38-48, pp. 44-45). Leibniz’s original objection to the Newtonian view was that if space is absolute and real, then it would have to exist independently of God, a conclusion which is theologically unacceptable. Clarke responded by claiming that absolute space is a property of God, a claim which, he thinks, allows him to accept that time and space always co-exist with God while denying that they exist independently of him: space and time co-exist with God as his properties, but they are still ontologically dependent on him for the same reason that any property is dependent upon the substance it inheres in. Leibniz’s initial response to

third letter, that “Space is not a being, an eternal and infinite being, but a property or a consequence of an infinite and eternal being.”²⁹⁰ In response to this claim that space is a property of God, Leibniz had objected that, if infinite space is a property, then so too are finite spaces, but finite spaces cannot be properties of God since then God would have finite properties. Granting, for the sake of argument, that infinite space is a property, and that finite spaces cannot be properties of God, Leibniz then argued that the only plausible alternative for the Newtonian is to say that a finite space is a property of a finite body, and the only property of a body which a finite space could be is a body’s extension. Continuing on this previous line of thought, Leibniz now applies these points—somewhat tendentiously—to the present question of whether the relations of place that A and B have to bodies outside them at different times are identical relations or not. Assuming that place is an attribute of a body, Leibniz argues that it is impossible for two bodies to have the same individual accident, for B to be made up of the same arrangement of parts that make up A. No two bodies can have the same extension, for if A and B are composed of the same parts then they are identical. Nor, for that matter, does B come to acquire the disposition of A’s parts, or A’s extension, when it comes to stand in the same relations to C, D, and E at t_2 which A did at t_1 , for this would require an accident to temporarily exist outside of a substance before another acquires it, so that these “subjects will leave off their accidents, like clothes, so that other subjects may put them on.”²⁹¹

Nevertheless, although these relations of place are different, they do *agree* with one another, and this agreement, Leibniz tells us, is precisely what leads the Newtonians to mistakenly form the belief that there must be some entity, the place of a body, which is distinct from its occupants—for only this, it is claimed, could explain the agreement of

this claim was to draw a distinction between God’s immensity and the immensity of space: the immensity of space and the immensity of God are distinct properties, and the former, unlike the latter, is not a property of God. But when Clarke appeared unwilling to grant this distinction, Leibniz proceeded to give a series of additional arguments against the stronger claim that space could be a property at all, either of God or of any finite thing. His argument begins with the claim that if infinite space is a property of God, or is identical to God’s immensity, then finite space must be a property of a finite body. We know that finite spaces exist since they are just regions of infinite space, but we also know that a finite space cannot be a property of God, since God has no finite properties. So, if space is a property, then finite space must be a property of a finite body and, according to Leibniz, the only plausible candidate here is a body’s extension. But a host of problems arise as soon as this claim is accepted. The first problem is that when a body changes its place it does not lose its extension, but it should if its space is the same as its extension. The extension of a body is not the same as the extension of the space that body occupies, for if a body moves, or undergoes a change in its location, its extension remains the same although its position changes. But this implies that the extension of a body and the space it occupies are not the same, or that the extension of the space is not a property of that body (L.v.37-38, p.44). Leibniz also argues that if finite spaces are properties, then different substances would come to share the exact same properties when they occupy the same spaces, which is impossible, since that would require that properties pass from one subject to another in the same way that clothes can be exchanged from one person to the next. If we grant that a finite part of space is a property of the material substance which occupies that space, then when one substance changes place with another, it would seem that the first leaves behind one of its properties, while the new substance that comes into this place acquires that property. This, however, is also absurd, since it requires that this property exist, at some point, without belonging to any substance, which is impossible since no property can ever exist apart from a substance (L.v.39, p. 44).

²⁹⁰ C.iii.3, p. 19.

²⁹¹ L.v.39, p. 44.

these relations. This, according to Leibniz, is the reason why many are tempted to think that space is an entity that exists independently of body. After observing two distinct entities in the same place at different times, the mind begins to imagine that the position of A at t_1 and B at t_2 must be something distinct from these two things. Assuming that there must be some one thing that remains the same at both t_1 and t_2 —the *place* of A and B—and noting that this thing cannot be identical to either A or B, since neither remains in the same distance relations to C, D, and E at both times, the mind infers that there must be some third thing, the *place*, which does remain the same at both times and is thus distinct from both these occupants. And once it is assumed that a location is an entity that exists independently of the bodies that fill it, the next step is to infer that the spatial relations bodies have to one another are grounded in a prior relation to the parts of space, for since objects come to stand in spatial relations to one another by first occupying distinct positions in space, all spatial relations apply only derivatively to the bodies which occupy those positions. And from here it is but a short step to the Newtonian view that space is an independently existing entity, for by putting all these places together one then forms the idea of a container that exists independently of bodies and which those bodies collectively occupy.

These remarks are presented as a diagnosis of how the Newtonians mislead themselves when they form the belief that space is a container which exists independently of bodies. The Newtonian concept of place, regarded as something distinct from bodies, or as a thing that bodies occupy, is a purely imaginary notion that arises through hypostatization. Since no two bodies can ever occupy the same place, the notion of ‘sameness of place’ is merely an imaginary idea that the mind invents, it is a product of hypostasizing a mere abstraction and then treating it as though it were a concrete entity existing in the world.²⁹² But since it has already been shown that the relations this idea is based upon cannot be identical, the Newtonian view can be rejected as a mistake that rests upon a false hypostatization.²⁹³ Indeed, Leibniz refers to Newtonian space as an abstraction, and as an ideal entity which only exists in the mind: it is an abstraction since it is nothing more than the order of situations of some multitude of bodies conceived *in abstraction* of the bodies standing in those relations. Although the concrete spatial relations of bodies are real, the order, considered apart from those bodies, is ideal. Newtonian space is thus “imaginary” since it is nothing more than a mathematical abstraction that only exists in thought, not in reality, in much the same way as other abstract structures like a genealogical tree:

In like manner, as the mind can fancy to itself an order made up of genealogical lines whose size would consist only in the number of generations, in which every person would have his place...And yet those genealogical places, lines, and spaces, though they should express real truth, would only be ideal things.²⁹⁴

²⁹² Cf. *Ibid*, p. 47.

²⁹³ Cf. *Ibid*, p. 47).

²⁹⁴ L.v.47, p.47. Cf. Wolff, *Ontologia*, §110-111 for his definitions of an imaginary concept.

The individual members of a family stand in various familial relations to one another and these relations can be represented graphically in the form of a tree, where each node is occupied by a member of the family and lines from one node to another indicate the manner in which these individuals are related to one another. After constructing such a tree, one can abstract away the individuals who occupy those nodes to form a concept of the relations these individuals have to one another in the tree. When one does so, what remains is a purely abstract structure that represents these relations in abstraction of their relata. But obviously these relations, considered in abstraction of the individuals who occupy the nodes in the tree, are not real entities of any sort but merely abstractions and only exist as ideal things. And the same is true of both time and space.²⁹⁵

The Leibnizian theory is thus a reductive account. For Leibniz, the place of an object is something purely relational, it is not, *pace* Newton, some third thing distinct from the bodies that stand in spatial relations to one another, or, in other words, some entity that exists apart from its occupants. It is instead a relation defined by the order of situation that one body has to other bodies. In turn, space is nothing more than the concept of the collection of all these relations. The Leibnizian account is reductionist precisely because ‘space’ in the Newtonian sense does not really exist at all, at least not as anything metaphysically real. Space only exists as a system of relations that bodies have to one another, so that the reality of space is reduced to the reality of bodies and their relations. Though Leibniz acknowledges that we can form a concept of space which refers to something other than these relations, this concept does not correspond to anything

²⁹⁵ Note that the sense in which space and time are said to be ideal is that they do not exist in the external world as independently existing containers, but rather only exist in the mind as abstractions. As Leibniz writes in a letter to De Volder, certain “modern philosophers...have made use only of incomplete and abstract, i.e., mathematical, notions, which thought supports but which nature does not recognize in their pure form, such as the notions of time, of space, i.e., a purely mathematically extended thing, of merely passive mass, of motion considered mathematically, etc.” *The Leibniz-De Volder Correspondence* (New Haven: Yale University Press, 2013), p. 259. Time and space are ideal, in this sense, in much the same way as other abstract entities, like numbers, a comparison which Leibniz frequently makes. In the *New Essays*, pp. 126-128 Leibniz responds to the claim that the extension of a body is distinct from the extension of the space it occupies, by claiming that the difference between concrete and abstract space is comparable to the difference between number and the things numbered.

...although it is true that in conceiving body one conceives something in addition to space, it does not follow that there are two extensions, that of space and that of body. Similarly, in conceiving several things at once one conceives something in addition to the number, namely the things numbered; and yet there are not two pluralities, one of them abstract (for the number) and the other concrete (for the things numbered). In the same way, there is no need to postulate two extensions, one abstract (for space) and the other concrete (for body). For the concrete one is as it is only by virtue of the abstract one: just as bodies pass from one position in space to another, i.e., change how they are ordered in relation to one another, so things pass also from one position to another within an ordering or enumeration—as when the first becomes the second, the second becomes the third, etc. In fact, time and place are only kinds of order; and an empty place within one of these orders (called ‘vacuum’ in the case of space), if it occurred, would indicate the mere possibility of the missing item and how it relates to the actual.

Space is an abstraction like number, in the sense that it is just the order of situation considered *in abstraction* of the bodies in that order. But this order of situations does not actually exist as some sort of entity, any more than the quantity (or number) of a body exists independently of some body. Space and number only exist as abstractions in thought, not as independent entities that exist in the external world.

real, but is instead a purely imaginary entity that only exists in the mind, in much the same way as other mathematical abstractions, like numbers. Leibniz maintains that space, and all our spatial concepts, can be analyzed in terms of the relations that obtain between bodies, that all our spatial notions are inherently relational and can be defined in terms of certain kinds of relations. Thus, the concept of place is reduced to the relations of distance and situation; the concept of motion is reduced to changes in relations of place, and so on. Once our spatial concepts have been reduced to the concepts of these relations, there is nothing left to be analyzed. These analyzes together entail the conceptual priority of certain spatial concepts to others. For Leibniz, the concept of situation is conceptually prior to the concept of place, both in the order of definition, since a place is defined in terms of situation, as well as the order of acquisition, since the mind must first acquire concepts of these relations before it subsequently forms a concept of place.

In contrast to the attention he devotes to explaining how the mind forms a concept of space, Leibniz has comparatively little to say about how the mind forms a concept of time. Leibniz himself never provides a detailed explanation of how the concept of time is acquired—at least in any publications that Kant would have had access to—and the preciously few passages left to us largely pertain to the ontology of time, a fact that probably explains why so many commentators have identified Locke as the target of Kant’s criticisms in the first argument of the metaphysical exposition of time. The closest Leibniz ever comes to providing such an account is in his discussion of Locke’s theory in the *New Essays*, but even there his discussion is limited to questions concerning the idea of duration and how the mind measures the passage of time and the movement of bodies in space.²⁹⁶ At least part of the reason for this neglect is that, on the Leibnizian view, time and space have the same status as systems of relations. Time, like space, is not an independently existing entity distinct from events, a container that events occupy in the same way that bodies are supposed to be contained in space, but is instead “something purely relative.”²⁹⁷ Although Leibniz does not devote any detailed discussion to the concept of time, the fact that time and space have the same status as systems of relations should lead one to expect that his account of how the mind forms a concept of time would be broadly similar in outline to his account of how the mind forms a concept of space (“the analogy between time and space will easily make it appear that the one is as merely ideal as the other”²⁹⁸), so that one should be able to reconstruct it along the very same lines.

The first step involved in forming a concept of space consists in perceiving a multitude of simultaneously existing bodies, or, by first acquiring ideas of the particular spatial relations that a collection of coexistent bodies have to one another. In much the same way that we form the idea of space by starting with an idea of situation, the idea of time is acquired by first obtaining ideas of succession and simultaneity, or, by first forming concepts of certain kinds of temporal relations. In the *New Essays*, Leibniz expresses his agreement with Locke that the mind begins to form a concept of time by

²⁹⁶ *New Essays*, pp. 151-156.

²⁹⁷ L.iii.4, p. 14. Likewise, in the *New Essays*, p. 127 we are told that “time and place are only kinds of order.”

²⁹⁸ L.v.49, p. 48.

first attending to the fact that the ideas it has succeed one another. Through experience the mind is presented with “a constant train of ideas,” a series of ideas which successively appear one after another, and these “changes in our perceptions prompt us to think of time.”²⁹⁹ But Leibniz says little else as to precisely how these experiences enable us to form an idea of time.³⁰⁰ A slightly more detailed account is, however, provided by Christian Wolff in the *Ontologia*. According to Wolff, it is by “attending to the continuous succession of successive things” that “we have the notion of time”;³⁰¹ that is, the mind obtains an idea of time through the experience of a sequence of existents.

If attending to the continuous succession of successive things A, B, C, D, etc., we distinguish the existence of A itself from the existence of B itself, the existence of B itself from the existence of C itself, the existence of C itself from the existence of D itself, etc., to the extent that in such an order they follow one another in turn, so that A is the first, B the second, C the third, D the fourth etc., we have the notion of time.³⁰²

Though it is not entirely clear what is involved in this act of “attending” [*attendentes*] to a succession, presumably all Wolff means is that the mind must be consciously aware of the fact, or at least recognize upon reflection, that the objects it represents are succeeding one another. This requires, as Wolff tells us, that we distinguish [*distinguiamus*] the existence of each member of the sequence from the existence of those which precede and follow, so that, for example, when we begin to perceive B, we recognize that this entity is distinct in its existence from the entity that was perceived a moment ago, namely A. To distinguish these entities in their existence only means that we recognize that the entity perceived now is not identical to the entity perceived a moment ago, even if these entities are qualitatively similar in their observable properties. Wolff illustrates what he has in mind through a series of examples.³⁰³ While standing on the side of a railroad track observing a moving train pass by, I perceive each individual boxcar (e.g., A, B, C, etc.,) pass by one after another: the mind perceives boxcar A, then boxcar B, followed by boxcars C and D, etc., Having first received each of these distinct ideas through sensation,

²⁹⁹ *New Essays*, p. 152.

³⁰⁰ Locke, *Essay*, II.xiv.3 claims that our idea of time is obtained from sensation and reflection. Specifically, he believes that the idea of time is obtained after we have first acquired an idea of duration, the acquisition of which is explained as follows:

It is evident to anyone who will but observe what passes in his own mind, that there is a train of ideas which constantly succeed one another in his understanding, as long as he is awake. Reflection on these appearances of several ideas one after another in our minds, is that which furnishes us with the idea of *succession*: and the distance between any parts of that succession, or between the appearance of any two ideas in our minds, is that we call *duration*.

³⁰¹ *Ontologia*, §571. All translations from Wolff’s *Ontologia* are my own, though I was provided with assistance for some of these translations by Ian Drummond & Kendall England.

³⁰² *Ibid.*

³⁰³ I have elected not to use Wolff’s own examples since they are rather clunky and the point which they are intended to illustrate is just as easily explained by the example I give in the text. Wolff’s own examples involve the motion of water as it is poured through the hole of a dish, while another concerns the motion of a sphere as it travels along a straight line. A third example is that “we observe that we have a notion of time when we attend to the various continuous perceptions in the mind” *Ontologia*, §571.

the mind then proceeds to reflect on the various relations that obtain between these ideas, noting, while perceiving boxcar C, that it is distinct from boxcar B, since the first idea exists when the later does not, and that boxcar B is likewise distinct from boxcar A, and so on. Having observed boxcar C after boxcar B, and having recognized that the idea of boxcar C is distinct in its existence from boxcar B, the mind then observes that these two ideas stand in a certain ordered relation to one another, namely, one idea exists first, when the other does not, while the other idea exists second, or, that one follows or *succeeds* the other. It is by directly observing each member of this sequence one by one, and recognizing that each member in this series is distinct in its existence from the next, that the mind obtains the idea of succession. The idea of succession is thus given by the experience of a succession of ideas, together with an act of the understanding which compares these ideas and determines that they exist as distinct entities. The concept of simultaneity is obtained in a similar way: if I hear a train-whistle while seeing boxcar B, one can then form an idea of simultaneity by noticing that these two *distinct* things co-exist with one another, that the ideas of B and C are simultaneous since they stand in the relation of coexistence with one another.

As before, once the mind has formed ideas of succession and simultaneity, the next step is to then construct the concept of a position in time. One can begin to understand how this might be done by adapting Leibniz's account of how the mind forms the concept of a position in space. The place of an object is given by the relations of situation that one thing has to other objects outside it. After the mind first observes a multitude of coexisting bodies, it can then imagine some member of that set being replaced by another while every other body in the order of situations remains fixed; the concept of a location in space is then formed by reflecting on what these different bodies share in common with one another when they stand in the same set of relations of situation at different times. Analogously, the mind constructs the concept of a location in time from the ideas it has obtained of the various kinds of temporal relations things stand in to one another. As before, locations in time are defined in terms of the sameness of temporal relations. First, if we take some event, such as B, as a fixed reference point, we can then define sameness of time in terms of coexistence, for one thing exists at the same time as B if they coexist with one another. Next, the concept of *same time* is formed by entertaining certain counterfactuals: if C, D, and E coexist with B, we can imagine some other thing, A, coexisting with C, D, and E, instead of B, or, in other words, we can imagine A, instead of B, standing in the same relation of coexistence to C, D, and E that B does. Sameness of time is thus defined in terms of the sameness of a relation: A exists at the same time as B just in case A stands in the same set of relations to a set of things which B does, and anything that has the same relation to C, D, and E that B does exists at that location in time. Once we form the idea of a single location in time, we can then combine this idea with the idea of a plurality of moments existing one after another, an idea given by the experience of a succession. The concept of time, as a succession of moments, is formed by combining the idea of a place in time with the idea of succession.

Finally, after the mind forms the ideas of the particular temporal relations these things have to one another, it can then proceed to form an idea of these relations in abstraction of the particular things that either succeed or exist simultaneously with one another. After the mind has formed the concept of *same time*, it can then proceed to form a concept of a location in time, or the time at which something exists, by abstracting in thought the particular things that stand in that relation so as to consider that relation on its own, in abstraction of those things: thus, the mind forms the concept of the time at which B exists, as something existing in abstraction of B, by reflecting on what A and B share in common with one another when entertaining those counterfactuals—namely, the relation A and B have to C, D, and E—and abstracting away whatever is different—i.e., the particular things A and B—so as to form the concept of this relation as something existing in abstraction of A, B, or any other thing. Likewise, if B succeeds A, one can imagine some other objects, such as C and D standing in the same relation to one another as B has to A, and by comparing what is similar in each of these cases, and abstracting what is different, one forms the idea of the relation of succession in abstraction of the particular things that succeed one another. When the mind forms an idea of these relations in abstraction of the things that exist simultaneously and successively it then has an abstract idea of time. That is, one forms an abstract concept of time by starting with the concept of a place in time, in abstraction of things that exist at that moment, and then combining in thought every other such moment by thinking of them existing together one after another. The abstract concept of time is just the idea of all these distinct moments taken together in abstraction of the things that stand in those relations, in the same way that an abstract concept of space is formed by taking the idea of all places together. But, as before, it would be a mistake to hypostasize these relations and imagine that time exists independently of the things that stand in these relations, or that time is an entity distinct from the things that follow one another and which those things occupy, for this idea of time is purely abstract and ideal, and does not correspond to anything that exists in the external world.

Section §3.2: The Derivation of Time & Space from the Fundamental Categories of Being

Having explained how the mind forms the concepts of time and space, the next step is to discuss how these concepts are to be defined. Throughout the writings of Leibniz as well as his followers, time is generally defined as an “order of succession”, while space is defined as an “order of coexistence.”³⁰⁴ Following Leibniz, Christian Wolff defines time as the successive order of existents in a continuous series and space as the “order of simultaneous [things]”;³⁰⁵ similarly, space is also defined as “the order of those things that exist at the same time”³⁰⁶, specifically when these things are both “*external to us and external to each other*”.³⁰⁷ And in Baumgarten’s *Metaphysica*, we are told that “The order of simultaneous beings that are posited mutually outside of each other is SPACE, and that

³⁰⁴ L.iii.4, p. 14. In *New Essays*, p. 127 we are told that “time and place are only kinds of order”.

³⁰⁵ Wolff, *Ontologia*, §572 & §589.

³⁰⁶ DM §46. Unless otherwise noted, all translations of Wolff’s *Deutsche Metaphysik* are my own.

³⁰⁷ DM §45

of successive beings is TIME.”³⁰⁸ One crucial thing to note about these definitions is that the concepts of time and space are being defined in terms of other concepts—namely, the concepts of order, externality (which is itself defined by the concept of difference), simultaneity (which is defined in terms of compossibility), and succession (defined, in turn, by the concepts of connection and impossibility)—which Leibniz, Wolff and Baumgarten all consider to be fundamental categories of ontology. Now, as we will see in Chapter 5, in the *Dissertation* Kant opposes any attempt to derive the concepts of time and space from the fundamental categories of ontology. For Kant, time and space are simple concepts of sensibility, and their content can only be grasped intuitively; consequently, neither space nor time can be conceived of through concepts which he considers to be proper to the intellect, such as those which are studied in ontology. In order to understand Kant’s view on this matter, it will be necessary to first take a close look at just how the Leibnizians-Wolffians attempted to define the concepts of time and space in terms of these fundamental categories of being.

To begin, time and space are both species of order. The concept of an order is one of the most general kinds of relation, but, as Michael Futch has noted, Leibniz uses the term in both a wider and a narrower sense. In the wider sense, an order is a kind of relation that obtains whenever there is a collection of numerically distinct entities that exist together. In the narrower sense of the term, an order is a relation between numerically distinct entities that are connected, or, related to one another as ground and consequent.³⁰⁹ In this sense of the term, an order refers to a kind of series in which each element is related to the others according to the relations of priority and posteriority. In either sense of the term, however, the entities that exist in an order must not only be numerically distinct, they must also be similar in certain respects: there must be some feature or set of features that the elements in that order share in common if the relations they have to one another are to be conceived. In the *Deutsche Metaphysik*, Wolff tells us that a collection of numerically distinct things exist in an order “when many things are considered together as one, and there is some similarity found within them, which explains how it is that one occurs next to or after another”: an “Order is nothing other than the similarity of a manifold in which things follow one after another.”³¹⁰ An order exists when a multiplicity of entities are regarded as one, and this requires that these entities are similar in some respect. Wolff explains the sense in which time and space are kinds of order, in this general sense, in the following passage:

In space I encounter a manifold of things, namely the different ways in which each one of those things exists at the same time as the others, which we usually call their places (§47.). These things agree with each other, in that each individual thing is outside the others, and has its own distance from the others. And in this aspect

³⁰⁸ Baumgarten, *Metaphysica*, §239

³⁰⁹ Michael Futch, *Leibniz’s Metaphysics of Time and Space*, p. 108. Cf. Rutherford, *Leibniz and the Rational Order of Nature*, pp. 32-33 & pp. 111-112 for additional discussion and citations.

³¹⁰ DM §132. Likewise, in Wolff, *Ontologia*, §472: “An order is the similitude by which things are placed next to one another or follow each other.”

they are similar to each other (§18.). Thus because one takes all of these positions together as one whole, so too the order of these things which exist at the same time consists in a similarity of a manifold. In a similar way, one can indicate the same as this for time.³¹¹

Numerically distinct entities are ordered when they share some feature in common with one another, and the feature which pertains to the order of entities in space is their externality. That is, space is an order to the extent that there exists a collection of numerically distinct entities that are similar to one another in that the existence of one is external to the existence of the other; this common feature, their externality, is what makes them similar, and it is also what explains how it is that they come to stand in relations of distance to one another—externality is the *ground* of their relations of situation. As for things that exist in time, the similarity which grounds the successive order of numerically distinct entities are the relations of impossibility and connection.³¹² When a collection of numerically distinct entities is given, they are discovered to be similar when they are compared with one another and determined to be impossible, but also connected. A collection of numerically distinct things are connected when there is some ground which explains why one is first, another second, etc., so that the position each element has in the series can be explained by showing how one is grounded in another.³¹³ Time is thus “nothing other than this order, of what follows [*folget*] another”.³¹⁴ Impossibility and connection are thus the grounds for their relations of posteriority and priority, or, their existing in a successive order.

³¹¹ DM §134.

³¹² These relations are also identified in Leibniz, “Reply to the Thoughts on the System of Preestablished Harmony” (in *Philosophical Papers and Letters*), p. 583: “EXTENSION is the order of possible coexistence, just as TIME is the order of possibilities that are inconsistent but nevertheless have a connection. Thus the former considers simultaneous things or those which exist together, the latter those which are incompatible but which we nevertheless conceive as all existing; it is this which makes them successive.”

³¹³ DM §93

³¹⁴ DM §94. Since space and time are both kinds of order, there must be some feature which every spatiotemporal entity shares in common with the others which makes them similar. Externality is the feature common to every entity in space, while impossibility and connection is what makes every entity in time similar. The sense in which the features of externality, impossibility and connection ground the spatiotemporal order of objects is just that they are what make it possible for objects to exist in *some* location in time and space. These features are what make it possible for entities to exist in a spatiotemporal order, they do not, however, determine the *specific* locations that objects have in time and space. As Wolff notes, “place and space change nothing in a thing, as they have nothing at all to do with its internal [state]” (DM §49), and likewise time “does not change anything in a thing, since it has nothing to do with its inner self” (DM §98). From this, Wolff infers that it is “possible that each thing can occupy the place of another” since “neither in the one nor in the other is it grounded why it must be precisely in this place” (DM §50); again, none of them is “necessarily in the place which it occupies” since that would require that they exist necessarily in the place they have” (DM §92). The particular spatiotemporal location that a thing has cannot be determined by any of its qualitative features, for there is nothing inconsistent about a thing existing at different times or places, and if that is correct the positions objects have in time and space is not determined by any similarity relation based on their qualitative features. Nevertheless, as we will see momentarily, “since nothing can exist without its sufficient ground for why it exists” (DM §50) there must always be some reason why something exists at one time or place or another. The exact position of an entity in space and time is always determined through some application of the PSR, not by the fact that every entity in time and space is external, impossible, and connected to the others.

Although the derivation of the concepts of space and time from the most fundamental categories of being is only hinted at by Leibniz,³⁴⁵ it is carried out in detail in his successors, and in particular by Wolff in both his *Ontologia* and *Deutsche Metaphysik*. Recall that Wolff's basic project in these works is to provide an inventory of the most fundamental categories of being, and to show how other, less fundamental concepts can be synthetically defined in terms of those that are most basic. The proximate concepts used to define space and time are, as before, the concepts of externality, simultaneity and succession, and each of these concepts are themselves defined in terms of others that are given through purely logical principles, such as the PNC, the PSR, and the Law of Identity, which give the concepts used to define time and space, namely, the concepts of possibility, compossibility, order, difference, and ground.

Wolff derives the concept of space from the concept of externality, which is itself defined in terms of the concept of difference. This comes out most clearly in the *Deutsche Metaphysik*:

What is external [ausser] to us and external to each other. When we pay attention to ourselves, we find that we are conscious of many things as external to us. But we posit them [as] external to us when we cognize that they are distinct from us just as we also posit them [as] external to each other when we cognize that they are distinct from each other. Everyone will find in his own case that as soon as he assumes that different things are supposed to exist at the same time, he represents to himself one [as] external to the other, just because it seems impossible to him to think that two different things could be only one (§10, 17), and it seems also impossible to him to represent the one in the other.³⁴⁶

We form a concept of externality by becoming aware of things existing outside us [*ausser uns*] or outside one another [*ausser einander*]; but this awareness only comes about through the recognition that the things we cognize are *distinct* from us or *different* from one another. In other words, the concept of externality, or, of things existing outside us and outside one another, is given when objects are cognized as numerically distinct from one another. The concept of externality is thus defined through the concept of difference. The concept of difference is defined, in turn, through the concept of non-identity: two things, A and B, are identical when one “can posit thing B for thing A and everything remains as it was”, and non-identical if one can “posit B for A and not everything remains the same.”³⁴⁷ Whether or not one thing is external to one another, then, depends upon whether they are identical, and this, in turn, depends upon whether one is substitutable for the other *salva veritate*. In addition, numerically distinct entities only exist in space

³⁴⁵ See Daniel Rutherford, *Leibniz and the Rational Order of Nature*, pp. 99-115 for discussion of Leibniz's various attempts to derive the fundamental categories of being through logical division.

³⁴⁶ DM §45, Cited as translated in *Kant's Critique of Pure Reason: Background Source Materials*, edited and translated by Eric Watkins (Cambridge: Cambridge University Press, 2009), pp. 14-15.

³⁴⁷ DM §17. The same definition of externality appears in *Ontologia*, §544 where Wolff again asserts that two things exist “outside one another” [*extra se invicem*], or are external to one another, just in case they are numerically distinct.

if they are ordered, and here the concept of order is being used in the wider sense to denote coexistence. Space is given, in other words, when there is a collection of numerically distinct things which *coexist* with one another. The concept of externality together with this concept of order is what gives the concept of space.

What space is. Now when many things that exist at the same time and are not identical are represented as external to one another (§45), a certain order among them thereby arises such that when I take one of them as the first, I take another as the second, another as the third, yet another as the fourth, and so on. And as soon as we represent this order to ourselves, we represent space to ourselves. For this reason, if we do not want to consider the object differently from how we cognize it, we must take space to be the order of those things that exist at the same time. And thus no space can exist if things are not present to fill it, although it is still distinct from these things (§17).³¹⁸

The concept of space, defined as the “order of things that exist at the same time”, is thus acquired from the representation of numerically distinct objects co-existing together outside us and is defined through the concepts of order and externality.

A similar analysis of the concept of space appears in the *Ontologia*, where Wolff again defines space as “an order of simultaneous [things].”³¹⁹ Wolff defines the concept of simultaneity through the concept of co-existence: two things, A and B, are simultaneous if A exists while B exists, or, if A and B coexist with one another. Here, however, Wolff also provides a definition of the concept of coexistence, which he defines through the concept of compossibility, or non-contradiction: two possible beings can coexist if and only if they are logically compatible with one another, or, the existence of one does not contradict the existence of the other.

³¹⁸ DM §46. Cited as translated in *Kant's Critique of Pure Reason: Background Source Materials*, p. 15.

³¹⁹ *Ontologia*, §589. Wolff prefaces the analysis of the concept of space with a preliminary explanation as to how the mind forms that concept.

§588. *The way in which we come to acquire a concept of space.* If by attending to the manner of simultaneous coexistence of A, B, C, D, &c., by means of which we distinguish the way A and B themselves coexist, and likewise the way C & D also coexist, and similarly the way in which B and C themselves coexist from the way A and D coexist, etc., to the extent they are co-located next to one another [*juxta se invicem*] in a reciprocal order, so that the distance between A & B is different from the distance between the same A & D &c., then we have the notion of space. The truth of this proposition is revealed through experience, if we attend to any objects that are near to us. Indeed we are not even able to imagine things outside themselves [*invicem coexistentes*], without the same concept of space adhering to them.

Note that the mind forms a concept of space not just from the outer perception of coexisting bodies, but also through an act of the understanding which *distinguishes* the existence of one body from another, while simultaneously conceiving of them as coexistent. In addition, note that in this passage Wolff says we have a concept of space as soon as we form a concept of spatial relations. This does not entirely agree with the account given by Leibniz which we discussed above, since Leibniz maintains that the concept of space is formed only after we first obtain a concept of place, and then combine distinct places in thought to form a concept of space. Wolff does however describe each of these steps in the sections that follow. See *Ontologia*, §602-608 for his account of the concepts of place and situation, and §593-599 & 609-611 for his discussion of abstract and imaginary space.

That space exists as an order of simultaneous [things], to the extent that they coexist, is demonstrated from the notion of an order. Suppose A, B, C, D, &c. are entities which simultaneously exist. Since A, B, C, D, &c, simultaneously exist, the idea of their co-existence is compatible, that is, the existence of A is not opposed [*repugnat*] to the existence of B, nor the existences of the others C & D & c. (§.535). And because A, B, C, D &C. are not the same being, but beings in themselves, at least diverse in number, I must think that A exists outside of B, C outside of B & A, D outside C, B, & A & c. (§.544). So simultaneous entities [*simultanea*] are therefore put together [*collocantur*] in order that every single one of them exists outside the others...The similarity with an order is met with in the way in which things are located next to one another (§.472); in the coexistence of things an order is given. For the notion of space truly belongs to the notion of simultaneous beings, to the extent that one exists outside the other & hence the different distances one apart from the other is assumed to follow (§.588).³²⁰

In each of these passages, Wolff defines the concept of space from the fundamental categories of being, and each of these categories are given through certain fundamental principles of logic. Thus, the concept of externality is defined in terms of non-identity: one thing exists outside another just in case the first is not identical to the second. And the concept of coexistence, which is required for defining the concept of order, is defined through the PNC: two things are compossible just in case the existence of the first does not contradict the existence of the second. The concept of space is thus derivable from the fundamental categories of being since it can be defined through the logical division of these concepts.

Wolff next shows how the concept of an actual order of coexistent entities can be reduced to the concept of a possible order, so that the concept of space is thus analyzable in terms of the concept of possible beings: “space results”, we are told, “from the possibility of coexistents,” for “the space of located things is admitted when we conceive it to be possible that some entity is able to simultaneously exist with others.”³²¹ In other words, if we can at least *conceive* of numerically distinct entities coexisting with one another, the order of their possible coexistence gives us a concept of space.

According to Wolff, the mind acquires a concept of time after it first forms the concepts of simultaneity and succession. The concept of time is acquired from certain acts of the understanding performed upon the sensory materials given by experience.

If attending to the continuous succession of successive things A, B, C, D, etc., we distinguish the existence of A itself from the existence of B itself, the existence of B itself from the existence of C itself, the existence of C itself from the existence of D itself, etc., to the extent that in such an order they follow one another in turn, so

³²⁰ *Ontologia*, §590.

³²¹ *Ontologia*, §591.

that A is the first, B the second, C the third, D the fourth etc., we have the notion of time.³²²

When the mind has an experience of a succession of states, it first distinguishes each element in this series, and then abstracts the idea of time by conceiving of the order in which A, B and C occur in abstraction of the things themselves. Time is thus an empirical concept obtained through abstraction from the experience of a succession of states.

Wolff then turns to the question of how the concept of time is to be defined. He begins by first explaining what it is for beings to be simultaneous or successive.

If while A exists, B, C, D, etc. also exist, A, B, C, D, etc. are called simultaneous things. But if while A exists, B does not exist, and A ceases to exist when B begins to exist, and similarly if while B exists, C does not exist, and B ceases to exist when C begins to exist, and so forth, then A, B, C, etc. are successive things.³²³

Simultaneity is explained in terms of coexistence: two things, A and B, are simultaneous if A exists while B exists, or, if A and B coexist with one another. Succession, on the other hand, requires that the entities which stand in that relation do *not* coexist with one another: A and B are successive if A exists when B does not, and B begins to exist, or comes into existence, when A ceases to exist. Wolff then adds that the concept of succession, in turn, must be defined through the concept of an order.

I have become accustomed to the view that time is an order of successive things in a continuous series after I first derived it from the concept of an order. The successive beings A, B, C, D, &c. are entities, which are posited in a continuous series. In this way A and B are compared, so that it is contradictory for them to exist simultaneously, though it is not contradictory for A to exist after B, so that in this way A is posited after B itself.³²⁴

In this passage, Wolff tells us that the order of existence of impossible entities is determined by an act of comparison. First, A and B are compared to determine whether they are compossible. If they are not, then it is not contradictory for one to exist before (or after) another. But although this act of comparison determines whether two entities may co-exist, it does not yet tell us in what order they appear, as to which is first, which second, and so on. Here it is important to recall our earlier discussion of the sense in which time is a kind of order. While space is an order in the wider sense of the term, time is an order in the narrower sense, since it denotes a relation between numerically distinct entities that are connected, or, related to one another as ground and consequent. The definition of time as an order in this narrower sense is perhaps most clearly explained by Leibniz in his *Initia Rerum Mathematicorum Metaphysica*.

If a plurality of states of things is assumed to exist which involve no opposition to each other, they are said to exist simultaneously. Thus we deny that what occurred

³²² *Ontologia*, §571.

³²³ *Ontologia*, §569.

³²⁴ *Ontologia*, §573.

last year and this year are simultaneous, for they involve incompatible states of the same thing. If one of two states which are not simultaneous involves a reason for the other, the former is held to be *prior*, the latter *posterior*. My earlier state involves a reason for the existence of my later state. And since my prior state, by reason of the connection between all things, involves the prior state of other things as well, it also involves a reason for the later state of these other things and is thus prior to them. *Therefore whatever exists is either simultaneous with other existences or prior or posterior. Time is the order of existence of those things which are not simultaneous.*³²⁵

In this passage, Leibniz offers a reductive analysis of time by defining the temporal relations of succession and simultaneity in terms of purely logical relations. Assuming the existence of things with a plurality of states, as well as certain assumptions such as the principle of non-contradiction and principle of sufficient reason, the series in which the states of a thing occur may be ordered according to three possible relations, namely the relations of priority, co-existence, and posteriority. Simultaneity is defined in terms of the composability of states, so that two states of a thing (may) exist simultaneously if, and only if, they “involve no opposition to each other” (ibid), or, are logically compatible. States which are not simultaneous are either prior or posterior to one another, where the former are those which “involve a reason for” (ibid) the latter. Succession is thus defined in terms of non-simultaneity and the relation of ground to consequent, where the later consists in the relation of one thing being the reason for another. By definition, then, one state is (temporally) prior to another if, and only if, the former precedes the latter in the order of reasons, or, the former includes the reason for the latter.³²⁶

Wolff’s account of the sense in which time is an order is similar to the one just described. Wolff, like Leibniz, also maintains that the position of the elements in a successive order is determined through their grounding relations, though admittedly this does not come out very clearly in either the *Ontologia* or *Deutsche Metaphysik*. In order to bring this out, we may begin by noting that Wolff claims that the position of the elements in an ordered series is determined according to their similitude.

...it is clear that successives are so located, that each thing exists apart from the other, and cannot exist together with the other at the same time, but it is also clear as to which should be posited after the other has been posited before it. The rule, according to which each is assigned to its own position in the series, as to why A should be first, B second, C third, D fourth, etc., arises consequently from the determination of the similitude in which successive things mutually follow one another (§217) and the idea of the successive locations is determined in the same way (§215). The similitude by which things follow one another once the order is made is given in an obvious way from the succession of the order of things (§472).³²⁷

³²⁵ Leibniz, “The Metaphysical Foundations of Mathematics” (in *Philosophical Papers and Letters*), p. 666.

³²⁶ For a more detailed discussion of Leibniz’s definitions see Richard Arthur, “Leibniz’s Theory of Time”, pp. 267-278 & pp. 301-304.

³²⁷ *Ontologia*, §573.

Recall that Wolff defines an order as “the similitude by which things are placed next to one another, or follow each other”,³²⁸ and so, a collection of numerically distinct, impossible entities exist in an ordered series when they are related to one another according to some similarity. Perhaps the best way to understand this admittedly opaque claim is to consider some of the examples Wolff gives to illustrate the basic idea that an ordering relation is based on the similarity of the members that exist in an order. In the *Deutsche Metaphysik*, Wolff gives the example of a procession of individuals which appear one after another: if the individuals which appear in the series share no features in common, or, if there is no feature of the first which is similar to that of the second, and the third individual is not similar in any way to the second or fourth, etc., then such a procession is *disordered*; in contrast, a procession of individuals in which the first pair in the series is more distinguished than the second, and the second more distinguished than the third, etc., is an *ordered* procession. In the latter case, each pair in the series is ordered according to their relative degrees of distinction, so that the first pair is more distinguished than the second, while the second is more distinguished than the third, and so on. In this case, there is a feature of the first pair which makes them more similar to the second than to the third pair in the series, and, in general, each pair in the series is more similar to those which follow than the ones that precede. It is the presence of this feature—the similarity of the pairs in the series according to their relative degrees of distinction—which makes the procession a kind of ordered series.³²⁹ The reason this series is ordered is because one can intelligibly explain why each member of the series appears when it does, whereas in the first example, the absence of any similarity between the members in the procession means that there is no principle or reason that explains the order of their appearance. What this example is supposed to illustrate is that when a class of numerically distinct entities exist in an ordered series there is some rule or principle, based on some feature which they share in common with one another and which makes them similar, that determines the position of each member in that series. This rule or principle is the ground of the series and is what makes the order in which the elements intelligible. The reason why an order is intelligible is because the place of every element in that order is determined in some way or other, and that means that “everything here

³²⁸ *Ontologia*, §472.

³²⁹ DM §133. In *Ontologia*, §472 the example Wolff gives is the manner in which the books in a library may be arranged. The books may be arranged according to topic, so that the position of each book on the shelf is determined according to the relative similarity in topic to those nearest to it in the series. The books in a library are ordered, then, if the positions they have are determined in accordance with some similarity relation. Other examples include the order in which the propositions in Euclidean geometry are presented, DM §137. It is important to note that there are, of course, a number of different ways in which a class of entities may or may not be similar to one another, so that the order in which entities are arranged depends upon which particular feature is identified as being the relevant similarity, the shared feature which *explains* order in which these entities are arranged. One could, for example, order the books in a library alphabetically, rather than topically, so that the order in which the books are arranged depends upon the similarity of the names in the series, rather than the topic. What matters, however, is that in every kind of order there is *some* feature which the elements share in common, and that the arrangement of the entities in the series is explained by the comparative relations of similarity.

has its ground, why it occupies this and no other place, or why it follows this and not something else.”³³⁰ What this implies, in turn, is that the order of the elements in a successive series is always explicable through some application of the PSR, or, that the elements in a successive series are *ordered* when they are related to one another as grounds and consequents: in order for a series of elements to be cognized as an order “one must discover the ground, why a multiplicity of things are next to one another in this way, or follow one another.”³³¹

Since time is a kind of order, the entities that exist in a temporal series must also be related to one another by virtue of some similarity, so that once the terms in a successive series are first determined to be incompatible through comparison, one can then inspect them to determine in what respects they are similar; and, in doing so, one will always be able to discover some principle which explains the position of each member in the series. This rule or principle corresponds to the relations of ground and consequent which determine the position of the elements in that series and which explains why one is posterior or prior to another. In defining time as a kind of order, Wolff, like Leibniz, is thus claiming that the temporal relations of succession and simultaneity can be analyzed in terms of the logical relations of compossibility and ground-consequent.

In the next step of his analysis, Wolff reduces the concept of a successive order to the concept of possibility by noting that the concept of time can be understood even if the entities existing in a series are not actual.

Indeed, since successive things are possible things, even if they do not exist, so possible things are successive entities located in a certain continuous series...For this reason, time and also possible things, even things that do not exist, follow in the abstract, [for] so far as it denotes the possible order of successive things existing in a continuous series, it can be conceived, even [if] things do not exist.³³²

The concept of time, considered in the abstract, or independently of the *actual* existence of entities succeeding one another, designates the possible order of successive things and the order of a series of possible beings is understood in terms of their *possible* co-existence: if two entities could co-exist with one another, then they could exist simultaneously, and if they are impossible, then they can co-exist by occupying distinct positions in a possible series. The concept of time may thus be understood in the abstract even if the series of successive entities are not *actual*. It is for this very reason that Wolff claims that the concept of time can be conceived of (*conipi potest*) through the concept of a *possible* order of successive entities, independently of the *actual* existence of a successive series. Wolff does acknowledge that time is not given unless things actually exist.³³³ But what matters for Wolff is that the concept of time, considered in the abstract

³³⁰ DM §139.

³³¹ DM §140.

³³² *Ontologia*, §576.

³³³ *Ontologia*, §574.

as a possible order of existents, can be *understood* independently of the actual existence of time, through the concept of a possible successive order.

Wolff next shows that other temporal concepts, such as the past, present and future, can be defined in terms through the concept of a possible order of existents. Wolff begins with the concept of an actual time, which he defines in terms of the actual existence of an entity.

There are no parts of actual time except those that are designated by the existence of things in actuality. Actual time, or time that is given actually, is only the order of successive [things] in a continuous series (§572), and consequently no little [bit of] time can be admitted, except insofar as something was existing, while we posit that this thing flows. For this reason, even though we admit parts of time, insofar as the existence of one is continuous with the existences of many, such that if it coexists with successive [items] *a, b, c,* and *d* at the same time, the existences of *a, b, c,* and *d,* are like parts of A itself, insofar as we consider time as abstracted from existent things (§577, §580) – no other [parts] in actual time can be admitted than those which are designated through the existences of things and their actual durations.³³⁴

Wolff then proceeds to define the other parts of time, namely the past, present and future, in terms of the concepts of possibility and actuality.

Hence, *present time* is that which is designated by the existence of an actually existing thing. *Past* [time] is that which is designated by the existences of things that have ceased to exist or have receded from act into the state of possibility. Finally, *future* [time] is that which is designated by the existence of things that will exist, which are considered as what will be brought from potency to act. But since there are no parts of time except those that are designated through the existences of things in act (§573), it is not even possible to fashion others, except those which are designated through the existences of things that have ceased to exist, which exist, and which will follow after those which now exist; also, *it is not possible even to fashion any time which is not present, or past, or future.*³³⁵

The only part of time whose existence is actual is the present, so the present is defined as the actual existence of an entity. The other parts of time are defined through the concept of the present as well as the concept of possibility. Thus, an entity is past if it *was* present, or was actual, and is future if it *will be* present, or will be actual; entities in the past “recede from act to potency” while future entities are “considered as what will be brought from potency to act.”³³⁶

³³⁴ *Ontologia*, §583.

³³⁵ *Ontologia*, §584. Cf. Baumgarten, *Metaphysica*, §297-298

³³⁶ *Ibid.* Cf. Baumgarten, *Metaphysica*, §238-240 & 306 for similar analyzes of time and space.

It is worth noting that Wolff's distinction between the concept of time, considered in the abstract as the "possible order of successive things",³³⁷ and time itself, considered as the order of existents as they exist in actuality one *after* another, appears to presuppose, or at least suggests, that there are two distinct ways of conceiving of the order of entities in time. The concept of time, considered in the abstract as the possible order of successive entities, appears to designate a purely static order. As a merely possible order, successive entities are distinguished by the relative positions they have to one another in a series, and these positions are determined according to the relations of compossibility, or what allows for two distinct entities to co-exist with one another, as well as the relation of logical consequence, which determines the relative positions of impossible entities according to their positions in the order of reasons, i.e., of whether they are an immediate, or remote, consequence or ground of the other entities in the series. The order of succession present in a series of possible beings is that of a static series. And, as merely possible things, the entities in a successive series are not distinguished in terms of past, present and future. It is only after some entity becomes actual, and is then succeeded by another entity, that one can distinguish between the parts of time, or between what is past, present and future. And if that is correct then, considered solely with respect to the order these entities have in that series, there is no distinction between 'past', 'present' and 'future': they are not ordered in terms of 'past', 'present' and 'future', but rather in terms of purely logical relations of compossibility and consequence. Thus, there are two ways to consider an order of entities, one is in terms of compossibility and rationata, and the other is given in terms of actuality, and Wolff tells us that the concept of time can be understood in the abstract even if the entities existing in a series are not actual, or that the concept of time may be understood by conceiving an abstract order of existents in a series.³³⁸

What these analyzes are supposed to show is that the concepts of time and space are derivable from the fundamental categories of being by means of logical division. Note that each of these categories are defined through certain notions that are logical in nature. Possibility and compossibility are defined through the PNC; externality is defined through difference, which in turn is defined through the Law of Identity; and as for the PSR, this principle must also be regarded as logical in nature since both Wolff and Baumgarten maintain that it can be derived from the PNC. Kant's claim in the *Dissertation* that the concepts of time and space are not derivable from reason or the laws of logic thus appears to be directed against the Wolffians. But before we turn to Kant's criticisms of these definitions, it will be useful to discuss a bit further the precise sense in which time and space are supposed to be concepts of the understanding for the Leibnizians-Wolffians.

³³⁷ *Ontologia*, §576

³³⁸ This static conception of a successive order, in which time is considered in abstraction from actual entities, and understood as the possible order of successive entities in a series, is conceptually basic relative to the other temporal concepts. In particular, the concepts of past, present, and future are defined in terms of these concepts, so that the concept of a successive order of possible entities is conceptually prior to these other concepts. The concept of time, according to Wolff, may be understood solely through the possible order of entities in a series, and one can conceive of time so long as one has this concept.

Section §3.3: Space & Time as Concepts of the Understanding

In our reconstruction of the Leibnizian account of how the mind forms the concepts of space and time, we noted that the first step required to obtain these concepts involves receiving ideas of spatiotemporal relations from the senses—either the ideas of situation which are given through sight and touch, or the ideas of succession and simultaneity. But although receiving these ideas from the senses is the first step involved in forming the concepts of time and space, these concepts are not given through the senses alone, for it is only after the mind performs certain acts of analysis upon the materials originally given by sense that the mind comes to acquire these concepts. Thus, the concept of space isn't given immediately through sight and touch, for what is also required is that the mind then form a concept of place, and this requires that the mind perform certain acts of reflection, comparison and abstraction upon the materials given by sense. As we have already seen, the concept of place is formed by first comparing what two or more bodies share in common with one another at different times when they have the same relations of situation to some other set of bodies; and then, by reflecting on what is similar, and abstracting away whatever is different in the two cases, the mind forms the concept of that relation by considering it independently of A or B or any other body.³³⁹ Similarly, after the concept of place is acquired, the mind then forms a concept of space by combining the ideas of distinct places in thought so as to form the idea of a collection of places existing outside one another. As we saw above, this gives the mind a concept of a concrete space, and from there the mind can then proceed to form a concept of an abstract space through one additional act of abstraction: namely, by conceiving of a concrete space in abstraction of any bodies. And a similar story explains how the mind forms a concept of time. Thus, although the perception of objects standing in spatiotemporal relations—where these relations are given through sensation—is the first step involved in forming the concepts of time and space, for the Leibnizians-Wolffians these concepts are ultimately acquired through the kinds of mental operations characteristic of the logical use of the intellect, which performs certain acts of comparison, reflection and abstraction on the data originally given by sense.

³³⁹ Note that this Leibnizian concept of place is something *general*: it is not the idea of some singular entity, but instead the concept of some (extrinsic) property that a number of distinct things can share in common with one another when they have the *same* relations of distance and situation to other bodies.

And, to give a kind of a definition: *place* is that which we say is the same to A and to B when the relation of the coexistence of B with C, E, F, G, etc. agrees perfectly with the relation of the coexistence which A had with the same C, E, F, G, etc., supposing there has been no cause of change in C, E, F, G, etc. It may be said also, without entering into any further particularity, that *place* is that which is the same in different moments to different existent things when their relations of coexistence with certain other existents which are supposed to continue fixed from one of those moments to the other agree entirely together. And *fixed existents* are those in which there has been no cause of any change of the order of their coexistence with others, or (which is the same thing) in which there has been no motion.

L.v.47, p. 46. The place of an object is thus conceived of through a general concept: it is the concept of whatever one body would share in common with another if the relation it stands in to some set of coexistent bodies at some time is the same as the relation some other body had to those things at another time.

Indeed, in the passages cited above, Wolff even suggests that the ability to form the concepts of spatiotemporal relations like succession and externality presuppose certain acts of the logical use of the intellect. Although objects will not appear before the mind in various relations of distance unless the mind is first affected through the senses of touch and sight, the mind is only able to form the concepts of these relations through certain acts of the understanding. Thus, in order to recognize that one thing is external to another, the mind must first identify each of the various features of the ideas given through sense, compare these features with one another, and then finally distinguish one from another when it discovers that they have different features (“If by *attending* to the manner of simultaneous coexistence of A, B, C, D, &c., by means of which we *distinguish* the way A and B themselves coexist...”³⁴⁰): in other words, the mind only comes to form the idea that these things are external to one another through acts of reflection, comparison and differentiation.

When we pay attention to ourselves, we find that we are conscious of many things as external to us. But we posit them [as] external to us when we *cognize* that they are *distinct* from us just as we also posit them [as] external to each other when we *cognize* that they are *distinct* from each other.³⁴¹

Likewise, the concept of succession is only given after the mind *distinguishes* each of the ideas given by sense which appear one after another; and this, in turn, presupposes that the mind first identify each of their various features and compare them with one another before discovering that they are not identical (“If *attending* to the continuous succession of successive things A, B, C, D, etc., we *distinguish* the existence of A itself from the existence of B itself...”³⁴²).³⁴² Thus, for Wolff, although objects only appear before the mind in various spatiotemporal relations when the mind is first affected through the senses, the ideas of spatiotemporal relations like externality and succession are only given through certain logical acts of the understanding: namely, when the mind reflects on the ideas given by sense so as to identify their features, compares those features, discovers that they differ, and then finally infers that these ideas must be distinct from one another.

One reason, then, why the Leibnizians-Wolffians regard the concepts of time and space to be intellectual is because they are formed through the operations characteristic of the logical use of the intellect: time and space are both empirical concepts of the understanding originally acquired through abstraction from sensory experience.³⁴³ There is, however, another sense in which Leibniz in particular, in contrast to Wolff and his successors, regards the concepts of time and space to be intellectual. In the previous section, we saw that the concepts of time and space are definable through the most

³⁴⁰ *Ontologia* §588, my emphasis.

³⁴¹ DM §45, my emphasis

³⁴² *Ontologia*, §571, my emphasis.

³⁴³ This, in fact, is precisely how Kant understands the Leibnizian-Wolffian view. They conceive of time “as something real which has been abstracted from the succession of internal states—the view maintained by Leibniz and his followers” [Ak 2:401], while space is “the relation *itself* which obtains between existing things, and which vanishes entirely when the things are taken away, and which can only be thought as being between actual things—an opinion which most of our own people, following Leibniz, maintain” [Ak 2:404].

fundamental categories of being. Through analysis, certain fundamental categories of being are discovered to be present in what is originally given by sense, such as the concepts of order, coexistence, impossibility, etc. Now, for Wolff and his successors, these concepts are all obtained through the same operations of reflection, comparison and abstraction which are involved in forming any other concept.³⁴⁴ But, as we observed in Ch. 2, for Leibniz the most general concepts of ontology are not obtained through experience by abstraction, they are instead innate concepts which are present in the mind from birth. In that case, if time and space are definable through these concepts, then they should also be innate rather than acquired. That this is indeed Leibniz's view is confirmed by a number of passages from the *New Essays*, such as his repeated claim that time and space "are of the nature of eternal truths."³⁴⁵ As is well known, for Leibniz eternal truths are propositions that express relations between abstract ideas that exist in the mind of God; these ideas exist in the divine understanding and can only be conceived by finite minds like ours through the use of the pure understanding:³⁴⁶ our knowledge of eternal truths is "grounded in the ideas themselves, independently of the senses, just as pure ideas, ideas of the intellect—e.g., those of being, one, same etc.—are also independent of the senses."³⁴⁷ Although Leibniz often acknowledges that the senses of touch and sight are what enable the mind to form the idea of space, in other passages he claims that the ideas of space, figure and motion come from the *pure* understanding rather than the senses, such as the following passage where Leibniz contrasts his own position with that of Locke, who had maintained that our ideas of space, extension, distance, shape, size, etc., are given directly through sensations of vision and touch.³⁴⁸

³⁴⁴ At least, that is how these concepts are originally acquired when the mind employs the *analytic* method. The same concepts can also, however, be derived through the *synthetic* method, as we saw above. In either case, the concepts that we obtain are supposed to be the same, since for Wolff the methods of analysis and synthesis are reciprocal.

³⁴⁵ Space is "an order, not only among existents, but also among possibles as though they existed" and "its truth and reality" is "grounded in God, like all eternal truths." *New Essays*, p. 150. Cf. *ibid*, p. 154.

³⁴⁶ As Leibniz, *New Essays*, p. 392 notes, "[A]ll the ideas of the intellect have their archetypes in the eternal possibility of things"; and again, "For ideas are in God from all eternity, and they are in us, too, before we actually think of them." *Ibid*, p. 300.

³⁴⁷ *New Essays*, p. 392.

³⁴⁸ According to Locke, the ideas of "space, extension, figure, rest, and motion" are simple modes that can be acquired by more than one sense (unlike the ideas of colors, sounds, etc.) since they "...make perceivable impressions, both on the eyes and touch; and we can receive and convey into our minds the ideas of the extension, figure, motion, and rest of bodies, both by seeing and feeling" (*Essay*. Bk II.v.1). Locke elaborates on this further in ch.13, where he offers the following explanation of how the mind forms an idea of space:

Idea of Space. I shall begin with the simple idea of space. I have showed above, chap. V, that we get the idea of space, both by our sight and touch; which, I think, is so evident, that it would be as needless to prove that men perceive, by their sight, a distance between bodies of different colours, or between the parts of the same body, as that they see colours themselves: nor is it less obvious, that they can do so in the dark by feeling and touch. (*Essay*. Bk.II.xiii.2)

The ideas of distance, extension, shape (etc.) are given directly through sensation, either when we perceive the distance between any two bodies (or parts of the same body) through our sense of sight, or when we feel those bodies, or their parts, through our sense of touch. It is worth noting that Locke's account of how the mind forms a concept of place is very similar to the one Leibniz provides in his fifth letter to Clarke. See *Essay*.Bk.II.xiii.7-9. Note, however, that Leibniz would reject the claim that the concept of space is given directly through sensation: the sensations given by touch and sight only provide us our ideas of particular

PHILALETHES: The ideas the perception of which comes to us ‘by more than one sense, are of space, or extension, figure, rest and motion.’

THEOPHILUS: These ideas which are said to come from more than one sense—such as those of space, figure, motion rest—come rather from the common sense, that is, from the mind itself; for they are ideas of the pure understanding (though ones which relate to the external world and which the senses make us perceive), and so they admit of definitions and demonstrations.³⁴⁹

Note that Leibniz refers to the ideas discussed in this passage as “ideas of the *pure* understanding” (my italics) and says that these ideas “admit of definitions and demonstrations.”³⁵⁰ But if these concepts belong to the pure understanding, then it seems that the concepts of space, figure and motion are innate rather than acquired: they are not abstracted from anything given by the senses, but are instead given by reflecting on our nature as thinking beings—in Leibniz’s words, they come “from the mind itself.”³⁵¹

Additional evidence is also given by Leibniz’s discussion of the Molyneux question. Leibniz bases his response to that question on the fact that both the blind and paralytics are able to learn geometry. From the fact that both are able to acquire the ideas which constitute the subject matter of geometry, Leibniz infers that there must be some idea(s) that they share in common, even if the sensory data they have of figures are different.

These two geometries, the blind man’s and the paralytic’s, must come together, and agree, and indeed ultimately rest on the same ideas, even though they have no images in common.

What this shows is “how essential it is to distinguish *images* from *exact ideas* which are composed of definitions”.³⁵² We have already encountered and discussed this distinction between images and pure ideas of the understanding in §2.4 of the previous chapter. The argument in this passage is that there must be some common element present in the ideas of the blind and paralytics if both are capable of learning geometry, but since the sensory data (or “images”) they have of shapes are different, this common element cannot be identical to either a tactile or visual sensation, since the paralytic lacks one, while the blind

spatial relations, and although the acquisition of these ideas is the first step involved in acquiring a concept of space, certain additional acts of reflection, comparison and abstraction are required before the mind can form that concept.

³⁴⁹ *New Essays*, p. 128.

³⁵⁰ This already strongly suggests that the ideas Leibniz has in mind here are not the ones we have of the modes of particular bodies we represent through our senses, since these are neither ideas of the pure understanding nor ideas that admit of definitions or demonstrations. Definitions are “nothing but a distinct setting out of ideas” (*New Essays*, p. 101), i.e., one has a definition when the idea of a thing is distinct; recall, however, that sensible ideas are inherently confused and *cannot* be defined (ibid, 255-56). Note that Leibniz also claims that the idea of extension is innate since it can be logically derived from other ideas that belong to the intellect, such as the ideas of whole and part (ibid, p. 212)

³⁵¹ Leibniz had earlier introduced the distinction between “pure ideas” (which are innate) and “images of senses” as part of his argument that the sciences of arithmetic and geometry are based on innate principles and innate ideas which can be grasped independently of any sensory experience, even though they can be represented in the concrete when applied to sensory images. See *New Essays*, pp. 77-78.

³⁵² *New Essays*, p. 137.

lacks another. Consequently, the idea(s) they both have must instead belong to a common sense, which Leibniz claims is the pure understanding. When Leibniz claims that there are certain notions that are present in the sensory stimuli given by both touch and sight, part of what he means is that there are certain concepts which are common to the things we perceive through both sensory modalities, and that these “common notions” cannot themselves, for that very reason, be either tactile or visual sensations. These ideas are not sensory, but instead pure. Although Leibniz does not tell us here what these ideas are, in the case of space, these notions are presumably the concepts of order and coexistence, since these concepts are used to define space and are also, like the concepts of being, substance, one (etc.), included among the list of the most general and fundamental categories of being.³⁵³ The ideas of space, figure and extension which Leibniz is discussing here are not ideas of the *particular* extensions, figures, (etc.) which we perceive objects having—or the ideas we have when we represent a mode of some particular body through either of these senses—but instead certain pure concepts which are somehow or other present in the sensory stimuli given by sight and touch. If that is correct, then the reason why the concept of space (and presumably time as well) is a concept of the pure understanding is precisely because it can be conceived of through other concepts which come from the understanding and whose intentional content is abstract.

What these passages appear to demonstrate is that, for Leibniz, time and space are innate concepts present in the mind from birth. But what, in that case, are we to make of those passages where Leibniz also appears to suggest that space and time are empirical concepts derived from certain acts of abstraction performed upon the materials given by sense? Are the concepts of time and space acquired from sense or are they innate? It seems that the best way to answer this question is to return to our earlier discussion from section §2.4 as to the different kinds of ideas the mind uses when representing a given thing. In §2.4 we observed that for Leibniz, certain concepts, like those of figure and extension, can either be conceived of through sensory ideas, pictured in thought through the imagination, or conceived of through pure ideas of the intellect. The same distinction seems to also be at play in Leibniz’s account of the ideas of time and space: one can either conceive of time and space through the senses, together with certain acts of abstraction performed by the intellect in its logical use, or, one can also conceive of time and space by grasping their purely intelligible properties, where these correspond to certain general concepts of ontology (i.e., coexistence, order, impossibility, etc.) which can be used to define those concepts. In the latter case, the intentional content of these ideas does not correspond to anything sensory, but is instead something pure; and it is only when time and space are conceived of by grasping their intelligible properties and representing them according to these ideas that our concepts of time and space are distinct. There are, in other words, different ways of representing time and space depending on which ideas one

³⁵³ See Daniel Rutherford, *Leibniz and the Rational Order of Nature*, pp. 99-115 for examples of Leibniz’s various lists of the fundamental categories of being.

uses to conceive of them.³⁵⁴ And in that case, there is no inconsistency involved in asserting that the concepts of time and space are, in one sense, innate, while in another sense acquired. Thus, our ideas of particular spatial relations, geometrical figures, etc., are given by sensation, and so too are the concepts of space and time that are formed through the logical use of the understanding, which abstracts them from the materials given by sense. On the other hand, there are certain concepts given by the understanding whose intentional content is pure, and since these can be used to define time and space (as well as extension, figure, and other such ideas), the concepts of time and space are, in another sense, innate since they can be conceived of through pure ideas of the intellect. The ideas given by the understanding which are used to conceive of time and space, or of figure and extension, are different in kind from the ideas given through the senses.

Thus, although both the Leibniz and the Wolffians agree that time and space can be defined according to certain fundamental categories of being, they differ as to the origin and the intentional content of these representations. For Leibniz, these concepts are innate and their intentional content is abstract; whereas for the Wolffians, they are acquired by abstraction from sensory experience just like any other concept of the understanding. In contrast to both Leibniz and the Wolffians, Kant denies that time and space are concepts of the intellect. And in order to refute the various alternatives proposed by Leibniz and Wolff, Kant must demonstrate, first, that time and space are not abstracted from the materials given by sense through the logical use of the intellect; and second, Kant must also show that time and space cannot be conceived of through abstract concepts of the intellect in its real use. With our exposition of the Leibnizian-Wolffian theory of time and space now complete, we may finally turn to Kant's account of these concepts in ID.

³⁵⁴ Recall our discussion from Ch. 2 of Descartes' example of the different ways the mind can represent a geometrical figure, like a pentagon.

Chapter 4

In chapter 1, it was established that for Kant, the representations of time and space are actively generated by the mind itself when the sensations given through affection are coordinated according to certain innate laws. But, as we also noted at the end of that chapter, it is not clear what Kant's motivations were for adopting this seemingly implausible view. In order to fill this gap and complete our account of Kant's theory of empirical cognition, the goal of the present chapter is to identify and reconstruct the arguments Kant gave in support of this thesis.

One problem we face from the outset is that Kant appears to provide very little in the way of support for this central claim of his. In spite of the fact that it is clearly an essential component of the theory of empirical cognition defended in ID, Kant does not appear to give any explicit argument for the claim that the representations of time and space are actively generated through coordination. But in the opening paragraphs of the exposition of the concepts of time and space in Section 3, Kant does explicitly argue for another thesis which is closely connected to this one: in §14.1 and §15.A Kant argues that time and space are not empirical concepts acquired by abstraction from what is given by sensation.³⁵⁵ Now, these arguments are surely connected to Kant's central thesis that the representations of time and space are generated through coordination; in particular, they appear to be connected insofar as the arguments in §14.1 and §15.A attempt to rule out an alternative explanation of the origin of these representations. Given the apparent absence of any explicit argument for the claim that the representations of time and space are generated through coordination, it seems likely that Kant's basic strategy is to try to establish this thesis indirectly: that is, Kant infers that his own positive account is the most plausible explanation for the origin of these representations after ruling out the most likely, alternative explanation. If this is correct, then Kant's attempt to establish that the representations of time and space are generated by the mind through the coordination of sensations proceeds in two basic steps: Kant first argues in the negative by refuting the claim that the representations of time and space are acquired by abstraction from the sensations given by affection, and then, once this negative thesis has been established, Kant then infers that the only remaining alternative is his own positive thesis that these representations are generated by the mind itself through a certain innate law which coordinates the sensations given by affection.³⁵⁶

This interpretation of Kant's basic argumentative strategy is also supported by the text. When Kant first introduces his central claim in §4 that the representations of time

³⁵⁵ In §14, Kant lists the paragraphs with the numerals 1, 2, 3, etc., whereas in §15, he orders them alphabetically as A, B, C, etc. This must be a typo, but to avoid confusion I will also refer to these paragraphs in the same way as Kant does, hence §15.A, §14.1, etc.

³⁵⁶ Of course, this does not yet tell the whole story, for Kant does not just assert that these representations are produced by the mind, he also identifies *coordination* as the very cognitive activity responsible for generating these representations. Nevertheless, what is clear is that if we wish to discover the grounds of Kant's theory, the place to begin is with a careful investigation of the arguments in §14.1 and §15.A. And with any luck, perhaps the explanation as to *how* exactly these representations are generated through coordination will also be revealed once these arguments have been reconstructed.

and space are generated through coordination, the argument he gives in support is that “objects do not strike the senses in virtue of their form” [Ak 2:393]. In other words, from the fact that the spatiotemporal form of appearances cannot be given by sense, Kant infers that the representations of time and space must instead be generated by the mind itself through the coordination of sensations. In addition, note that in the final sentence of the argument in §15.A, Kant writes that “things which are in space affect the senses, but space itself cannot be derived from the senses.” This, of course, should immediately remind one of the argument originally given in §4: in other words, the very argument Kant originally gave when first presenting his account of empirical cognition in §4 now reappears in §15.A, and what this strongly suggests is that the argument in §15.A is closely connected to his claim that spatiotemporal form is originally generated through the coordination of sensations. And though this utterance only appears in §15.A, it still bears some significance for the corresponding section on time since Kant treats both expositions in parallel, so that if the argument for the non-empirical origin of our concept of space is meant to help establish Kant’s positive thesis, then the same should also be true for the corresponding argument on time.

The plan for this chapter is as follows. In §4.1, I begin with a preliminary statement of the arguments in §14.1 and §15.A, and outline the various philosophical and interpretive difficulties presented by both. Identifying these problems from the outset is of some importance for, as I hope to show, one major benefit of my interpretation is that it can provide a satisfactory resolution to these problems in a way that others cannot. To that end, in §4.2 I provide an overview of the various alternative interpretations which have thus far appeared in the literature and show that none of these interpretations are successful, either because they conflict with important aspects of the text, or because they are vulnerable to the objections canvassed in §4.1. With these preliminaries out of the way, I then present my own interpretation of the arguments in §4.3, §4.4 and §4.5. I discuss the argument for the non-empirical origin of space in §4.3 and §4.4, while the corresponding argument for the non-empirical origin of time is discussed in §4.5. The reason I have elected to deal with these arguments separately, in spite of the fact that they are structurally parallel, is because a close inspection will reveal that each relies on different sets of assumptions, and discussing them separately will make it easier to reconstruct them. The results of these separate discussions are then taken up in the final section §4.6, where I conclude by explaining how the objections outlined in §4.1 can be adequately addressed in light of the interpretation defended in §4.3-4 and §4.5.

§4.1: Initial Puzzles

In §14.1 of the *Inaugural Dissertation*, Kant explicitly rejects the claim that our concept of time is acquired by reflecting upon the relations that obtain between the ideas given in sensory experience:

The idea of time does not arise from but is presupposed by the senses. For it is only through the idea of time that it is possible for the things which come before the senses to be represented as simultaneous or successive. Nor does succession

generate the concept of time; it makes appeal to it. And thus the concept of time, regarded as if it had been acquired through experience, is very badly defined, if it is defined in terms of the series of actual things which exist one *after* the other. For I only understand the meaning of the little word *after* by means of the antecedent concept of time. For those things come *after* one another which exist at *different times*, just as those things are *simultaneous which exist at the same time*. [Ak 2:398-99]³⁵⁷

Briefly, Kant argues that any attempt to acquire the idea of time from experiences of succession and simultaneity will be circular. If time is an empirical concept, then it must have been derived from experiences of succession and simultaneity. But, Kant claims, one could not obtain the concept of time from these experiences since the ability to represent the objects of the senses as successive (or simultaneous) presupposes the concept of time. The idea of time must, therefore, be non-empirical.

Kant's argument is directed against any attempt to explain our acquisition of the concept of time through the experiences of succession and simultaneity. But Kant does not identify the proponents of this view, nor does he give any precise account of what their position amounts to. Although we are told that time "is very badly defined, if it is defined in terms of the series of actual things which exist *after* the other" [Ak 2:399], the source of this definition is left unspecified. But as we saw in Ch. 3, both the definition of time as an order of succession, as well as the claim that this concept is originally acquired by abstraction from the experience of a succession of states, is common in the writings of Leibniz and his followers, and there is a good deal of evidence which indicates that the Leibnizians are the central targets of the argument in §14.1.³⁵⁸ To begin, Kant tells us in §14.5 that it is Leibniz and his followers who conceive of time "as something real which has been abstracted from the succession of internal states" [Ak 2:400-2:401]; he also notes that "the falsity of the [Leibnizian] opinion clearly betrays itself by the vicious circle in the commonly accepted definition of time", and since the vicious circle Kant is referring to here is presumably the same as the one already identified in §14.1, these two passages

³⁵⁷ Note, once again, Kant's ambiguous use of terminology in this passage, as he alternately refers to both the idea [*idea*] and the concept [*conceptus*] of time. To complicate matters even further, when these arguments reappear in the CPR Kant uses the term 'representation' [*vorstellung*] in addition to 'concept' [*begriff*].

³⁵⁸ Many commentators have identified Locke as the target of this objection. For example, Beatrice Longeneuse, *Kant and the Capacity to Judge* (Princeton, NJ: Princeton University Press), pp. 230-231n37 writes that "to be sure, he mentions 'the doctrine of Leibniz and his followers', according to which time is 'something real which has been abstracted from the succession of internal states'. But this is only to state his opposition to this view, which makes time an empirical and abstract, rather than a priori and intuitive representation. In fact, the doctrine he opposes here is surely not Leibniz's, but rather that of the Schulphilosophen who were under the influence of Locke as much as of Leibniz." Falkenstein, *Kant's Intuitionism*, p. 166, 166n.13 & p. 169n.17 also uses Locke as the foil for Kant's argument, though he acknowledges that Kant explicitly mentions Leibniz as his target. This is not to say that these arguments cannot also be applied against a view like Locke's. But as we will observe, there are a number of reasons why it is important to recognize Leibniz and his followers as the true target of this objection.

alone makes it very likely that the Leibnizians are indeed the target of Kant's argument.³⁵⁹ Moreover, in a number of his lecture notes, Kant also identifies Leibniz's followers as the explicit targets of the argument in §14.1, and the Leibnizians whom he most often has in mind are Wolff and Baumgarten. A typical example is found in *Metaphysik Vigilantius* where Kant writes that the Wolffian account is circular since "he [Wolff] determines time by the order of successive things, insofar as they are joined to one another (things which would be one *after* another) <*ordinem successivorum, quatenus sunt invicem connexa (quae post invicem essent)*>." Notice that the alleged circularity is based on the appearance of the concept *after* in the Wolffian account, just as in ID.³⁶⁰ Finally, there is also circumstantial evidence to be found in a series of remarks from Markus Herz's *Betrachtungen aus der spekulativen Weltweisheit*, a book written shortly after the publication of Kant's *Inaugural Dissertation*. As is well known, Herz was a close correspondent of Kant and the *Betrachtungen* is effectively a commentary on Kant's *Dissertation*. In the section of the *Betrachtungen* which corresponds to §14.1 of ID, Herz argues that the concept of time cannot be derived from experiences of succession and simultaneity since "we must already be in possession of it if we are to be capable of sensible cognition, which is precisely contrary to the nature of the act of abstraction", and then explicitly identifies Wolff as the target of this objection.³⁶¹ What this demonstrates is that the argument in §14.1 is directed against the Leibnizian-Wolffian view.

Kant's argument is puzzling for a number of reasons, but the first problem is that there appear to be two distinct claims which are simultaneously being attacked. Kant begins by denying that our idea of time *arises* from sensation: the idea of succession cannot *generate* our idea of time, since we could not begin to have experiences of the former without already having an idea of the later. These passages suggest that Kant is interested in the origin of our idea of time and is attacking a genetic explanation which traces its acquisition to experiences of succession and simultaneity. But while the first part of the passage pertains to the *origin* of our idea of time, Kant then proceeds to infer—apparently on the strength of the considerations raised at the start of the passage—that the Leibnizian-Wolffian *definition* of time is circular, since succession can only be defined through the concept of time. Here, Kant appears to be concerned with refuting a purported *analysis* of our concept of time, which conceives of it as an order of succession or, more precisely, as the "series of actual things which exist one *after* the other." But the question of how a concept ought to be defined is distinct from the question of how that concept was originally acquired. The Leibnizian definition of time as an order of succession is intended to be a *real* definition, an account of what time *is*; and while it is

³⁵⁹ In the Duisburg Nachlass, Ak 17:700, Refl. 4756, Kant writes that in regards to time, "Leibniz holds it to be an empirical concept of succession."

³⁶⁰ *Metaphysik Vigilantius* K₃, Ak 29:982. Cf. Ak 29:976, Ak 17:79. Kant identifies Wolff as the target of criticism in a number of places throughout his metaphysics lectures. For further examples see *Lecture on Metaphysics L₁*, Ak 28:177-178 & 180; *Metaphysics M_{rongovius}*, Ak 29:830; *Metaphysics Volckmann*, Ak 28:437. Elsewhere, Kant identifies Baumgarten's definition of time as the target for criticism in Ak 29:830.

³⁶¹ Markus Herz, *Betrachtungen aus der spekulativen Weltweisheit* (Königsberg: Kanter, 1771). Reprinted and translated as "Observations from Speculative Philosophy" in Eric Watkins, *Kant's Critique of Pure Reason: Background Source Materials* (New York: Cambridge University Press, 2009), p. 289-290.

true that the Leibnizians generally regarded time to be an empirical concept, the question of whether time is to be defined as an order of succession is distinct from the question of whether that concept has an origin in experience. Kant thus appears to be conflating two distinct issues: the genetic question of how the mind obtains a concept of time and the further question of what our concept of time refers to, or, how that concept should be defined, and these are certainly different things since an account of how we form an idea of time does not necessarily tell us anything about what time *is*.³⁶²

³⁶² A similar objection is raised by Vaihinger *Commentar*, Vol. II, p. 369. Vaihinger claims that there are really two distinct objections which Kant appears to be conflating in this passage, one having to do with the psychological origin of the concept of time, while the other concerns the logical analysis of that concept (“Beachtenswerth ist, dass Kant einen anderen Vorwurf, den er der Leibniz’schen Schule macht”).

Was Kant offenbar wirklich tadeln will, ist der Cirkel in der genetischen Ableitung. Jene Ableitung sagt: die Zeitvorstellung entsteht erst aus der Vorstellung der aufeinanderfolgenden Dinge. Allein—wirft Kant ein—die Vorstellung aufeinanderfolgender Dinge ist nur möglich, wenn eine Vorstellung der Zeit schon vorhergeht. Die Vorstellung der Zeit aus der Vorstellung wahrgenommener und beobachteter Zeitfolge abzuleiten, ist verkehrt. Diese Umkehrung, diese Verwechslung von Ursache und Wirkung ist aber doch nicht richtig bezeichnet mit dem logischen Ausdruck eines *circulus vitiosus*, und so mag Kant absichtlich später diese ungenaue Bezeichnung weggelassen haben.

The Leibnizian account is allegedly circular as a genetic explanation of how the mind forms a concept of time: the concept of time cannot arise from the representations of succession and simultaneity since these representations presuppose the concept of time, so that the former cannot be acquired from the later without going in a circle. From this, Kant is supposed to have also inferred that the Leibnizian definition of time as an order of succession is equally circular. But as Vaihinger correctly notes, these are really distinct issues: the alleged circularity involved in trying to explain the genesis of the concept of time from the representations of succession and simultaneity is distinct from the kind of circularity allegedly involved in the Leibnizian definition of time as an order of succession. Leaving aside the question of whether Kant’s first objection is valid, Vaihinger claims that Kant’s second objection is based on a confusion: Kant is guilty of confusing a *sensu logico* with a *sensu reali*, or, of conflating the difference between explaining the nominal definition of a concept, its “logical sense”, and explaining what it is that a concept refers to, its “real sense” (“Es wird jener Auffassung ein Cirkel in der Definition vorgeworfen: aber es handelt sich ja doch nicht um eine Definition, eine Erklärung *sensu logico*, sondern um eine causale Erklärung *sensu reali*.” (ibid)). The Leibnizian definition is circular, but only as a *verbal* (or nominal) definition of time, since the meaning of ‘after’ can only be understood by explaining it through the concept of time (i.e., “...those things come *after* one another which exist at *different times*”); but since it is clear that Leibniz intends a *real* definition, a definition of what the concept of time refers to, the charge of circularity rests entirely on confusing this definition with one that is merely verbal, a *sensu logico* with a *sensu reali*. The same point was made by Mendelssohn (“This difficulty seems to demonstrate the poverty of language rather than the incorrectness of the concept”). See Mendelssohn to Kant, December 25, 1770, Ak 10:115. It is perhaps unfair to claim that Kant’s objection is merely verbal—one having to do with how the meaning of certain words is to be explained—but he does leave himself open to this charge, since his explanation of the circularity allegedly involved in the Leibnizian definition is based on the claim that one cannot understand the meaning of the word ‘succession’ without first explaining “the meaning of the little word *after*.” Notice that this is also true of Herz’s account of the argument. Nevertheless, the alleged circularity cannot be merely verbal, for Kant, as well as his interlocutors, all agreed that words are merely outer signs or symbols that we use to publicly express our thoughts, and that means that the issue here has to do with the relationship between our concepts of succession, simultaneity, and time. The objection that the Leibnizian definition of time is circular is repeated in §14.2 [Ak 2.399], §14.5 [Ak 2.401] and is also raised against the Leibnizian definition of space in §15.D [Ak 2.404]. It does not, however, reappear in the CPR, and this has led Vaihinger, *Commentar*, p. 369 to conclude that Kant must have ultimately abandoned it. But the problem with this suggestion is that although the objection does not reappear in the CPR, it does appear in Kant’s lecture notes from the period after 1781, which suggests that Kant may not have abandoned it after all. See *Metaphysik Mrongovius*, 1782-83 [Ak 29:830-831] and the *Metaphysik Volckmann*, 1784-85 [Ak 28:437].

It is possible that this confusion is only apparent, for in the first part of the passage Kant refers to our *idea* of time, while the objection to the Leibnizian definition is stated in terms of the *concept* of time. This shift in terminology may indicate that there are, in fact, two distinct claims in this passage, that the *idea* of time is not obtained through sensation and that the *concept* of time cannot be defined as an order of succession. The difficulty with this suggestion, however, is that Kant appears to think that these two theses are connected with one another, that time cannot be defined as the “series of actual things which exist *after* one another” once it has been shown that the idea of time does not arise from the senses. This comes out clearly in the third sentence, where Kant *infers* (“And *thus* the concept of time” [ibid, my emphasis]) that time is “very badly defined” precisely *because* it is “*regarded as if* it had been acquired through experience” [ibid, my emphasis]. Moreover, Kant’s explanation of why the Leibnizian definition is circular is based on the same kind of priority appealed to at the start of the passage. Time cannot be defined through the concept of succession since succession can only be *understood* through the concept of time, “For I only *understand* the meaning of the little word *after* by means of the antecedent concept of time” (ibid; my emphasis).

The precise sense in which the concepts of succession and simultaneity are supposed to *presuppose* the concept of time is thus unclear, for not only do there appear to be different senses of priority at issue here, there is also supposed to be some kind of connection between these two notions of priority, though the nature of that connection is unclear. The first sense of priority is perhaps best described as *psychological* priority, which we might define by saying that the concept A is psychologically prior to the concept B iff B cannot be acquired before A. The argument begins with the claim that the idea of time “does not *arise* from...the senses” [Ak 2:398; my italics]; we are also told that the concept of succession cannot “*generate* the concept of time” [ibid; my italics]. These are both psychological claims about the origin of these concepts: the concept of time cannot be given through sensation and the mind must *first* possess the concept of time before it can subsequently acquire the concepts of succession and simultaneity. The concept of time is thus *psychologically prior* to the concepts of succession and simultaneity. The second kind of priority which Kant attributes to the concept of time is what we might call *definitional priority*: one concept, A, is prior in the order of definition to another, B, iff B is defined in terms of A. For example, if knowledge is defined as justified, true belief, then the concept of belief is prior in order of definition to the concept of knowledge; we define knowledge in terms of belief and cannot define belief in terms of knowledge without going in a circle. Likewise, Kant appears to be arguing *negatively* that the concepts of succession and simultaneity are not prior in the order of definition to the concept of time, in much the same way that the concept of knowledge cannot be defined through the concept of belief without circularity.³⁶³

³⁶³ The distinction between these notions of priority is subtle, but they are different: we will elaborate on the distinction in §4.2 and also provide some examples as to how these two notions can come apart. For now the key point that needs to be recognized is that although Kant certainly thinks the concept of time is prior to the concepts of succession and simultaneity in both these senses, the explanation for why the

In §15.A a similar argument is given to show that the concept of space is non-empirical.

The concept of space is not abstracted from outer sensations. For I may only conceive of something as placed outside me by representing it as in a place which is different from the place in which I am myself; and I may only conceive of things outside one another by locating them in different places in space. The possibility, therefore, of outer perceptions as such *presupposes* the concept of space; it does not *create* it. Likewise, too, things which are in space affect the senses, but space itself cannot be derived from the senses. [Ak 2:402]

If space were an empirical concept acquired by way of abstraction from experience, then it must have been acquired by perceiving things existing outside us and apart from one another. One cannot, however, represent something outside oneself without first representing it in a place different from the location one occupies; likewise, things cannot be represented outside one another unless they too are first represented in different parts of space. The concept of space cannot, then, be an empirical concept acquired from sensory experience, since the ability to represent objects outside ourselves and outside one another presupposes the concept of space.

As before, it seems that Kant is trying to show that the concept of space is *psychologically prior* to the concept of spatially related outer appearances: the concept of space cannot be acquired from the sensations given through the outer senses, for it is only insofar as the mind first has a concept of space that it can subsequently acquire the concepts of spatially related outer appearances. In contrast to §14.1, in this passage Kant does not claim that the Leibnizian definition of space is circular. But this objection is alluded to in other passages in ID, specifically in paragraph D of section §15. Against the Leibnizian view that space is “the *relation* itself which obtains between existing things, and which vanishes entirely when the things are taken away” [Ak 2:403-404], Kant not only objects that the Leibnizians are “in headlong conflict with...the most faithful interpreter of all phenomena, geometry,” but that there is an “obvious circle in the definition of space in which they are necessarily entangled” [Ak 2:404]. The same charge appears in other passages from Kant’s unpublished writings, including the passage already cited from the *Metaphysik Vigilantius*.

concept of time is psychologically prior to the concept of succession is not the same as the explanation for why it might be definitionally prior, and vice versa. And, insofar as he appears to be running together these two notions of priority, he appears to be guilty of confusing the logical analysis of a concept with a psychological explanation as to how that concept is originally acquired. For an insightful discussion of this issue see Gary Hatfield, *The Natural and the Normative: Theories of Space Perception from Kant to Helmholtz* (The MIT Press, 1991), pp. 1-108. The question of whether Kant is primarily concerned with one or the other notion of priority is a longstanding point of contention which dominated a good deal of the literature in the 19th century. For two especially notable conflicting accounts see Hermann Cohen, *Kants Theorie der Erfahrung* (Berlin: Dümmler 2nd ed, 1885), pp. 196-238 and Vaihinger, *Commentar*, Vol. II pp. 151-180. Cohen stresses the “logical priority” of the concepts of space and time, whereas Vaihinger maintains that Kant is primarily interested in the psychological priority of these concepts.

Insofar as I pay regard to the relation with other things, I cannot think any things outside me otherwise than in space. I.e., determinations of the relation of the things outside me cannot be assigned otherwise than under the presupposition of their existence in space.

Therefore if Wolff thinks things in space, and posits space in the order of simultaneous things <*ordine simultaneorum*>, then space is cognized through a concept of the understanding, through the relation of things. Likewise if he determines time by the order of successive things, insofar as they are joined one to another (things which would be one *after* another) <*ordinem successivorum, quatenus sunt invicem connexa (quae post invicem essent)*>: but one must already have thought of space and time before one thinks things as concurrent or successive.³⁶⁴

Here the circularity charge appears in the claim that “one must already have thought of space and time before one thinks things as concurrent or successive” [ibid], and the objection is applied to both the concepts of time and space. Both arguments thus involve distinct claims about the psychological and definitional priority of the concepts of time and space. A proper assessment of these arguments will thus require that we not only determine whether the concepts of time and space are psychologically prior to the representations of spatiotemporal relations, but also whether they are prior in the order of definition. We will also have to determine what relation there is, if any, between these different senses of priority.

Aside from these issues, there are a number of other objections which have been raised against these arguments and which are now standard in the literature. Many commentators have objected that both of Kant’s arguments are tautologous, although there is disagreement, or at least a lack of consistency, as to precisely how they are supposed to be trivial. According to Strawson, Kant’s argument is that we could not represent objects in spatiotemporal relations unless we had the capacity to do so. But if this alone implies the a-priority of time and space, it also entails that all our representations are a priori, since there is no representation we *can* have unless we are also *capable* of having it.³⁶⁵ Others identify the tautology in Kant’s claim that the representation of space is required to perceive objects “outside me” [*ausser mir*] and “outside and next to one another” [*ausser und neben einander*], since ‘outside’ and ‘next

³⁶⁴ *Metaphysik Vigilantius* K₃, Ak 29:982; Cf. Ak 29:976, Ak 17:79. These passages, together with those cited above to show that the Leibnizians are Kant’s primary targets in §14.1, demonstrate that they are also the targets of the argument in §15.A. Additional evidence for this can also be found in Ak 23:22, Refl. XIV E 16-A24, where Kant identifies Leibniz as the target of the corresponding argument concerning space in a marginal comment of his own copy of the CPR (“Space is not a concept of external relations, as Leibniz supposed, but that which grounds the possibility of external relations”). As Kant treats space and time in parallel, and the arguments of the Aesthetic are nearly identical to those of the *Dissertation*, this passage lends further support to the thesis that it is the Leibnizian view which Kant is attempting to refute. And again, Herz, *Betrachtungen*, pp. 292-294 identifies Wolff as the target of the corresponding argument for space in §15.A (ibid, pp. 292-294), and also suggests that Wolff’s theory of time and space in general is Kant’s basic target in both §14 and §15 as a whole.

³⁶⁵ Peter Strawson, *The Bounds of Sense* (London: Methuen, 1966), p. 59.

to' cannot be understood in any way that does not already make a tacit reference to space: all it means to say that objects are represented 'outside me' is that they are perceived in a part of space which is distinct from the one I occupy; similarly, objects are represented 'outside and next to one another' just in case they are represented in different parts of space. Kant's argument is trivial, therefore, since it amounts to the claim that "objects cannot be represented in space unless they are represented in space."³⁶⁶ The same objection can also be raised for the corresponding argument which deals with time, for to say that things cannot be represented successively or simultaneously without representing them in time seems to amount to nothing more than the claim that one cannot represent things successively or simultaneously without representing them successively or simultaneously. This charge appears to be particularly apt if Kant's arguments are intended to be refutations of the Leibnizian view. Kant's argument is that we cannot represent spatially related objects—that is, things existing outside us and apart from one another—unless we first represent them in space, and that we cannot represent things in temporal relations—that is, as successive or simultaneous—without first representing them in time. But for Leibniz, space and time are *nothing more* than systems of relations and all our spatiotemporal concepts are inherently relational: we form a concept of space by perceiving a multitude of coexistent bodies standing in various spatial relations to another, and included among these relations are the appearances of bodies existing outside us and next to one another. If space is nothing more than a system of relations then it is certainly true that I cannot represent objects outside me, or outside of and next to one another, without also representing them in space, but that is only because representing things in those relations is all there is to representing space. Kant's claim that we cannot represent spatially related objects without a representation of space would then be tautologous if representing space involves nothing more than perceiving objects standing in various spatial relations.³⁶⁷ The same applies to the argument that the representations of succession and simultaneity presuppose a representation of time: if time is nothing more than the relative order in which things exist, then Kant's claim that things cannot be represented in relations of succession and simultaneity without an idea of time is again trivial, for in that case the idea of time is nothing more than the empirical concept of those relations. In that case, if space and time are nothing more than systems of relations, then both of Kant's arguments appear to be tautologous, since there is nothing more to representing space and time than perceiving the spatiotemporal relations that objects stand in to one another.

Another standard objection is that Kant's claim that time and space are not empirical concepts does not appear to follow from the premises of his argument.

³⁶⁶ Paul Guyer, *Kant and the Claims of Knowledge* (Cambridge: Cambridge University Press, 1987), p. 346.

³⁶⁷ There is a sense in which this is not true, for Leibniz does acknowledge that we can form a concept of space which refers to something other than these relations; but this abstract concept of space, or, space considered in abstraction of the bodies that exist in spatial relations, does not correspond to anything real, since it is nothing more than a purely imaginary entity that only exists in the mind in much the same way as other mathematical abstractions. Besides, surely it is implausible to maintain that our ability to represent objects in spatial relations presupposes that the mind first have an *abstract* concept of space.

Restricting our attention to the argument in §14.1, Kant argues that the concept of time cannot be obtained from experiences of simultaneity and succession, since those representations *presuppose* a representation of time. But it cannot be presupposed in the sense that a representation of time is *temporally* prior to the representations of succession and simultaneity, as though it were present in the mind as a fully formed, pre-existing container, in which sensations come to be arranged in relations of succession and simultaneity upon the occasion of experience.³⁶⁸ In the *Dissertation*, Kant dismisses any appeal to innate ideas (understood to be occurrent ideas whose existence in the mind precede all experience) as “a philosophy of the lazy...which, by appealing to a first cause, declares any further enquiry futile” [Ak 2:406].³⁶⁹ In answer to the question of whether the representations of space and time are innate or acquired, Kant writes that each has “without any doubt, been acquired, not, indeed, by abstraction from the sensing of objects...but from the very action of the mind, which coordinates what is sensed by it” [Ibid]. Kant is not arguing that the mind must *first* have a representation of time and only *then*, upon the occasion of experience, is it able to have experiences of objects standing in relations of succession and simultaneity, for the representation of time is not presupposed in the sense that it must be present in the mind before it comes to have any experiences at all. These considerations lead directly to the objection, first articulated by Maaß and Feder, that Kant’s premises do not imply his conclusion.³⁷⁰ Even if there is some non-trivial sense in which representations of simultaneity and succession presuppose a representation of time, it still does not follow that time is not an empirical concept. If the representation of time is not present in the mind *prior* to experience, then it must be formed upon the occasion of experience, arising alongside experiences of objects

³⁶⁸ Various commentators have ascribed such a position to Kant at different points in his career, though no one to my knowledge believes it to be Kant’s view in the *Dissertation*. The most prominent defender of such an interpretation is Vaihinger, *Commentar*, Vol. II, pp. 80-88 & 94-98, though he denied that Kant consistently held such a view throughout his career, and specifically for the period in question (viz., 1770s). Vaihinger is followed in this interpretation by both Kemp Smith, *Commentary*, pp.88-98 and Christopher Browne Garnett, *The Kantian Philosophy of Space* (New York: Columbia University Press, 1939), pp. 165-176. For discussion and critical comment, see Falkenstein, *Kant’s Intuitionism*, pp. 79-80 & 83-88.

³⁶⁹ Though the reference to a first cause is unexplained in this passage, elsewhere Kant frequently criticizes the postulation of innate ideas on the grounds that one can only explain their origin by invoking a *Deus ex machina*, while the further question of how we can know that these ideas correspond to the way the world actually is can only be explained by appealing to a pre-established harmony instituted by God. See Kant’s letter to Herz of Feb 21, 1772 [Ak 10:131] where he makes this objection (Cf. B167-168, where Kant discusses the “preformation” theory). Although Kant’s own view that the representations of time and space have their origin in an innate mechanism in the mind may appear to do no better on this score than the alternative view he rejects here, his main concern in these passages is to deny the existence of innate ideas which are fully-formed in the mind from the *beginning* of experience, of ideas which are *occurrently* rather than *dispositionally* innate. Moreover, Kant does not merely posit these innate mechanisms, he gives a positive explanation as to how the mind forms its representations of time and space, of how this innate mechanism operates so as to produce these representations, and that means the explanation of their acquisition does not require any appeal to a divine origin, or a *Deus ex machina*.

³⁷⁰ J.G Feder, *Ueber Raum und Causalität* (Göttingen: Johann Christian Dieterich, 1787), p 25 & J.G. Maaß, “Ueber die transcendente Aesthetik” (in Eberhard, ed., *Philosophisches Magazin*, Pt. II, 117-149), p.124.

appearing in relations of succession and simultaneity.³⁷¹ Moreover, both representations appear to be mutually dependent upon one another: for while it is true that I cannot represent succession and simultaneity without time, I also do not represent time without having representations of succession and simultaneity.³⁷² But if both representations always appear alongside one another and only arise upon the occasion of experience, then it can be true that the representations of succession and simultaneity presuppose the representation of time (since they are mutually dependent upon one another), though the latter is only an empirical concept that has been obtained by abstraction. For nothing rules out the remaining possibility that the idea of time, though it represents something more than a system of relations, is nevertheless obtained by the mind only after it extracts that idea from the various items presented to it in relations of succession and simultaneity. This position has the added advantage of being seemingly more plausible than Kant's, for since the representation of time is always bound together with the experience of temporally related objects—which together form a single representational whole—it would seem that the idea of time itself must be obtained through experience, by abstracting away the particular items that appear to the mind in relations of succession and simultaneity so that only the idea of time remains. The idea of time is then an empirical concept formed by an act of abstraction performed on the various objects presented to the mind in relations of succession and simultaneity. And the same point can be also made against the corresponding argument for space.

There appear, then, to be three main problems with the arguments in §14.1 and §15.A: the first problem is that it is not clear whether the arguments are supposed to show that the concepts of time and space are psychologically or definitionally prior, and how these notions of priority are related; the second problem is that the arguments appear to be tautologous; and the third problem is that each of the arguments appears to be vulnerable to the objection raised by Maaß and Feder. As I hope to show, the correct interpretation of these arguments will be able to evade each one of these objections. But before we turn to our own interpretation, it will be useful to first clear the ground by going

³⁷¹ Note that Kant *agrees* with this point: "... the concept of time rests exclusively on an internal law of the mind, and is not some kind of innate intuition. Accordingly, the action of the mind in coordinating what it senses would not be elicited without the help of the senses" [Ak 2:401-402].

³⁷² As Maaß, "Ueber die transcendente Aesthetik", p. 140 notes, "Es ist freilich wahr, wir können uns kein Zugleichsein, oder Aufeinanderfolgen gedenken, ohne die Vorstellung der Zeit; aber es ist auch umgekehrt eben so wahr, dass wir uns keine Zeit vorstellen können, ohne uns ein Zugleichsein oder Aufeinanderfolgen zu denken. Man könnte also mit eben dem Rechte schliessen, dass diese Vorstellungen a priori zum Grunde liegen müssten.") Possibly the mutual dependence is even stronger than suggested, for it may be that time *cannot* be represented without representations of objects standing in relations of succession and simultaneity. Indeed, this may even be true by Kant's own lights, as he frequently insists that "time itself cannot be perceived" [B219], a crucial premise throughout the Analogies (*see also* A172/B214, B219, B225, A183/B226, A188/B231, B233, A192/B237, B257). Indeed, Kant goes so far as to claim that empty time and space are not possible objects of experience, that it is impossible to perceive time devoid of any contents or to form an "empty representation of time", Cf. A487/515 & A521/B549. If time *cannot* be represented independently of objects standing in temporal relations of succession and simultaneity, then both representations are mutually dependent in the stronger sense that they are necessarily connected with one another, so that neither can ever be had without the other.

over the various ways in which these arguments have already been interpreted by other commentators. This is the task of the next section, which we now turn to.

§4.2: *Alternative Interpretations*

As we noted in our opening remarks, the arguments in §14.1 and §15.A turn on the claim that the concepts of time and space are prior, in some way, to the representations given by sense. According to one historically prominent interpretation, the relevant sense of priority at issue here is *logical* priority, where one concept, A, is said to be logically prior to another, B, iff A is contained in B but B is not contained in A.³⁷³ The concept of space is logically prior to the concepts the mind has of things which exist outside itself and outside one another, while the concept of time is logically prior to the concepts it has of things which occur successively or simultaneously; or, to put it a bit more concisely, since succession and simultaneity are temporal relations, and the concepts of things ‘outside me’ and ‘outside one another’ are just concepts of particular kinds of spatial relations,³⁷⁴ Kant’s basic claim is that the concepts of time and space are logically prior to the concepts the mind has of things standing in various kinds of spatiotemporal relations. On this interpretation, Kant demonstrates that the concepts of time and space are logically prior to the concepts of sensible appearances by showing, on the one hand, that the mind cannot *conceive* of sensible appearances in spatiotemporal relations without *conceiving* of time and space, and on the other, that space and time can be *conceived* of independently of sensible appearances and their spatiotemporal relations.³⁷⁵ This interpretation does appear to be in accordance with the text. Thus, when Kant argues that the possibility of “outer perceptions...*presupposes* the concept of space” since one can only “*conceive* of something as placed outside me” or “*conceive* of things outside one another” by conceiving of them in space [Ak 2:402; my italics], he appears to be arguing that the concepts of outer appearances are logically dependent on the concept of space since the mind cannot conceive of one thing existing outside another without also

³⁷³ Most commentators describe this notion of priority by saying that the concept A is logically prior to the concept B iff A can be conceived of independently of B but B cannot be conceived of independently of A. I have opted to define it differently since conceivability is the criterion rather than the defining mark of logical priority; in other words, logical priority should not be defined in terms of conceivability, but rather by containment, since the *reason* one cannot conceive of A without B is *because* B is contained in A.

³⁷⁴ Representing things ‘outside me’ and ‘outside one another’ is a matter of representing them in particular kinds of spatial relations, i.e., one thing is outside another when they stand in certain relations of distance. Kant acknowledges this explicitly in the version of the argument from the *Critique* (“For in order for certain sensations to be *related* to something outside me...” [A23/B38]).

³⁷⁵ Included among those who endorse some version of this interpretation are Edward Caird, *The Critical Philosophy of Immanuel Kant* (Glasgow: James Maclehose & Sons, 1889), Vol. I, pp. 286-287 (Cf. pp. 178-180); Hermann Cohen, *Kommentar zu Immanuel Kants Kritik der reinen Vernunft* (Leipzig: Verlag der Dürr’schen Buchhandlung, 1907), pp. 26-28; Hermann Cohen, *Kants Theorie der Erfahrung* (Berlin: Dümmler 2nd ed, 1885), pp. 196-238; A.C Ewing, *A Short Commentary on Kant’s Critique of Pure Reason* (University of Chicago Press 2nd ed., 1938), p. 34; Kuno Fischer, *Geschichte der neuern Philosophie, Vol. 3: Kant’s Vernunftkritik und deren Entstehung*, pp. 317-318; H.J Paton, *Kant’s Metaphysic of Experience* (London: Allen & Unwin, 1936), Vol. I, pp. 110-114; Jay Rosenberg, *Accessing Kant: A Relaxed Introduction to the Critique of Pure Reason* (Oxford: Oxford University Press, 2005), pp. 64-65; W.H. Walsh, *Kant’s Criticism of Metaphysics* (Edinburgh University Press, 1997), pp. 17-20; T.E. Wilkerson, *Kant’s Critique of Pure Reason* (Oxford: Oxford University Press, 1976), p. 22.

conceiving of those things in distinct parts of space, and what this entails is that the mind cannot conceive of outer appearances without conceiving of space itself. In the corresponding argument for time, we are told that the mind cannot conceive of things in temporal relations of succession and simultaneity without first conceiving of the times at which they occur, for succession can only be understood as two things existing at *different* times, while simultaneity is the idea of things existing at the *same* time (or as Kant puts it, “those things come *after* one another which exist at *different times*, just as those things are *simultaneous which exist at the same time*” [Ak 2:399]). The concepts of succession and simultaneity are thus logically dependent upon the concept of time since things cannot be conceived of as either successive or simultaneous without conceiving of time.

One immediate problem with this interpretation is that the arguments in §14.1 and §15.A do not yet show that the concepts of time and space are logically *prior* to the concepts of the spatiotemporal relations of sensible appearances, for it is only insofar as the relation of dependence goes in a single direction that we have a case of logical priority, and nothing shown by these arguments rules out the possibility that this dependence is not reciprocal: even if the mind cannot conceive of sensible appearances without also conceiving of time and space, this does not rule out the possibility that conceiving of time and space likewise requires the mind to conceive of sensible appearances standing in various spatiotemporal relations, and that these concepts are thus mutually dependent on one another. In response to this objection, many commentators claim that the demonstration of the logical priority of the concepts of time and space ultimately depends upon the second pair of arguments in the Metaphysical Exposition in the Transcendental Aesthetic, and that the arguments in §14.1 and §15.A, as well as their counterparts in the Aesthetic, are only the first step in a two-stage proof.³⁷⁶ Although these arguments do not appear in ID, it is assumed that Kant recognized the gap in his proof and introduced the second pair of arguments in the Metaphysical Exposition to fill it. The first two arguments of the metaphysical exposition are therefore not independent arguments, but are rather two distinct stages in a single proof and are mutually dependent upon one another. Whereas in the first step of the proof, Kant argues that the concepts of sensible appearances in spatiotemporal relations are logically dependent upon the concepts of time and space, in the second step, he argues that the concepts of time and space are logically independent by showing that they can be conceived of independently of sensible appearances. The representation of space must “be regarded as the condition of the possibility of appearances, not as a determination dependent on them,” for “One could never represent that there is no space, though one can very well think that there are no objects to be encountered in it” [A24/B38-39]; likewise, time is a necessary representation which “grounds all intuitions”, for although one can conceive of time existing without appearances, one cannot conceive of appearances without conceiving of time (“In regard to appearances in general one cannot remove time, though one can very well take the appearances away from time...The latter could all disappear, but time

³⁷⁶ Paton, *Kant's Metaphysic of Experience*, Vol. I, p. 112, Caird, *The Critical Philosophy of Immanuel Kant*, Vol. I, pp. 286-287 & Ralph Walker, *Kant* (London & New York: Routledge, 1978), p. 29.

itself...cannot be removed" [A31/B46]). By putting these arguments together with the arguments of the first metaphysical exposition (or those in §14.1 and §15.A), Kant thus concludes that the concepts of time and space are logically prior to the concepts of sensible appearances and their spatiotemporal relations.

Many of the commentators who endorse this interpretation suggest that these arguments indicate Kant's commitment to a Newtonian view of time and space, or at the very least, that there are certain core theses which Kant appears to have inherited from the Newtonians and which are being articulated in these passages.³⁷⁷ Before we evaluate this interpretation, it will be useful to briefly discuss these Newtonian theses. Among the various theses which comprise the Newtonian view, there are two in particular which are especially relevant here. The first pertains to the ontological status of space and time, and the asymmetrical relations of dependence that allegedly obtain between these entities and their so-called occupants. On the Newtonian view, space and time are self-subsistent entities, they are containers which exist independently of the material bodies and events which are said to occupy them. For the Newtonians, a material body and the region of space which it occupies at a given time are numerically distinct entities: the extension of a body always coincides with the extension of a certain region of space which is said to *contain* that body, and these modes of extension are numerically distinct, even though they coincide, since they belong to different entities: the extension of the former is a property of a material body, while the extension of the latter belongs to space *itself* as one of its parts.³⁷⁸ In turn, each of the finite regions of space which contain a body are regarded as delimited parts of a single entity, and space itself is thus conceived of as an infinitely extended individual which is numerically distinct from the material bodies which occupy its various regions. The same general picture also applies to time: every

³⁷⁷ Many commentators do not explicitly note this, although it seems clear that their interpretations revolve around these theses. Others however make this connection explicit, notably Oliver Thorndike, "Kant's Philosophy of Time in the *Transcendental Aesthetic*" in Stamatiou Gerogiorgais (ed.), *Time and Tense: Unifying the Old and the New* (Munich, Germany: Philosophia Verlag GmbH, 2016), pp. 253-316. Indeed, Thorndike, p. 254 even goes so far as to assert that Kant is *assuming* a Newtonian view. This belief is also shared by Sadik Al-Azm, *Kant's Theory of Time*, pp. 41-42, who maintains that the arguments in the *Aesthetic* implicitly rest on certain assumptions which are "thoroughly Newtonian." But this seems to go too far. On this reading, Kant is assuming that space and time are independently existing containers which are distinct from sensible appearances, and the arguments in the *Aesthetic* consist in a series of inferences about the nature of these entities which are supposed to follow from this initial assumption, viz., they are logically prior to sensible appearances, they are singular entities etc. It is, in other words, an exposition of the marks that belong to the concepts of substantial space and time. The problem is that this interpretation attributes an extremely bizarre dialectical strategy to Kant. Are we really to believe that from the very beginning of the *Transcendental Aesthetic*, where Kant poses the question "Now what are space and time?" and then lists the various possible answers, that he has already implicitly assumed that one of these views is correct (or that the concepts of time and space refer to substantial entities), and then proceeds to argue that the others are false in light of that assumption? This is absurd. Insofar as Kant presents himself as someone who is attempting to *mediate* between the Newtonians and the Leibnizians, the assumptions he makes at the outset of his discussion must be dialectically neutral. Otherwise, the metaphysical exposition will amount to little more than a partisan attack on the Leibnizians, and his arguments will not have any real force against them since they rest on assumptions which the Leibnizians are free to reject.

³⁷⁸ Newton, *Principia*, Vol. I, pp. 6-7. As Clarke, v.36-48, p. 70 puts it "space occupied by a body is not the extension of the body, but the extended body exists *in* space."

event or occurrence is said to be numerically distinct from the moment(s) of time at which they take place, and the collection of these moments taken together as a whole, and considered in abstraction of those events, are what constitute time itself, which thus exists as an individual entity numerically distinct from every one of its occupants. For the Newtonians, space and time are not only numerically distinct, they also enjoy a certain kind of ontological priority to their occupants. On the one hand, space and time are ontologically independent of their occupants. No region of space depends upon any material body for its existence, for one and the same part of space can be occupied by different bodies at different times, and one could even conceive of that space existing independently of any material body whatsoever; and since this applies to every part of space, as well as to space itself as a whole, it follows that the existence of space does not depend upon the existence of the material bodies which occupy it, and that space is thus ontologically independent of material bodies. The existence of time likewise does not require the existence of any event since each moment of time would retain its identity even if it were occupied by different events, and time as a whole would continue to exist even if there were no things in time. On the other hand, whereas space and time are ontologically independent of their occupants, material bodies and events are ontologically dependent on space and time, for the existence of time and space is a necessary condition for the existence of the objects which they contain. While the existence of space does not depend upon the existence of its occupants, the existence of those occupants does depend on the existence of space, for a material body can only exist if it occupies a region of space; and again, though time is ontologically independent of the events which exist in time, no event can exist unless it occupies some moment in time. Given these asymmetrical relations of dependance, space and time are thus ontologically prior to their occupants.

The second Newtonian thesis which is relevant to the arguments in §14.1 and §15.A is a consequence of the first: namely, that all spatiotemporal relations obtain primarily between the fixed parts of time and space, and only derivatively to the entities which occupy them.³⁷⁹ Material bodies and events can only exist insofar as they occupy distinct locations in time and space. To say, then, that there are two bodies, A and B, which are three feet apart from one another, is to say that there are two regions of space, R_1 and R_2 , which are themselves three feet apart, and that A and B only stand in this relation by virtue of occupying R_1 and R_2 . The fixed locations of these regions of space are what ground the relation that obtains between A and B, and the same applies for every other body which occupies a region of space and is spatially related to other bodies. Similarly, the temporal relations of succession and simultaneity that obtain between things in time are grounded in the relations that exist between the moments of time itself, and only apply

³⁷⁹ Newton, *Principia*, Vol. I, pp. 6-8. The parts of time and space are said to be fixed and immovable since the identity of each part consists in the position it has relative to the other parts, and no part can therefore change its position without ceasing to be the very thing that it is. The identity of the parts of time and space is so defined since they are otherwise qualitatively homogeneous: no moment of time or point in space differs *qualitatively* from another, they only differ by virtue of the positions they have in relation to the other parts of time and space, viz., one part of space is only different from another insofar as one is 'here' and another is 'there'. Cf. Clarke, iii.2, p. 18, iii.5, p. 19 & iv.5-6, pp. 29-30.

derivatively to the things which exist at those moments, for it is only insofar as things first occupy distinct moments of time that the temporal relations of succession and simultaneity are possible: thus, A and B can only exist simultaneously if they occur at the same moment of time, and C occurs after D only if C and D first occupy two distinct moments of time, t_1 and t_2 , and the first moment occupied by C occurs before the next moment occupied by D. For the Newtonians, the spatiotemporal relations that obtain between material objects are thus grounded in a prior relation to the fixed parts of time and space, and these spatiotemporal relations only apply derivatively to the material bodies which occupy those regions.³⁸⁰

Both of these Newtonian theses appear to be implicit in the arguments in §15.A and §14.1. When Kant claims that we cannot conceive of things existing outside us and outside one another without conceiving of space, he appears to be assuming that one can distinguish between the representation of things outside us and outside one another, as though it were one thing, and the representation of space, as though it were another—or, that the intentional content of the latter representation refers to something *other* than the sensible appearances which are represented outside us in various spatial relations. And the same assumption is also implicit when he claims that the mind cannot represent things as successive or simultaneous without representing them *in* time. But if space and time are represented as something distinct from those appearances, then Kant seems to be following the Newtonians in asserting that the concepts of time and space refer to independently existing containers, and that sensible appearances occupy the various parts of these entities. Moreover, in both of these arguments Kant claims that the mind cannot conceive of things in spatiotemporal relations—things existing successively and simultaneously or outside of and next to one another—without first conceiving of them in distinct parts of time and space, and this appears to commit him to the second Newtonian thesis that the spatiotemporal relations of appearances obtain primarily between the parts of time and space, and only derivatively to the entities which occupy them. The reason, in other words, why the mind cannot conceive of outer appearances outside itself and outside one another in spatial relations, or things standing in the temporal relations of succession and simultaneity, is because sensible appearances must first occupy distinct spatiotemporal locations before they can stand in spatiotemporal relations to one another. Kant’s arguments for the logical priority of the concepts of space and time thus appear to indicate his commitment to a Newtonian view, or at least a commitment to some of the central theses of that theory.³⁸¹

³⁸⁰ Newton sketches his basic theory in the Scholium to the list of definitions which occur at the beginning of Bk. I of the *Principia*, pp. 6-12. For the identification and discussion of these various theses, I am indebted to Edward Khamara, *Space, Time and Theology in the Leibniz-Newton Controversy* (Frankfurt: Ontos Verlag, 2006), pp. 12-18. Cf. *ibid.*, pp. 12-33 for a complete overview of the central tenets of the Newtonian view, as well as an account of the connection between these various theses.

³⁸¹ It is important to exercise some caution here as to the extent to which Kant is endorsing a Newtonian view, for in ID Kant appears to explicitly reject it:

Those who assert the objective reality of time either conceive of time as some continuous flux within existence, and yet independently of any existent thing (a most absurd fabrication)—this is a view maintained, in particular, by the English philosophers...[Ak 2:400]

But although Kant seems to be endorsing these Newtonian theses in §15.A and §14.1, it is important to introduce a distinction. Earlier we said that for the Newtonians space and time are *ontologically prior* to their occupants, where A is ontologically prior to B iff A can exist without B but B cannot exist without A. On the other hand, Kant is trying to establish the related thesis that the concepts of time and space are *logically prior* to the concepts of sensible appearances, where one concept A, is logically prior to another concept B, iff A is contained in B but B is not contained in A. These notions of priority are distinct, at least in the way we have defined them, though they are certainly closely connected to one another. The connection is based, of course, on the fact that the mind *represents* things through concepts; and, while these concepts can be more or less “accurate”, so to speak, depending on whether the way in which the mind conceives of something corresponds to the way that thing actually is, insofar as the ultimate goal of all philosophical analysis is for the mind to acquire concepts which correctly represent the way things are, the structure of the mind’s concepts is intended to match or correspond to the entities which they represent. Insofar as that is the case, when Kant claims that the concepts of time and space are logically prior to the concepts of sensible appearances, he must also be making an ontological claim about what the referents of these concepts are actually like: if the concepts of time and space are logically independent of the concepts of sensible appearances, then these concepts must refer to entities which are ontologically independent, and conversely, if the concepts of sensible appearances are logically dependent upon the concepts of time and space, then sensible appearances must be ontologically dependent upon time and space. Given this connection, it follows that the relevant sense of priority at issue here is not only logical but also ontological. And in that case, it seems that Kant must not only show that the concepts of time and space are logically prior to the concepts of sensible appearances, but also that space and time themselves are ontologically prior to their occupants.

Now, what the defenders of the logical priority interpretation suggest is that Kant’s basic strategy is to first establish the logical priority of time and space by appealing to certain claims as to what the mind can and cannot conceive: that is, the concepts of time

And again, “Those who defend the reality of space either conceive of it as an *absolute* and boundless *receptacle* of possible things—an opinion which finds favor with most geometers, following the English...” and are guilty of hypostasizing an “empty fabrication of reason: since it invents an infinite number of true relations without there being any beings which are related to one another, it belongs to the world of fable.” [Ak 2:403-404]. But what Kant is rejecting in these passages is the claim that absolute time and space exist independently of the mind; he is not denying that they are entities of some sort which exist independently of sensible appearances. The Leibnizians claim that substantival space and time are merely imaginary entities which only exist in the mind, and that the only things which do exist are the spatiotemporal relations of sensible appearances. In contrast, while Kant agrees with the Leibnizians that time and space are imaginary entities *if* they are posited in and of themselves as real beings, nevertheless, he denies that these concepts only genuinely refer to the spatiotemporal relations of sensible appearances: as the products of certain immutable laws of thought they are the “foundation of all truth in outer sensibility” and thus “*relatively to all sensing things whatsoever...[are] in the highest degree true*” [Ak 2:404; Cf. Ak 2:401]. For Kant, space and time are thus entities which are numerically distinct from appearances, and though these entities do not exist independently of the mind, they are not just the systems of spatiotemporal relations that obtain between bodies and events.

and space are *inferred* to be logically prior to the concepts of sensible appearances from the fact that, on the one hand, the mind cannot conceive of sensible appearances without also conceiving of time and space, and on the other, that space and time can be conceived of independently of sensible appearances.³⁸² Although these commentators generally do not explain how the ontological priority of time and space is supposed to follow from this, perhaps the most plausible explanation is that this additional conclusion is based on the assumption that conceivability is a mark of possibility, and that one thing is ontologically distinct from another if it is possible for the first to exist without the second. Thus, if one can conceive of A existing without B, then it is possible for A to exist without B existing; but then, by Leibniz's Law, A must be ontologically independent of B, since one thing cannot be identical to another if the first can exist while the second does not. Conversely, if one cannot conceive of B existing without A, then it is not possible for B to exist without A existing, and in that case, B must be ontologically dependent on A. In other words, from the fact that the concepts of time and space are logically prior to the concepts of sensible appearances, and the assumption that conceivability implies possibility, Kant is able to then infer that space and time are independently existing entities which are ontologically prior to sensible appearances.

One major advantage of this interpretation is that it explains Kant's rejection of the Leibnizian-Wolffian definitions of the concepts of time and space.³⁸³ Insofar as these concepts refer to independently existing entities which are ontologically prior to their occupants, they cannot be defined as systems of relations, or in terms of the spatiotemporal relations that obtain between the entities which exist *in* time and space: the concept of time cannot be defined as an order of succession, and space cannot be defined as an order of coexistence, since time and space are not identical to the spatiotemporal relations that obtain between sensible appearances. Indeed, insofar as the spatiotemporal relations of appearances are themselves grounded in a prior relation to the parts of time and space, and are thus derivative, the Leibnizian-Wolffian definitions of time and space are circular: time cannot be defined as the order in which things succeed one another, for things cannot succeed or be simultaneous with one another unless they

³⁸² To the extent that being is prior to thought, ontological priority is in some sense more basic than logical priority, for whether or not a concept genuinely agrees with its object depends upon what the thing represented is actually like, regardless as to how the mind may or may not conceive of it; and in that case, the *reason* the concepts of time and space are logically prior to the concepts of outer appearances is *because* space and time themselves are ontologically prior to those entities. On the other hand, at some level the distinction we have just drawn may appear to some to be superficial, or perhaps even meaningless, for the only way we can discover what things are like is by thinking about them and forming concepts of those objects, and one cannot, consequently, get at the thing itself, so to speak, without the mediation of concepts. Consequently, although being is prior to thought in the sense that the referents of our concepts determine whether or not those concepts are accurate, and concepts are only correctly defined if the definition agrees with what its referent is like in and of itself, in another sense logical priority is more basic since the mind only comes to determine what the referents of its concepts are actually like by analyzing the concepts it forms of those things. And that is why, presumably, the defenders of the logical priority interpretation infer the ontological priority of space and time from the fact that the mind's concepts of time and space are logically prior to its concepts of sensible appearances.

³⁸³ Whether it can also explain why Kant rejects the Leibnizian account of the *psychological* origin of these concepts is another matter, as we will see momentarily.

first occupy distinct moments of time which are themselves successive or simultaneous, and space cannot be defined as an order of coexistence, since things can only coexist by standing in various relations of distance to one another if they first exist in distinct parts of space. Time and space are thus prior to the spatiotemporal relations of sensible appearances, and any attempt to define them in terms of those relations will be circular.³⁸⁴

But for all its advantages, there are a number of problems with this interpretation. The first problem is that it is doubtful whether Kant can actually *prove* that space and time are independently existing entities which are ontologically prior to their occupants from these claims about what the mind can or cannot conceive. As Leibniz observed, many of the concepts which the mind has cannot actually be satisfied by any possible object since they implicitly contain a contradiction: although one can, for example, form a concept of the most rapid motion, this concept does not in fact correspond to any possible object, even if one might mistakenly believe that one can conceive of the most rapid motion. In recognition of this, recall that it was standard to distinguish between two kinds of definition, nominal and real: in order to have a nominal definition of a concept, one must be able to enumerate the marks which are both necessary and sufficient for any object to fall under that concept, but in order to have a real definition, what is also required is that one have a proof that the concept defined is possible. The Leibnizians applied this distinction between nominal and real definitions to explain the difference between true and false ideas: “An idea is true when the concept is possible; it is false when it implies a contradiction.”³⁸⁵ Now, although Kant does not provide his own *positive* definitions of the concepts of time and space—and, given that he refers to them as *primitive* concepts of sensibility, it seems that these concepts are perhaps not definable at all, except by way of ostension—he does reject the alternative, Leibnizian definitions, and the reason he does so is because the concepts of time and space allegedly refer to independently existing entities which are numerically distinct from their occupants. But given the distinction between true and false ideas, Kant must provide some demonstration that these concepts of time and space are “true ideas”, or, that when the mind conceives of time and space as independently existing containers, these concepts refer to entities which are genuinely possible. Kant’s claim that the mind can conceive of space and time independently of sensible appearances does not, by itself, entail that it is genuinely possible for space and time to exist independently of appearances, for what guarantee do we have that there isn’t some implicit contradiction contained in this notion, and that what the mind believes it is conceiving of is not genuinely possible after all?

³⁸⁴ Although Kant’s refutation of the Leibnizian-Wolffian definition is based on his claims about what the mind can and cannot conceive, the ontological priority of time and space is also essential, and in some sense is what ultimately justifies it, since the definition of a concept is only true if it agrees with its object: in other words, the *reason* why the *concept* of time cannot be defined as the series of actual things which exist one after another, and the *concept* of space cannot be defined as an order of coexistence, is because time *itself* is not an order of succession and space *itself* is not an order of coexistence. Although Kant rejects the Leibnizian-Wolffian definitions by first establishing the logical priority of these concepts, logical priority also requires ontological priority, for it is only insofar as space and time themselves are not systems of relations that Kant’s refutation of the Leibnizian-Wolffian definition is justified.

³⁸⁵ Leibniz, “Meditations on Knowledge, Truth, and Ideas,” p. 293.

It is important to recognize that these concerns cannot be dismissed out of hand, for this demonstration is not nearly as straightforward as some appear to assume. Perhaps the best way of illustrating the kinds of difficulties which Kant faces is by returning once again to the debate between the Leibnizians and Newtonians.³⁸⁶ In general, it was believed that one can determine that a concept is possible in one of two ways, either through experience or through a demonstration. Thus, if we encounter an object in experience, we know the concept that object corresponds to is actually instantiated, and that means we also know that it is a possible concept, for anything actual must be possible. But while some commentators appear to assume that the possibility of space and time can be established *directly* through experience, the problem is that this is not a genuine option for any Newtonian, for the Newtonians denied that the mind ever has any direct perceptual acquaintance with either time or space themselves.³⁸⁷ And on this point, Kant

³⁸⁶ For the sake of brevity, I will focus primarily on space from here on out. But this will not effect anything essential to the arguments that follow since nearly all the main points we are about to make can also be easily applied to the case of time.

³⁸⁷ Newton, *Principia*, pp. 6-8 distinguishes between absolute and relative space, where the latter refers to the system of relations that obtain between a multitude of coexistent bodies at a given time, and the former is space considered in and of itself, as the independently existing container which these bodies occupy. Although absolute space *exists* independently of the material bodies which occupy it, the existence of this entity was not thought to be established directly through perceptual experience, for as Newton, *Principia*, p. 8 stresses, through perceptual experience we are only ever acquainted with the relative locations of objects, never space itself.

But since these parts of space cannot be seen and cannot be distinguished from one another by our senses, we use sensible measures in their stead. For we define all places on the basis of the positions and distances of things from some body that we regard as immovable, and then we reckon all motions with respect to these places, insofar as we conceive of bodies as being changed in position with respect to them. Thus, instead of absolute places and motions we use relative ones, which is not inappropriate in ordinary human affairs, although in philosophy abstraction from the senses is required.

For the Newtonians, the mind is never perceptually acquainted with the absolute locations of material bodies, or absolute space itself, but only the relative locations of objects, or relative space, and the existence of absolute space cannot, then, be established directly through perceptual experience. And it is precisely because absolute time and space cannot be directly perceived or sensed that “the common people conceive of those quantities under no other notions but from the relation they bear to sensible objects” (ibid, p. 6). There are two reasons given by the Newtonians which explain why absolute space cannot be perceived. The first reason, explicitly noted in the passage just cited, is that the parts of space are qualitatively indiscernible, and what this implies is that there is no way of detecting whether or not, at any given moment, an object’s location remains fixed with respect to the parts of absolute space. The second reason, which is also hinted at in this passage, is a consequence of Newton’s definition of absolute motion. For the Newtonians, the absolute location of a material body is defined as the relation which obtains between that body and the independently existing region of space which it occupies, and absolute motion is defined, in turn, as a change in a body’s location relative to the fixed parts of absolute space. The parts of space, in contrast to the bodies which fill them, are necessarily immovable, for since they are qualitatively identical, the identity of each part consists in the relation it bears to the other parts of space, and one cannot, therefore, conceive of a part of space moving “outside itself” without that part ceasing to be what it is. From the fact that the parts of space are immovable, the Newtonians inferred that space itself must be causally inefficacious: since one thing can only causally affect another through impact, the parts of space must be causally inert if they are immovable. And, if space is causally inert, the parts of absolute space cannot be directly perceived through the senses since they cannot affect our sense organs. For further discussion of the Newtonian view that space is causally inert, see Khamara, *Space, Time and Theology*. pp. 21-22.

Admittedly, there are some Newtonians who appear to assert that space itself is directly perceived. Locke, for example, claims that the ideas of “space, extension, figure, rest and motion” are simple modes

appears to be in *agreement* with the Newtonians: in his essay from 1768 on incongruent counterparts—which is also the first publication where he endorses and attempts to establish a Newtonian view of space—Kant writes that “absolute space is not an object of outer sensation...For this reason, there is only one way in which we can perceive that which, in the form of a body, exclusively involves reference to pure space, and that is by holding one body against other bodies” [Ak 2:383].³⁸⁸ But if the mind is never

that can be acquired by more than one sense (unlike the ideas of colors, sounds, etc.), since they “...make perceivable impressions, both on the eyes and touch; and we can receive and convey into our minds the ideas of the extension, figure, motion, and rest of bodies, both by seeing and feeling” (*Essay*. Bk II.v.1). The ideas of distance, extension, shape (etc.,) are given directly through sensation, either when we perceive the distance between any two bodies (or parts of the same body) through our sense of sight, or when we feel those bodies, or their parts, through our sense of touch. And in *Essay*, Bk.II.xiii.2, Locke writes

I have showed above, chap. V, that we get the idea of space, both by our sight and touch; which, I think, is so evident, that it would be as needless to prove that men perceive, by their sight, a distance between bodies of different colours, or between the parts of the same body, as that they see colours themselves: nor is it less obvious, that they can do so in the dark by feeling and touch.

But although Locke does appear to assert that the idea of space is given directly through sensations of sight and touch, this is misleading, for it seems that Locke is only describing how the mind forms an idea of *relative* space (viz., the relations of distance that sensible objects have to one another), not absolute space. Notice, for example, that in the first passage he refers to space as a simple *mode* of body; but obviously absolute space is not a *mode* of body, since it is a distinct entity which bodies occupy. Moreover, in the remainder of his exposition, Locke, *Essay*.Bk.II.xiii.7-9 makes it clear that the mind forms an idea of absolute space through abstraction, in much the same way as the Leibnizians (see chapter 3) and other Newtonians (see below) propose. This is recognized by Jay Rosenberg, *Accessing Kant*, p. 64

If you're a representative realist like Locke, then, even if you think that space has formal being, you're going to have trouble in explaining how we come to have a concept of it. The problem is that space is causally impotent. A pink ice cube can perhaps act on us to produce a representation of it, but the *space* occupied by the pink ice cube can't similarly act on us to produce a representation of *it*. Locke's solution was to hold that material objects cause not only sense impressions of themselves, but also representations of *instances* of basic spatial characteristics (determinate shapes and sizes, determinate relationships of direction, adjacency or distance, etc.,). From these we can proceed to complex concepts of spatial characteristics, and these in turn are mobilized to form the concept of *space*.

Through the senses, the mind only perceives extended bodies standing in certain relations to one another, it does not *directly perceive* the parts of space which those bodies occupy. The concept of space cannot be given directly through sensation since space itself cannot be detected by means of the senses; instead, what is originally given by sensation are the ideas of certain kinds of determinations which belong to material bodies, such as extension, size and shape. Through the sensations given by sight and touch the mind becomes perceptually acquainted with *these* determinations; and when the mind perceives the extension of a body through sight or touch it does not also directly perceive the region of space which that body occupies, as though the content of that perceptual experience included *both* the extension of that body and the extension of space itself.

³⁸⁸ Some commentators may be tempted to argue that even if it is true that the *Newtonians* denied that the mind has any direct perceptual acquaintance with space or time, it does not necessarily follow that Kant was in agreement with them on this question. Indeed, insofar as Kant maintains that the mind has pure *intuitions* of both space and time themselves, perhaps he was willing to allow that the mind is in fact perceptually acquainted with these entities, in contrast to both the Newtonians and Leibnizians. And if that is true, then presumably Kant also believed that the actuality (and hence possibility) of these concepts could be established directly through experience. The problem, however, is that if most of Kant's contemporaries agree that space and time themselves cannot be directly perceived, then it does not seem that Kant can simply assume otherwise without argument; indeed, at the very least, he cannot assume this if he is trying to *refute* the Leibnizians, since this assumption is not dialectically acceptable. Besides, it is not obvious that the mind is in fact perceptually acquainted with either of these entities. When the mind perceives a multitude of coexistent entities standing in a variety of relations to one another, it is doubtful whether it

perceptually acquainted with time or space, it is not possible to establish the existence of these entities directly through sensory experience. It is here that the Leibnizians enjoy a distinct advantage over the Newtonians, for since the spatiotemporal relations of sensible appearances are perceived directly through the senses, the possibility of relative space and time can be established through experience. The Newtonians, on the other hand, face a serious difficulty, for if space and time are supposed to be entities which are distinct from sensible appearances, but neither of these entities can ever be directly perceived, then what guarantee do they have that these entities actually exist, or are even genuinely possible? Certainly this cannot be established solely on the basis of what the mind can or cannot conceive, for without a demonstration that these entities are actual, the Leibnizians will simply respond that these notions do not correspond to anything that exists but are instead nothing more than imaginary or fictitious entities which only exist in thought. Indeed, not only do the Leibnizians deny that space and time are actual, they go even further and deny that these entities are even *possible*.³⁸⁹

If space and time cannot be directly perceived, and Kant does not provide any demonstration that these concepts are possible, then his arguments for the logical and ontological priority of time and space are of little value. Indeed, the problem can be illustrated further by considering how the Leibnizians would respond to these arguments. Consider, for example, Kant's argument that space must be ontologically independent of outer appearances since the mind can conceive of space without conceiving of those appearances. It is extremely unlikely that this argument would persuade any sensible Leibnizian. Contrary to what some commentators appear to imagine, the Leibnizians *allow* that the mind can conceive of space independently of the multitude of coexistent entities that stand in relations of distance to one another. Recall that the Leibnizians distinguish between abstract and concrete space, where the latter refers to the various relations of distance, or order of situations, that a multitude of coexistent bodies have to

also perceives space itself as something in addition to those entities; indeed, it seems equally plausible to say that all the mind perceives is a multitude of coexistent entities standing in various relations of distance, and there is nothing *in addition* to those things which the mind directly perceives. Similarly, when the mind perceives a succession of things one after another, it does not seem that time itself is directly perceived alongside those occurrences, as one thing coexisting alongside the others. At the very least, this possibility cannot be simply dismissed out of hand if most of Kant's contemporaries denied that the mind has any direct perceptual acquaintance with space and time themselves. But aside from these issues, perhaps the most important consideration which tells against this possibility is that there is textual evidence which indicates that Kant is in *agreement* with the Newtonians: a crucial premise throughout the Analogies is that "time itself cannot be perceived" [B219] (*see also* A172/B214, B219, B225, A183/B226, A188/B231, B233, A192/B237, B257), and Kant often asserts that empty time and space are not possible objects of experience, and that it is impossible to perceive time and space devoid of any contents [A487/515 & A521/B549]. As for the claim that the mind has a pure intuition of space and time, we will explain how this is to be understood below, and this explanation will not entail that the mind directly perceives space and time.

³⁸⁹ Leibniz provides a whole series of arguments which purport to show this throughout his correspondence with Clarke. That Kant was also sensitive to some of the possible contradictions which the Leibnizians allege are contained in the notions of substantival space and time is indicated by his remarks Ak 2:383, Ak 2:392, Ak 2:404, Ak 2:405. Kant, however, attempts to deal with these contradictions by arguing that they only arise either when we attempt to cognize space and time through concepts of the understanding, or when these entities are assumed to exist independently of the mind.

one another, while the former is the order of situations given by concrete space considered in abstraction of those bodies. The mind can certainly *conceive* of an order of situations independently of the bodies which stand in those relations of distance, but what the Leibnizians deny, of course, is that this notion of abstract space corresponds to anything which could genuinely *exist* independently of those bodies. These relations of distance are all determinations of those bodies, and no determination can exist independently of the substance it belongs to; consequently, if one conceives of the order of situations that a multitude of coexistent bodies have to one another as something that exists independently of those bodies, then what one conceives of is self-contradictory, or at least metaphysically impossible. For the Leibnizians, the notion of abstract space does not correspond to anything *real*. It is a purely imaginary entity that only exists as an idea in the mind, in much the same way as other mathematical abstractions, like numbers, sets, etc., and anyone who assumes otherwise is guilty of hypostasizing a mere abstraction and treating it as though it were a concrete entity existing in the world. But in that case, when Kant claims that the concept of space must be ontologically independent of outer appearances since the mind can conceive of space without conceiving of those appearances, the Leibnizians can simply respond that Kant is guilty of committing the very same mistake of hypostatization which they accuse the Newtonians of: although one can allow that the mind can conceive of space in the abstract—or an order of situations that a multitude of coexistent bodies have to one another independently of those bodies—this does not entail that space itself can or does exist as some entity which is ontologically independent of outer appearances. Any such notion of space, which conceives of it as some independently existing entity which is numerically distinct from outer appearances, is implicitly self-contradictory and is thus not a true idea, but a false idea.

A similar response can be made to the argument in §15.A which purports to show that the concept of space is logically prior to the concepts of outer appearances since the mind cannot conceive of things existing outside itself and outside one another without conceiving of them in distinct places. As we have already noted, what Kant appears to be assuming here is that a body's location is to be conceived of as some entity which is numerically distinct from the body which occupies it. But on what grounds does Kant assume that this is a true idea of place? For the Leibnizians, these "places" are nothing more than the various relations of distance that a multitude of co-existent bodies have to one another, and they are certainly not entities which exist apart from their occupants. Unless Kant has some demonstration that this concept of place is a "true idea", the Leibnizians will object that this argument does not establish that space is actually prior to outer appearances. Once again, the Leibnizians *allow* that the mind can conceive of a body's place independently of that body: the mind forms a notion of abstract place by focusing upon a body's situation, or extension, and then conceiving of that determination in abstraction of the other determinations which belong to it.³⁹⁰ But what the mind

³⁹⁰ Recall that 'situation' can either refer to the system of relations that define the angles and distance of a *collection* of bodies, or to the relations of distance between the parts of a single body. In the latter case, the arrangement of parts is an individual accident of a body and constitutes that body's extension.

conceives of is not some entity, or part of an entity, which genuinely exists apart from that body. To the contrary: since a body's extension, or situation, is nothing more than one of its determinations, and no determination can exist on its own apart from the substance which it belongs to, Leibniz claims that it is absurd to believe that what the mind conceives of when it represents the situation of a body in abstraction of its other determinations is something that *exists* independently of that body. All the mind conceives of in this case is one determination considered apart from the others, and to assume that a body's situation or extension is something that exists apart from that body is to hypostasize a mere abstraction. The Leibnizians can agree with Kant's claim that the mind cannot conceive of things outside itself and outside one another without conceiving of them in distinct places, but the only reason why this is true is because a body's place, or situation, is a determination of that body: one cannot conceive of a material body without conceiving of its place since this would be tantamount to conceiving of that body independently of its extension, but since extension is an essential determination of material objects, it is impossible to conceive of a body without conceiving of its extension.³⁹¹ And so, although one cannot conceive of outer appearances without conceiving of them in distinct places, one should not hypostasize the notion of a body's place by conceiving of it as some independently existing entity which is distinct from the determinations that belong to that body, as though the extension of that body were contained in some other extended thing (i.e., a part of space) which that body occupies. Consequently, from the fact that the mind cannot conceive of outer appearances without also conceiving of them in distinct places, it does not follow that space, or these places, are ontologically prior to sensible appearances; to the contrary, since a body's situation is a determination, and every determination is ontologically dependent on the substance it belongs to, a body's place is ontologically dependent on that body. If Kant wishes to reject this by claiming that an object's place is actually some entity which is numerically distinct from that body, then some demonstration is required which shows that this notion of space, or place, is a true idea, and not a false one. And certainly this claim cannot be established by appealing solely to what the mind can and cannot conceive for even if the mind conceives of a body's place as something which exists independently of that body, it does not follow that this notion corresponds to anything which is genuinely possible or actually exists. The Leibnizians will simply respond that Kant is hypostasizing a mere abstraction, and that when he conceives of an object's place as something which exists independently of that body, he is conceiving of something which is impossible, since this is tantamount to conceiving of a determination of body existing independently of that body.³⁹²

³⁹¹ The claim that 'All bodies are extended' is Kant's very own example of an analytic judgment [A7/B11].

³⁹² One might be tempted to respond here by arguing that these Leibnizian objections do not really refute Kant's position, but only provide an alternative analysis of his claims that the mind can conceive of time and space independently of sensible appearances, though not vice versa. But while it may be true in some sense that what we have here is a stalemate between two competing accounts, to acknowledge stalemate is tantamount to recognizing that Kant has not succeeded in refuting the Leibnizian view, in spite of his explicit claims to have done so. Moreover, since the existence of relative space is demonstrated by experience, to the extent that Kant and the Newtonians go further and maintain that space and time are entities which are distinct from the spatiotemporal relations of sensible appearances, it seems that they

The basic problem, then, is that Kant cannot infer the ontological priority of time and space from any of these claims about conceivability *alone*; from the fact that the mind can conceive of time and space as independently existing entities, it does not follow that these concepts refer to anything which is genuinely possible. And in the absence of any demonstration which shows that it is possible for space and time to exist independently of sensible appearances, the Leibnizians will simply respond that the Kantian notions of time and space are implicitly self-contradictory, and that when the mind conceives of time and space as independently existing entities, it is not conceiving of anything genuinely possible. Now, given how well acquainted Kant was with these issues, surely he must have recognized that he could not simply infer the ontological and logical priority of space and time from any of these claims about conceivability alone. As we saw in the previous chapter, throughout his correspondence with Clarke Leibniz repeatedly objects that the Newtonians are guilty of falsely hypostasizing mere abstractions. It is difficult to believe that Kant could have simply ignored these concerns. And this is especially true given that Kant himself was a Leibnizian relationalist until as late as the mid-1760s, and was surely well acquainted with Leibniz's objections.³⁹³ The question that needs to be answered then is: how did Kant demonstrate that these concepts are possible?

Insofar as space and time cannot be directly perceived, the existence of these entities cannot be proven directly through sensory experience. Recognizing this problem, the Newtonians attempted to *demonstrate* the possibility of these concepts by showing how they are formed from others which are already known to be actual:³⁹⁴ although time and space themselves cannot be directly perceived, the Newtonians argued that one could establish the existence of these entities by appealing to the reality of absolute motion, whose effects were assumed to be directly observable. The Newtonians thus attempted to *infer* the existence of absolute space from the assumption that absolute motion exists and can only be defined as a change in absolute space, and since absolute space is therefore

bear a special burden of proof which the Leibnizians do not. And in that case, what we have here is perhaps something less than a stalemate.

³⁹³ In the Prize Essay of 1764, Kant claims that the concepts of *next to* and *after* are primitive concepts which are prior to the concepts of space and time, and that the latter should be analyzed in terms of the former ("there are many concepts which are scarcely capable of analysis at all, for example...the concepts of *being next to each other* and *being after each other*. Other concepts can only be partially analyzed, for example, the concepts of *space*, *time*..." [Ak 2:280]). This of course is the exact opposite of what Kant asserts in ID. In addition, the various issues Kant raises in this essay about the problems involved in conceptual analysis seem to only strengthen these concerns.

³⁹⁴ Such a demonstration can either proceed *a posteriori*, in the traditional sense of reasoning from consequent to ground (or conditioned to condition) or *a priori* from ground to consequent (or condition to conditioned). A concept is shown to be possible *a posteriori* by first proving that some other concept is possible, and then demonstrating that the first concept is a necessary condition of the second. On the other hand, a concept is shown to be possible *a priori* in one of two ways, depending on whether it is simple or complex. If a concept is complex, then one demonstrates it is possible *a priori* by starting with other concepts which are already known to be possible, and then showing that no contradiction arises when those concepts are combined to form a new concept. On the other hand, if a concept is simple, then it must also be possible, for a concept only contains a contradiction when it is composed of at least one pair of mutually inconsistent marks, and since simple concepts do not contain more than one mark, they cannot contain incompatible marks. One demonstrates that a simple concept is possible *a priori* directly through ostension.

actual, it must also be possible.³⁹⁵ That Kant was familiar with this basic strategy is clearly indicated by the opening remarks in his essay of 1768:

Everybody knows how unsuccessful the philosophers have been in their efforts to place this point once and for all beyond dispute, by employing the most abstract judgments of metaphysics. Nor am I familiar with any attempt to attain this end so as to speak *a posteriori* (in other words, by employing other indisputable propositions which, while lying outside the realm of metaphysics, are nonetheless capable of furnishing a touchstone of their correctness through their application *in concreto*), apart, that is, from the treatise of the illustrious *Euler*. [Ak 2:378].

In this passage Kant refers to Euler's attempt to demonstrate the reality of absolute space *a posteriori*, but this demonstration is not unique since Euler essentially follows the Newtonians by arguing that the reality of absolute space is proven by the allegedly observable effects of absolute motion: like the Newtonians, Euler argues that these effects demonstrate that there is a real distinction between absolute and relative motion, and this distinction, in turn, can only be grounded on the existence of absolute space, which must therefore be actual (and hence possible). Kant was thus certainly cognizant of the Newtonian strategy to establish the possibility of these concepts *a posteriori*. And what is also indicated by this passage is that Kant was extremely sensitive to the difficulties involved in demonstrating the reality of absolute space, and recognized that what is required above all else is a demonstration that this concept is genuinely possible.³⁹⁶ Interestingly enough, however, Kant also expresses his discontent with the Newtonian proof, which he claims is unsatisfactory because

It only shows the difficulties involved in giving a determinate meaning to the universal laws of motion if one operates with no other concept of space than that which arises from abstraction from the relations between actual things. It does not, however, consider the no less serious difficulties which arise if, in applying the laws just mentioned, one attempts to represent them *in concreto*, employing the concept of absolute space. [Ak 2:378].

The basic problem is that it is no easier to establish the existence of absolute motion through observation than it is to directly perceive absolute space: whether or not some

³⁹⁵ Newton, *Principia*, Vol. I, p. 7 & pp. 8-12. Likewise, Clarke, iv, 13-14, p. 31 stresses that the demonstration that absolute space exists is based on the reality of absolute motion; Cf. Clarke, v. 52-53, p. 72. As Edward Khamara, *Space, Time and Theology in the Leibniz-Newton Controversy*, pp. 23-25 notes: "the reality of absolute space and absolute time is established by the reality of absolute motion, which is defined in terms of absolute space and time", and the "reality of absolute motion...can be established by its effects, particularly the existence of centrifugal force." Unlike Kant, the Newtonians did not in general *infer* that space and time are ontologically independent of material bodies and events from the fact that one can conceive of time and space existing without conceiving of any of their occupants; instead, the ontological priority of these entities was *inferred* from the assumption that there is a genuine distinction between absolute and relative motion. From the fact that absolute motion exists, and can only be defined as a change in absolute space, space itself must also exist, and from that, the Newtonians *inferred* that one can objectively conceive of space independently of its occupants.

³⁹⁶ Kant acknowledges this concern once again in his concluding remarks [Ak 2:383], though he believes it can now be dismissed in light of his demonstration that these concepts must be actual, and hence possible:

motion is absolute cannot be determined by direct observation, and it is debatable whether the effects which the Newtonians appeal to actually require the reality of absolute motion. Arguably, absolute motion cannot be directly perceived any more than absolute space, and insofar as that is the case, the Newtonian proof is of very limited use.³⁹⁷ In light of this difficulty, Kant proposes to deliver a more secure proof which rests on certain “indisputable propositions”; in particular, Kant believes he can demonstrate the reality of absolute space by appealing to certain sensible phenomena whose existence is uncontroversial, namely bodies which are “exactly equal and similar to one another, but which cannot be enclosed in the same limits” [Ak 2:382], or what he calls incongruent counterparts.³⁹⁸ According to Kant, the existence of incongruent counterparts is an indubitable fact based on direct sensory experience; but, as he proceeds to argue, the possibility of incongruent counterparts can only be explained on the assumption that absolute space exists. Now, putting aside the question of whether these arguments are successful, for our purposes what matters here is that the strategy which Kant employs to demonstrate the actuality of space is no different from the one employed by the Newtonians: namely, Kant attempts to demonstrate the actuality (and possibility) of space a posteriori by arguing that it is a necessary precondition for other cognitions which are already known to be actual. The only difference is that the cognitions which Kant appeals to are allegedly more secure than those upon which the Newtonians base their own demonstrations.

The very same strategy which Kant pursues in his essay of 1768 continues to be at work in ID, where he once again appeals to the existence of incongruent counterparts in order to demonstrate the existence of space [Ak 2:402-403]. In addition, in ID Kant expands on this basic strategy even further by citing the existence of true laws of motion [Ak 2:397-398, 401] and the acknowledged fact of a priori knowledge in geometry [Ak 2:397-398, 402-405] as other examples of phenomena whose existence is agreed upon, but all of which, he says, presuppose the existence of space and time. What all this suggests, then, is that Kant must have believed the possibility of space and time could be established a posteriori. And if that is correct, then perhaps we now have a solution to our original problem.³⁹⁹

³⁹⁷ Newton, *Principia*, Vol. I, p. 12 likewise acknowledges these difficulties: “It is indeed a matter of great difficulty to discover, and effectually to distinguish, the true motions of particular bodies from the apparent; because the parts of that immovable space, in which these motions are performed, do by no means come under the observation of our senses.”

³⁹⁸ As Kant puts it in Ak 2:378:

My purpose in this treatise is to see whether there is not to be found in the intuitive judgments about extension, such as are to be found in geometry, clear proof that: *Absolute space, independently of the existence of all matter and as itself the ultimate foundation of the possibility of the compound character of matter, has a reality of its own...* The proof, which I am seeking here, is intended to furnish...geometers themselves with a convincing argument which they could use to maintain, with the certainty to which they are accustomed, the actuality of their absolute space.

³⁹⁹ Whether or not the possibility of these concepts can also be established a priori is another matter. If the concepts of time and space are complex, then Kant would have to enumerate all the different determinations which belong to space and time, and show how these determinations can be combined together into a single thing without contradiction. But insofar as Kant maintains that space and time are *simple* concepts of

To this point, then, nothing we have said demonstrates that the logical priority interpretation is ultimately indefensible. All of the observations made thus far only show, at most, that the ontological and logical priority of time and space cannot be established by appealing solely to the arguments which turn on what the mind can or cannot conceive, but instead depend in part upon whether these other, a-posteriori arguments are successful. This does not prove that there is anything wrong with the logical priority interpretation *per se*, but only that Kant's attempted refutation of the Leibnizian view is more complicated than most appear to assume. But this does not mean that our discussion up to this point has been in vain. To the contrary: the various issues we have just discussed have important implications for the rest of Kant's argument since they lead to certain other difficulties which do ultimately demonstrate that the logical priority interpretation is untenable.

Till now we have focused our attention on Kant's efforts to demonstrate that space and time are both logically and ontologically prior to sensible appearances. There is, however, another aspect of these arguments which has not yet been addressed. As we saw above, Kant is not only trying to refute the Leibnizian *definitions* of time and space as systems of relations, he is also trying to refute the Leibnizian account as to how the mind originally *acquires* the concepts of space and time: his central claim is that the concept of space cannot be acquired by abstraction from outer sensations, and that the concept of time cannot be acquired from the sensory experiences of succession or simultaneity. Since it is clear from the text that Kant is trying to establish a psychological claim about how the mind originally acquires these concepts, any interpretation which does not successfully explain this aspect of his argument must be judged inadequate. The problem, however, is that it is difficult to see how one could infer that the concepts of space and time cannot be acquired by abstraction from sensory experience by appealing to the alleged fact that they are logically (or ontologically) prior to sensible appearances.

It is natural to assume that if the concepts of space and time are logically prior to the concepts of sensible appearances, then they must be psychologically prior as well. How, after all, could one concept fail to be psychologically prior to another if the first is contained in the second, and is one of the necessary conditions required for conceiving of the latter? But this little argument is really far too simplistic. The first problem is that, in general, the fact that one concept A is logically prior to another B does not show that A was not originally acquired by abstraction from experience or given directly by sensation. The concept of color is logically prior to the concept of red since one cannot conceive of red without conceiving of color though one can conceive of color without conceiving of

sensibility, the possibility of these concepts must be somehow directly intuited through introspection or ostension. And many do appear to assume that Kant can somehow demonstrate these concepts are possible a priori from the simple fact that one can conceive of them without contradiction, or somehow intuit their possibility directly. Admittedly, at times Kant does appear to suggest that he believes this himself, as in the passage cited above when he writes that "the reality of space...is intuitive enough for inner sense" [Ak 2:383]. But in spite of Kant's apparent confidence, the problem is that this approach leads us to the same difficulties already enumerated above: namely, given the Leibnizian's reservations, what makes Kant so sure that these concepts are in fact genuinely possible?

red, but this certainly does not show that the concept of color is not empirical, for color is a paradigmatic example of a concept acquired by abstraction from sensory experience. What this example shows is that even if Kant has demonstrated that the concepts of time and space are logically prior to the concepts of sensible appearances, it does not immediately follow that these concepts are also non-empirical.⁴⁰⁰ Many will of course respond by arguing that these examples are disanalogous, for whereas both color and red are directly perceived through the senses, space and time are not and indeed cannot be given by sensation, as we have already noted. But this response only makes the problem more difficult, for if neither of these entities can be sensed or directly perceived, then it is very difficult to see how Kant could be entitled to infer that the concepts of time and space are psychologically prior to the concepts of sensible appearances. In order to demonstrate that the concept of space is psychologically prior to the concept of things outside us and outside one another, Kant would have to show that the mind can only represent (or form a concept of) outer appearances outside itself and outside one another by first representing (or forming a concept of) space as an independently existing container. But if most of Kant's own contemporaries, including those who maintain that space is an independently existing container, and indeed even Kant himself, all deny that the mind has any *direct* perceptual acquaintance with this entity, then how could the concept of space be psychologically prior to the mind's representations of spatially related outer appearances? If it is agreed on all hands that space itself cannot be directly perceived, then it is surely false to maintain that the mind cannot represent objects in spatial relations without first representing them in space, for if we are never perceptually acquainted with space itself to begin with, the representation of space certainly cannot be presupposed for representing objects in spatial relations. And the problem is perhaps even clearer in the case of time, for no one thinks that time itself is ever sensed or directly perceived alongside the things which appear in temporal relations of succession and simultaneity. But if time itself is never directly perceived or sensed, how could this concept be psychologically prior to the concepts of succession and simultaneity?

Those commentators who claim that Kant is simply articulating a Newtonian view of time and space fail to explain how he could be entitled to make any of the claims he does about the psychological priority of these concepts, or why he denies that these concepts are originally acquired by abstraction. Indeed, the Newtonians endorse the exact *opposite* view. Since space itself cannot ever be directly perceived, the Newtonians inferred that the mind is only ever perceptually acquainted with the spatial relations of objects, and that, consequently, the mind can only begin to form a concept of space by

⁴⁰⁰ This objection is made by Walker, *Kant*, p. 29, who argues that the logical priority of time and space does not entail that these concepts were not originally acquired by abstraction from sensory experience.

Obviously we cannot think of objects as spatio-temporally located without having the ideas of space and time; but we may still have acquired these ideas by observing objects which now, after having performed the abstraction, we can think of as located spatio-temporally. In just the same way one cannot think of an object as red without having the idea of redness; but redness is Kant's paradigm of an empirical concept, acquired by abstraction from the observation of things which once we have the concept we can describe as instances of redness. So the argument fails even to show that space and time are a priori in the genetic sense.

first perceiving spatially related objects. For the Newtonians, space is not directly perceived through sensation as something given in addition to the perceived determinations of body, it is instead *conceived of* by abstracting from what is directly sensed; and, one *acquires* the concept of space by first becoming perceptually acquainted with, for example, the extension of some body through sight and touch, and then conceiving of that body's extension independently of all the other sensible determinations which belong to it, as well as forming the belief that this extension is something that exists independently of that body and which that body occupies. But if this is how the concept of space is originally acquired, then it is not psychologically prior to the concept of spatially related material bodies, for it is only insofar as the mind first perceives and forms a concept of spatially related material bodies that it can then proceed to form a concept of space through abstraction, namely, by conceiving of some region of space independently of the material bodies which occupy its various parts. But this of course is the exact *opposite* of what Kant asserts in §15.A when he says that the "*concept of space is not abstracted from outer sensations.*" Indeed, the Newtonian view is the very position which Kant is trying to *refute* in these passages.⁴⁰¹

Indeed, once direct perceptual acquaintance has been ruled out, it seems that the only remaining alternative is that the mind acquires a representation of space by means of some sort of higher order cognition. This, of course, is what appears to be suggested by the terminology Kant uses in §15.A, for he does not say the mind directly perceives space, but that it *conceives* of it, and those who endorse the logical priority interpretation suggest that the kind of cognition the mind has of space is a kind of conception. But this is unacceptable, for what it entails is that the mind originally acquires a concept of space by means of the understanding, specifically in its logical use: thus, one conceives of space itself by representing the order of situation that a multitude of coexistent outer appearances have to one another independently of those appearances, and this act of cognition is a function of the logical use of the understanding since it involves conceiving of space through abstraction. But although Kant certainly allows that the mind can conceive of an order of situation independently of any appearances,⁴⁰² he assuredly does

⁴⁰¹ The Newtonian account of how the mind forms a concept of space is for all intents and purposes *no different* from the Leibnizian, since both maintain that the mind acquires a concept of space by abstraction from the spatially related bodies originally perceived by sense; they only differ as to whether this concept refers to some entity which genuinely exists independently of the bodies which occupy it, or whether instead that the only things that genuinely exist are spatially related material bodies and that space itself is merely an imaginary notion that only exists in the mind. But if relationalists and substantialists alike can agree that the concept of space is originally acquired by abstraction from the sensory experience of spatially related bodies, then the ontological status of space does not imply anything about its psychological priority. Those commentators who maintain that Kant is simply following the Newtonians in asserting that the concept of space refers to some independently existing container which is distinct from its occupants owe us some explanation as to why Kant did not likewise infer that the concept of space is originally acquired by abstraction from the sensory experience of spatially related external objects: even if we grant that the concept of space refers to some entity which is ontologically distinct from outer appearances, it does not follow that the mind's concept of the former is also psychologically prior to its concepts of the latter. Cf. Euler, "Reflections on Space and Time", XIV-XV

⁴⁰² In regards to the question of how the mind comes to represent time and space in the abstract, Kant appears to be in *agreement* with the Leibnizians: a pure intuition (or "intuition devoid of sensation" [Ak

not believe that the concept of space is *originally acquired* by means of the understanding in its logical use. Kant consistently denies that the concept of space is originally obtained by means of the intellect, in either its real or logical use, and he explicitly denies that the concept of space is originally acquired *by abstraction* from outer sensation. Indeed, if the kind of cognition which the mind has of space is the sort provided by the logical use of the understanding, then by his own lights the concept of space *cannot be psychologically prior* to the concepts of outer appearances. Recall from Ch. 2 that the function of the logical use of the intellect consists in separating out some content which is contained in another as a part to a whole, and that what this presupposes is that the mind always begin with some *previously given cognition* which it then proceeds to analyze into its component parts: in other words, the mind can only begin to form some concept through the logical use of the understanding if some other representation is first *given*.⁴⁰³ Now, the mind conceives of space itself in the abstract by conceiving of the order of situation that a multitude of bodies have to one another independently of those bodies, and in that case, the representation of a multitude of coexistent bodies *together* with their order of situation must be given as a whole *before* the mind can conceive of the latter independently of the former by abstraction. Indeed, in order to form this concept the mind would *first* have to have a representation of a multitude of coexistent bodies standing in a variety of concrete spatial relations in space, and would only subsequently acquire the concept of space by then conceiving of that order of situation independently of those bodies. But then the concept of space is not psychologically prior to the concept of outer appearances, it is posterior since it is acquired by abstraction from the representation of spatially related outer appearances. But this is certainly not how Kant thinks the mind originally acquires a concept of space, for this is identical to the Leibnizian view, and is therefore the very position which Kant is trying to *refute*. Kant cannot possibly think that the mind must first conceive of space in the abstract before it can form a concept of the spatially related bodies represented therein, for by his own lights the mind only comes to form an abstract concept of space by first representing spatially related outer appearances and then conceiving of their order of situation independently of those appearances. Having an abstract concept of space cannot, then, be presupposed for representing bodies in spatial relations distance—indeed, the very opposite appears to be true.⁴⁰⁴

2:397]) is given when the mind represents a region of time and space in abstraction of the sensible content contained therein. Kant allows that the mind can represent time and space themselves through the logical use of the intellect, viz., by abstracting the sensible content of a body from its spatiotemporal form. What he denies, however, is that this is how the mind originally *acquires* that concept.

⁴⁰³ For Kant, abstraction always involves representing some of the parts (or marks) of a given whole in isolation of the others, and what this presupposes is that some representation has first been given before the mind can conceive of some of its marks independently of the others that belong to it.

⁴⁰⁴ H.A. Prichard, *Kant's Theory of Knowledge*, pp. 37-70 appears to be articulating something like this line of objection. The argument which commentators give to show that the psychological priority of space follows from its logical priority is far too simplistic. In general, the argument is that if one cannot conceive of outer appearances without also conceiving of space, then the concept of space must be contained in the concept of outer appearances; and, since one must therefore have a concept of space in order to have a concept of outer appearances, it follows that one cannot derive the latter from the former. But the real

Alternatively, those commentators who maintain that the mind is perceptually acquainted with space face difficulties which are just as great. If the mind is perceptually acquainted with space itself, then the sense in which the representation of space is contained in the mind's representation of outer appearances is just that we always perceive space when perceiving outer appearances as one thing alongside another. While some commentators appear to endorse this, the problem is that this claim makes it very difficult to understand why the concept of space is non-empirical. What these commentators appear to imagine is that the mind directly perceives space itself by just *seeing* it alongside outer appearances; but if so, then it also seems to follow that the mind acquires this concept directly from sensory experience, namely, by focusing its attention on space, which it just sees or directly perceives, while ignoring in thought the outer appearances which are perceived alongside it.⁴⁰⁵ Obviously this is an unacceptable result

question that needs to be answered here is: if space is not directly perceived, or sensed, then in what sense is the representation of space *contained* in the mind's representation of an outer appearance? And does that sense of containment entail psychological priority? In my view, those who defend the logical priority interpretation do not provide an answer to the first question which allows one to also give an affirmative answer to the second. For examples, see Walsh, *Kant's Criticism of Metaphysics*, pp. 17, Paton, *Kant's Metaphysic of Experience*, Vol. I, pp. 110-111 and Caird, *The Critical Philosophy of Kant*, p. 287. For reasons of space, I will spare the reader my detailed comments on each of the passages just cited.

⁴⁰⁵ One commentator who appears to claim that space and time are directly perceived is T.D. Weldon, *Kant's Critique of Pure Reason* (Oxford: Oxford University Press, 1958) p. 116:

When we consider space, we find that it is both a priori and sensuous in character. It is a priori, as opposed to empirical, since it is necessarily presupposed by and inseparable from all immediate awareness of particular appearances of things outside us. For I cannot perceive things as outside myself or one another except in so far as I perceive them as related in a single all-embracing space, and it is impossible for me to abstract them from space and consider them as non-spatial in the same way as I can abstract space from them and consider it in itself.

But if space is "sensuous in character" and always directly perceived (and sensed) alongside outer appearances, then why isn't this concept empirical? Indeed, Weldon seems to acknowledge that we form a concept of space by directly perceiving it and then abstracting sensible appearances from it. But then it does not seem to be an a priori representation any more than the concept of color. Cf. Fischer, *Geschichte der neuern Philosophie, Vol. 3: Kant's Vernunftkritik und deren Entstehung*, pp. 317-318, though Fischer also runs together the other notions of priority that one finds in Paton and Walsh. Other commentators suggest that space is directly perceived since it is contained in the representation of outer appearances as one of their determinations. Caird, *The Critical Philosophy of Immanuel Kant*, Vol. I, pp. 286-287 writes that

...all determination of particular objects as occupying a particular place and standing in a relation of externality to other objects, presupposes space as that in which we place them. The idea of space, therefore, cannot be got from objects as they are given in sense, for these could not be determined as they are except on the presupposition of space. External objects, in short, are primarily determinations of space, and space, therefore, cannot be taken as a mere determination of *them*.

What Caird appears to be suggesting is that sensible appearances are determinations of space in the sense that the extension of a body is a determination of extension in general—a claim which reminds one of the Cartesian view which identifies extended material substance with space. Of course, if this is the sense in which space is contained in bodies, then it does appear to follow that one cannot represent (or conceive) of those bodies without representing (or conceiving of) space, since every determinable is contained in its determinates. But this whole approach is misguided. Sensible appearances are *not* related to space as determinates to a determinable: sensible appearances are not determinations *of* space, they are entities which exist *in* space. And while it is certainly true that one cannot perceive a body without also perceiving its extension, this is not the same thing as perceiving space itself. What the mind represents when it perceives a body's extension is a determination which belongs to that body, rather than some unoccupied volume which belongs to space itself as one of its parts; and while the mind certainly perceives extension when it represents a body, it doesn't follow that the mind must also conceive of that extension as some

since Kant denies that the concept of space is acquired from outer sensation, either directly or through abstraction. But it is hard to see why Kant is entitled to deny that space is an empirical concept if he allowed that it is directly perceived in this way. Moreover, even if allow that space itself is directly perceived as one entity coexisting alongside the sensible appearances which occupy its various regions, it still would not follow that the mind's representation of space is *psychologically prior* to the representations it has of sensible appearances *in* space. Kant would still have to show that the mind perceives space itself as an independently existing container *before* it can perceive the outer appearances which occupy the various locations in space, or that perceiving the former is somehow a *condition* for having perceptions of the latter. But, *prima facie*, it seems false to say that the mind cannot perceive A next to B unless it first perceives the spaces occupied by A and B apart from A and B themselves.⁴⁰⁶ On phenomenological grounds, what appears to be revealed through introspection is that, at best, outer appearances and space itself are given simultaneously, rather than one before the other. At the very least, no convincing reason has been given to think that our ability to perceive the spatial relations of objects presupposes that we first represent some entity which is distinct from material bodies and their relations.

The basic problem, then, with the logical priority interpretation is that it fails to explain why the concepts of time and space are psychologically prior in the order of acquisition to the concepts the mind forms of spatiotemporally related sensible appearances. Even if Kant has shown that the concepts of time and space are logically prior, defenders of the logical priority interpretation must still provide some explanation as to why these concepts are also non-empirical, and how Kant manages to refute the alternative Leibnizian view that they are acquired by abstraction from the sensations given by affection. But the logical priority interpretation fails to adequately address any of these issues. And it certainly falls short of any explanation of Kant's positive thesis that

independently existing entity which that body occupies. Since the space occupied by a body is something which is numerically distinct from its extension, when the mind perceives a body it doesn't follow that it also perceives the region of space which that body occupies, or that it conceives of that body's extension as something which coincides with the extension of a region of space which is ontologically distinct from that body. And it is equally implausible, on phenomenological grounds, to suggest that both the extension of space and the extension of body are perceived together as two separate entities, and that one is perceived to be contained in the other. Instead, what appears to be revealed through introspection is that we do not directly perceive the parts of space at all, but instead conceive of a body's location by abstracting the qualities of body so as to *conceive* of some region of space which coincides with that body's extension. But this, once again, is the very opposite of what Kant appears to be asserting.

⁴⁰⁶ According to H.A. Prichard, *Kant's Theory of Knowledge* (Oxford: Clarendon Press, 1909), p. 37-42, Kant thinks of space as an empty vessel in which sensations are arranged, and that the mind must perceive empty space before perceiving outer appearances: "Kant is thinking that in order to apprehend, for example, that A is to the right of B we must first apprehend empty space. He concludes that our apprehension of space is *a priori*, because we apprehend empty space *before* we become aware of the spatial relations of individual objects in it" (p. 42). Having attributed this extremely implausible view to Kant (unjustly, in my opinion), Prichard then correctly argues that "We do not apprehend empty space before we apprehend individual spatial relations of individual bodies or, indeed, at any time" and that "Though we come to apprehend *a priori* the nature of space in general, the apprehension is not prior but posterior in time to the apprehension of individual spatial relations" (*ibid.*).

the mind originally acquires these concepts by coordinating the sensations given by affection, though this too appears to be part of what Kant is also trying to establish in these passages. Insofar as the logical priority interpretation fails to explain the main conclusions which Kant is trying to establish with these arguments, it should be rejected.⁴⁰⁷

Another major approach, championed by Henry Allison, maintains that Kant's argument is best understood in terms of *epistemic* priority.⁴⁰⁸ The notion of an 'epistemic condition' is central to Allison's interpretation of the first two arguments of the metaphysical exposition and, indeed, to his general interpretation of Kant's transcendental idealism. An epistemic condition is defined as "a necessary condition for the representation of objects, that is, a condition without which our representations would not relate to objects or, equivalently, possess objective reality."⁴⁰⁹ An epistemic condition is thus a representation that makes our cognition of objects possible since these objects can only be cognized through these representations: in particular, time and space are epistemic conditions of sensible representations, while the categories provide the epistemic conditions for the representations produced through the faculty of the intellect.

On Allison's interpretation, the goal of these arguments is to show that space and time are both epistemic conditions, representations the mind must be in possession of, if knowledge of the external world is to be possible. All knowledge begins with experience, and experience requires that we be able to represent numerically distinct objects existing outside us. The representations of space and time are the necessary conditions that make these experiences possible: they are the conditions required for both outer awareness, or the mind's ability to become aware of objects distinct from the self and its own inner states, as well as object recognition, which requires an ability to distinguish objects that are not

⁴⁰⁷ One commentator who endorses the logical priority interpretation, while acknowledging that Kant's arguments fail to establish this is Thorndike, "Kant's Philosophy of Time in the *Transcendental Aesthetic*", pp. 272-294. Thorndike's central thesis is that Kant is attempting to defend an essentially Newtonian view that space and time exist as substantival entities which are ontologically prior to sensible appearances; Thorndike acknowledges, however, that Kant's arguments are vulnerable to Maaß's objection, which he thinks constitutes a decisive refutation of Kant's position concerning the psychological origin of these concepts. In the preceding discussion we have noted that many proponents of this interpretation seem to be willing to allow that Kant fails to establish the non-empirical origin of time and space. But given that this is *clearly* the main conclusion which Kant is trying to establish, I cannot understand what entitles these commentators to concede this with such equanimity.

⁴⁰⁸ Henry Allison, *Kant's Transcendental Idealism: An Interpretation and Defense* (New Haven and London: Yale University Press, 2004), pp. 100-104; cf. Paul Guyer, *Kant and the Claims of Knowledge*, pp. 346-347; Georges Dicker, *Kant's Theory of Knowledge: An Analytical Introduction*, (Oxford University Press, 2004), pp. 37-40; D.P. Dryer, *Kant's Solution for Verification in Metaphysics* (London: Allen & Unwin, 1966), pp. 228-232; Jill Vance Buroker, *Space and Incongruence: The Origin of Kant's Idealism* (Dordrecht: D. Reidel, 1981), p. 76; Robert Pippin, *Kant's Theory of Form* (New Haven: Yale University Press, 1982), pp. 60-62; T.E. Wilkerson, *Kant's Critique of Pure Reason* (London: Oxford University Press, 1976), p. 24.

⁴⁰⁹ Allison, *Kant's Transcendental Idealism* (2nd ed.), p. 11 distinguishes epistemic conditions from those that are merely logical, psychological, and ontological (the latter of which he defines as "conditions of the possibility of the being of things...as they are in themselves (in the transcendental sense)."

only qualitatively, but also *numerically* distinct from one another.⁴¹⁰ The representation of space is a necessary condition for all outer awareness since objects can only be represented as numerically distinct if they are represented in different locations in space, and it is only insofar as I refer my sensations to objects outside me—that is, to objects in locations distinct from my own—that I am able to distinguish them from my own inner states. And the representation of time is what enables the mind to distinguish between *different* inner states, for it is only insofar as the objects of inner sense are located at different points of time that the mind can identify them as both qualitatively and numerically distinct from one another. The representations of time and space are thus necessary as epistemic conditions required for outer awareness and object recognition. Since the ability to distinguish objects from ourselves and one another is a precondition of experience and our knowledge of the external world, space and time are therefore necessary epistemic conditions for all experience. And since these representations condition the very possibility of both inner and outer awareness, they cannot, Allison claims, be empirical concepts derived from experience.⁴¹¹

⁴¹⁰ Allison bases this interpretation on the versions of the arguments which appear in the CPR, specifically the first argument in the metaphysical exposition of space, where Kant writes that “outside [*ausser*] and next to one another, as not only different [*bloss verschieden*], but as in different places.” Allison says “*bloss verschieden*” suggests qualitative difference, and thus implies a contrast with numerical difference. Allison, *Kant’s Transcendental Idealism* (1st ed.), pp. 83-84. A similar interpretation is proposed by Paul Guyer, *Kant and the Claims of Knowledge*, pp. 346-347. As Allison notes, Paton, *Kant’s Metaphysics of Experience*, Vol. I, pp. 110-112, appears to suggest some of the elements of this interpretation.

⁴¹¹ As we saw above, many claim that Kant’s first argument in the metaphysical exposition depends upon the second argument for its completion. Unfortunately, Allison’s position on the relation between the first two arguments of the metaphysical exposition is unclear. Initially, after noting the various interpretive possibilities, he writes that the arguments “constitute two independent proofs, operating with the same conception of apriority” (Allison, *Kant’s Transcendental Idealism*, p. 100). This remark would appear to indicate that the first argument is alone sufficient to establish the a-priority of time and space (since it is an *independent proof*). And Allison attempts to support this by claiming that the representations of time and space serve a unique epistemic function insofar as they allow for the possibility of our other sensory representations, and that this function is not reciprocal. Subsequently, however, things become less clear. As Thorndike notes, Allison also claims that in order to show the a-priority of time and space “it is necessary to show *both* that we cannot remove space and time from the thought of appearances *and* that we can remove appearances from the thoughts of space and time” (Ibid, p. 106; cited in Oliver Thorndike, p. 283n81); but the fact that we can represent time and space independently of appearances is something that is only shown by the second argument of the metaphysical exposition and ignored by the first, so that if the independence of these representations is a requirement for the proof of their a-priority, then the first argument is dependent upon the second and is not really an independent proof at all. Admittedly Allison does qualify his initial remark that the two arguments are independent by noting that the second argument, “though not making a significantly stronger claim, calls attention to a crucial feature of the representation of space that is ignored by the first” (Ibid). Allison later identifies this feature as the “fact that [space and time] have a content of their own, which remains when abstraction is made from everything empirical” and this point is what “underscores their *a priori* status” (Ibid, p. 108). But these remarks do nothing to explain away the difficulty, for it is unclear how “crucial” this feature is and in what way it “underscores” the a priori status of time and space. The real question that needs to be answered is whether our ability to represent space and time independently of appearances is a requirement of their priority or not (nor is it helped by Allison’s remark that both arguments “amount...to much the same thing” (ibid, p. 108)). Whether or not the first argument is sufficient to establish the a-priority of these representations, as well as its connection with the second argument of the metaphysical exposition, is thus totally unclear on Allison’s reconstruction.

It seems to me that this interpretation fares no better than the first. The first problem is that Allison fails in his attempt to explain why the concepts of time and space cannot be acquired from experience. According to Allison, an epistemic condition cannot be obtained from experience since every experience presupposes that representation as a necessary condition, and any attempt to acquire that representation from experience will thus be circular.⁴¹² But this assumes that if a representation is *necessary* for experience, then it cannot also *ipso facto* be *obtained* from experience. But there is simply no reason to think that this is true. The claim that a representation is required for experience concerns the *modal* status of that representation: it is necessarily present in any experience I have. The claim that a representation is acquired from experience concerns the *origin* of that representation, of how that representation comes to be present in the mind: whether it is given through sensory experience or is obtained from some other source. It may be true that time and space are (necessarily) present in every experience we have, but that doesn't tell us anything about how the mind originally came to acquire the representations of those entities, for a representation necessary for experience may also be obtained from experience. There is no inconsistency involved in maintaining, for example, that the mind always represents time but also that the representation of time originates through the succession of ideas, as Leibniz and Locke claim: the fact that the representation of time is present in every experience I have does not rule out the possibility that I come to acquire that representation through the succession of ideas.⁴¹³

For discussion of this point and Allison's interpretation in general, see Oliver Thorndike, "Kant's Philosophy of Time in the *Transcendental Aesthetic*", pp. 253-316.

⁴¹² As Allison, *ibid* p. 84 puts it, "The main point is simply that the features of experience to which one appeals in the endeavor to account for the origin of this idea already presuppose it." This explanation appears to be as superficial as the ones provided by those who defend the logical priority interpretation.

⁴¹³ Numerous commentators claim that the concepts of time and space must be non-empirical since they are necessary and fundamental in some sense. But this seems to be irrelevant. The fact that time and space are ubiquitous in experience does nothing to show that our concepts of these entities were not originally acquired by abstraction from sensory experience. As Garnett, *The Kantian Philosophy of Space*, p. 165 puts it: "A silent assumption underlies this entire body of argument: a nonempirical representation is a necessary representation, and a necessary representation is nonempirical. Unlike the intuitive nature of space, which depends upon a different argument, its "pure," necessary nature is assumed to be the outcome of its nonempirical character...[But] the latter may be held without the former". Cf. Weldon, *Kant's Critique of Pure Reason* (1st ed, 1945) p. 85n2. The claim that space and time must be non-empirical if they are necessary and fundamental is based on a certain historically popular reading which interprets the distinction between matter and form as a distinction drawn with respect to the modal status of the features of appearances. On this reading, space and time are nothing more than universal and necessary conditions of any possible experience, so that the form of an appearance only corresponds to those features which belong to it necessarily—or to those features which any sensible appearance *must* have if it is to be capable of appearing before the mind. This interpretation has its roots in the 19th century, in particular in the anti-psychologistic reading defended by Cohen in his *Kants Theorie der Erfahrung*, and later elaborated upon by Paton in *Kant's Metaphysics of Experience*, though it continues to have many adherents today. But the results we obtained in Ch. 1 demonstrate that this way of explaining the matter-form distinction is not complete. While Kant does indeed maintain that the representations of time and space are universal and necessary conditions presupposed by experience, any interpretation that restricts itself to these features alone fails to capture everything that Kant maintains about these representations, at least in ID. As we have already seen, Kant explicitly maintains that the representations of time and space are products of a cognitive activity which coordinates the sensations given by affection. The forms of intuition are not to be distinguished from the matter given in sensation solely through necessity and universality, but also by the

On this question, Allison's interpretation thus does no better than the logical priority interpretation—indeed, it seems to commit many of the very same mistakes.

This problem is connected to the issue raised by Maaß, namely, that there appears to be a reciprocal dependence between the representations of time and space, on the one hand, and representations of things existing in spatiotemporal relations on the other. Thus, while it may be true that we cannot begin to represent numerically distinct objects existing outside us without representations of time and space, why are these latter representations not equally dependent upon our having experiences of numerically distinct objects? Why are the representations of time and space epistemically *basic*, and not equally dependent on inner and outer sensations? According to Allison, the reason this objection fails is because it presupposes that space and time are relational; in other words, if the representations of time and space are dependent upon our having experiences of numerically distinct objects, then space and time are nothing more than the relative order in which objects appear. Since this is just the Leibnizian view, Allison concludes that the objection fails since the assumption that space and time are relational begs the question against Kant.⁴¹⁴ But this response is misguided. To begin, it is unclear why the same response is not available to the advocate of the logical priority interpretation and, if so, how Allison's interpretation is supposed to be an advance over that interpretation. More serious, however, is the problem that Allison's response appears to confuse the same issues that were first noted in our initial assessment of Kant's argument. Allison claims that this argument refutes *both* the relational theory of space and time defended by Leibniz,⁴¹⁵ as well as the standard empiricist account of how the mind comes to acquire concepts of time and space.⁴¹⁶ According to Allison, then, the

fact that they are products of “a certain law, which is inherent in the mind and by means of which it coordinates for itself that which is sensed from the presence of the object” [Ak 2:393]. While there are certainly passages where only the universality and necessity of spatiotemporal form is asserted—as, for example, in [Ak 2:396-97, 398, & 404]—these passages are compatible with the reading I am proposing: the representations of space and time are universal and necessary conditions of all possible experience *and in addition* they are produced by the mind through innate acts of coordination which coordinate the sensations given by affection. The relevant sense in which these concepts are non-empirical is just that they are not given directly by sensation or indirectly by abstraction from what is sensed. The other ways in which they might be “non-empirical” are not ultimately relevant to the arguments in §14.1 and §15.A.

⁴¹⁴ Allison, *Kant's Transcendental Idealism*, p. 103. Allison discusses two versions of this objection, though his response is only directly addressed to the version originally raised by Maaß. Nevertheless, it is clear that Allison intends the response to be sufficient to answer the general concern.

⁴¹⁵ “Although the focus of this argument is anti-empiricistic, it also applies to the relational theory of Leibniz, particularly as it is articulated in the correspondence with Clarke”, Allison, *Kant's Transcendental Idealism* (2nd ed.), pp. 102-103; “The argument for the a priority of the representation of space is thus at the same time an argument against any purely relational theory of the nature of space. The parallel argument concerning time functions in precisely the same way. In both cases the key lies in the epistemic function claimed for the representation”, Allison, *Kant's Transcendental Idealism* (1st ed.), p. 85. Thorndike, “Kant's Philosophy of Time in the *Transcendental Aesthetic*”, pp. 283-300 notes that Allison seems to believe that Kant's arguments rest on certain Newtonian assumptions.

⁴¹⁶ “...the attempt to account for the origin of our representations of space and time [empirically] may be dismissed as inherently question begging. In endeavoring to describe the experience through which the mind acquires these representations, the empiricist tacitly assumes that the mind already has them”, Allison, *Kant's Transcendental Idealism* (2nd ed.), p. 101. Similarly, in the first edition, Allison writes that “although this argument was undoubtedly developed by Kant with Leibniz in mind, it is equally applicable

argument has both an ontological and a psychological conclusion. But this conflates two distinct issues, the psychological question of how the mind obtains the concepts of time and space, and the ontological question of what these concepts refer to. Either, then, Allison is guilty of making the very same mistake, or, if there is no mistake, he does nothing to explain why the apparent conflation of these distinct issues is not a real error after all. According to Allison, *if* our ability to have a representation of time depends upon our first having representations of succession and simultaneity, then relationalism is true. But this claim would even be denied by most substantialists. Newton himself acknowledges that time itself cannot be directly perceived both because it has no sensible qualities of its own (we do not see, touch or smell time) and because it is causally inert, which means that it cannot interact with our sense organs to produce a sensation. For this very reason, it was commonly acknowledged by substantialists and relationalists alike that an idea of time can only be acquired by first perceiving sensible objects instantiating various temporal properties. A helpful illustration of this may be found in Locke, a substantialist himself, who traces the origin of our idea of time to the experience of sensations succeeding one another, an experience which enables the mind to first form ideas of succession and simultaneity, and then an idea of time itself.⁴¹⁷ This position is not in conflict with substantialism, for once the mind obtains an idea of time it is a further question whether time is nothing more than an order of succession, as Leibniz maintained, or whether it is an entity distinct from any particular succession but in which all those successions occur, as Newton and Locke believed. It is simply false that time must be a system of relations if our ability to obtain an idea of time depends upon our first having experiences of sensations succeeding one another. And in that case, Allison's interpretation does not provide an answer to Maaß's objection.⁴¹⁸

to the standard empiricistic analyses of the origin of the idea of space or extension, for example, Locke's. The main point is simply that the features of experience to which one appeals in the endeavor to account for the origin of this idea already presuppose it. The same holds, *mutatis mutandis*, for time", Allison, *Kant's Transcendental Idealism* (1st ed.), p. 84.

⁴¹⁷ Locke, *Essay* II.xiv.3. It is only after explaining how the mind forms an idea of time that Locke proceeds to argue that our idea of time or refers to an independently existing container which provides an absolute measure for motion. While one might disagree with the claim that time is substantial, clearly Locke is not contradicting himself simply because he thinks that we originally form an idea of time through experiences of succession and simultaneity. It is also worth noting that there is nothing question begging about Maaß's objection, even if we grant Allison's claim that it requires the assumption that relationalism is true. This assumption would only be question begging if the conclusion of Kant's argument is (or immediately implies) that relationalism is false. Maaß would then be begging the question if his objection to the conclusion of Kant's argument presupposes that relationalism is true. But this is hard to accept since the intended conclusion is that "*The idea of time does not arise from but is presupposed by the senses*", and it is hard to see how any argument with that conclusion could also have substantialism as a corollary. Of course, as we noted at the outset, Kant does appear to be conflating these two issues, and does appear to infer that relationalism is false with this argument; but the point is that Allison's interpretation does nothing to absolve him of this error. On the other hand, if Kant's argument is not itself a refutation of relationalism, but instead assumes substantialism as a premise, then Maaß is not begging the question because he rejects one of the premises of Kant's argument. Here the burden of proof is with Kant, not Maaß.

⁴¹⁸ In the second edition of *Kant's Transcendental Idealism*, p. 467n16 Allison adopts an alternative response to Maaß's objection and notes that it is one suggested by Daniel Warren in "Kant and the Apriority of Space", *The Philosophical Review* (107), pp. 179-224. On Warren's interpretation, the basic thrust of

One final problem with this reading, noted by both Falkenstein and Warren, is that Allison's interpretation is not supported by the text. Indeed, it even appears to conflict with it. When Kant says that space is required in order for our sensations to be related to something "outside me", he explains parenthetically that "outside me" should be understood to mean "something in another place in space from that in which I find myself" (A23/B38); and, even more explicitly, the representation of space is required to represent objects "outside one another, thus *not merely as different* but as in *different places*" (ibid, my emphasis). What is suggested here is that "outside of" does not mean "distinct from" but rather "in a different location"; and this is especially clear in the second passage where Kant emphasizes that space is required in order to represent objects in different spatial locations, rather than for distinguishing objects from one another. This is even clearer in the version of the argument from ID, where Kant writes that "I may only conceive of something as *placed* outside me by representing it as in a *place* which is different from the *place* in which I am myself; and I may only conceive of things outside of one another by *locating* them in *different places in space*." [Ak 2:402]). What these remarks clearly indicate is that "outside of" is not to be understood as "numerically distinct from," but rather "located in a different part of space." The same is true in the argument for time, where Kant tells us that the representation of time is required to locate sensations at different moments or locations in time, not that time is required to distinguish or individuate different mental states from one another. Kant's argument, then, is not that space and time are required for representing things as numerically distinct from one another; his argument is that representing things in spatiotemporal relations presupposes that we first represent them in different spatiotemporal locations. Kant's concern is not with individuation, but rather with spatiotemporal localization.⁴¹⁹

This reading of the argument brings us to our next major interpretation, advanced by both Lorne Falkenstein and Daniel Warren.⁴²⁰ Since this interpretation was first developed by Falkenstein, and his own version is, by far, the more sophisticated of the two, I will focus on his account. On this interpretation, Kant's arguments are supposed to show that our ability to perceive spatiotemporal relations can only be explained on the supposition that our sensations are originally given in a spatiotemporal order. Space and time are, in this respect, unique: it is rarely the case that the ability to determine the relevant relations that obtain between a set of objects presupposes that those objects are

Kant's argument is that our ability to perceive spatiotemporal relations can only be explained on the supposition that our sensations are originally given in a spatiotemporal order. But Warren's response to Maaß's objection depends on his own reading of the first argument of the exposition, an interpretation which is *completely different* from the one proposed by Allison (see below). Whereas Warren interprets the argument as being crucially concerned with spatiotemporal localization, on Allison's reading Kant's argument is fundamentally concerned with object recognition and individuation. Though Allison claims to be "revising my analysis in the light of [Warren's & Falkenstein's] readings, which are largely correctives to my initial treatment of the argument" (p. 467n18), to *revise* is not the same as to *abandon*.

⁴¹⁹ See Falkenstein, *Kant's Intuitionism*, pp. 163-165 and Daniel Warren, "Kant and the Apriority of Space", pp. 184-187.

⁴²⁰ Specifically Lorne Falkenstein, *Kant's Intuitionism*, pp. 160-183 and (for a variation of this view) Daniel Warren, "Kant and the Apriority of Space," pp. 179-224.

first presented in an ordered array. Rather, what is usually required is merely an inspection of the intrinsic qualities which the objects themselves have and how those qualities stand in comparison to the qualities of other objects. To illustrate, suppose that we wish to determine the positions of a set of colors on a color map. Intuitively, the various locations of the colors are determined by comparing and contrasting their intrinsic properties: the reason why scarlet and crimson are closely positioned to one another on the color map is explained by the similarities of their shades, hues and tones; and in order to determine that scarlet and red are more similar to one another than either is to green, we do not have to be presented with a completed color map in which each of the colors are dispersed alongside one another. According to Falkenstein, Kant's basic claim in the first exposition is that the ability to represent and determine the locations of objects in space and time is not analogous to the process by which we determine the locations of colors in a color space. With respect to a color map, we first experience the individual colors and then determine their relative positions to one another by comparing and contrasting their intrinsic properties; in turn, the color map is produced by arranging the colors in terms of these relations. With respect to our representations of space and time, however, we do not *first* perceive the intrinsic properties of various objects and then, after comparing the ways in which these properties resemble one another, produce an order in terms of these relations. The intrinsic properties of our sensations cannot provide us with any indication as to where they are positioned in space and time since one and the same sensation can appear in any number of positions: since the same color patch can occur anywhere in the visual field, a change in place cannot be a change in any feature or intrinsic characteristic of that sensation. But, precisely for that reason, the representation of a spatiotemporal order is not produced by an act of comparison performed on the qualitative properties of our sensations, since the qualities of our sensations remain invariant regardless as to where they appear in time and space. Whereas colors are arranged on a color map according to how similar their intrinsic properties are, no qualitative comparison between objects can provide us with any indication as to why they are located in one part of space or time rather than another. Since the spatiotemporal order of our sensations cannot be obtained by inspecting their intrinsic qualities, Kant is supposed to have inferred that the spatial locations of objects must be given in sensory intuition to serve as a ground for the determination of their spatial relations. Thus, before we can perceive and determine any spatiotemporal relations, an array of elements in space and time must first be given in sensory experience; in order to determine the spatiotemporal relations of objects, we must first be presented with an array of elements in a spatiotemporal *order*.

Naturally, the suggestion that our sensations are originally received in a spatiotemporal order would appear to imply that our concepts of time and space are originally given in experience and are thus empirical concepts, contrary to Kant's insistence that space and time are *pure* intuitions in which "there is nothing that belongs to sensations" [A20/B34]. But Falkenstein claims that this objection rests on the erroneous assumption that everything given in sensory experience must be a sensation;

but the fact that both the matter and form of appearance have a common origin in sensory experience does not undermine the fact that they are distinct, for we can still distinguish between those features that pertain to the sensations themselves as opposed to the order in which those sensations appear. When Kant claims that the pure form of intuition is “that in which alone the sensations can be posited and ordered in a certain form” [A20/B34], all this means is that the elements given in sensory experience must always be presented in a certain order and that the order of these sensations is not *itself* a sensation. As the intrinsic qualities of a sensation remain the same regardless as to where they appear in space and time, the order of their presentation is not a quality of our sensations and is in that respect non-empirical. The representations of time and space are thus non-empirical precisely because the order in which our sensations appear is not *itself* a sensation.⁴²¹

But for all its virtues, this interpretation also appears to be inadequate. Whatever the merits this reading has for the *Critique*, it cannot be the correct interpretation for the arguments Kant is defending in ID. On Falkenstein’s reading, although the spatiotemporal order is not *itself* a sensation, it is nevertheless *given* in sensory experience, and the forms of intuition *just are* the orders in which these intuited matters are received. But Kant is explicit that objects “do not strike the senses in virtue of their form”, which rules out the possibility that spatiotemporal form is a presentational order given by sensory experience: if the form of an intuition corresponds to the order in which our sensations appear, and that order is immediately given along with the sensations, then objects should “strike the senses in virtue of their form”, though Kant says they do not.⁴²² Moreover, this view is not compatible with the already noted textual evidence of *active* imposition: if our sensations were originally received with an inherent spatiotemporal ordering, there would be no need for the mind to actively arrange them in a spatiotemporal order itself through coordination. But Kant repeatedly insists that spatiotemporal form can only arise through the *activity* of the subject, through an act of imposition carried out by the mind which orders the sensations it receives through affection into a spatiotemporal array. The spatiotemporal order of our sensations must be

⁴²¹ Falkenstein, *Kant’s Intuitionism*, 3-13, 88-89, 160-183.

⁴²² As Falkenstein has noted in private correspondence, there is a sense in which his interpretation can accommodate Kant’s claim that objects “do not strike the senses in virtue of their form”. On his interpretation, the order in which sensations are received is not determined *solely* by affection, but also in part by the nature of our receptive faculties, which possess a certain innate structure that determines how we come to be affected. While the “specific locations of sensations in space and time are empirically given” the “general structural features of space and time (e.g., their topology, affine structure, or metric)” are “determined by the way we are constituted so as to be able to receive information” (*Kant’s Intuitionism*, p. 5; Cf. *ibid.*, pp. 3-13). Insofar as these structural features are grounded in the innate constitution of the subject, rather than the affecting objects, there is a sense in which “objects do not strike the senses in virtue of their form”, even if the locations in which sensations are received is determined empirically through affection. Nevertheless, in the *Dissertation*, the sense in which the representing subject determines something about the order in which sensations appear is far stronger than this. It is not just that the constitution of our receptive faculties determines *how* we are capable of being affected—specifically, by imposing certain structural constraints on the stimuli we receive—for Kant seems to think that the locations in which sensations are represented are themselves determined, in some way or other, by the coordinating activity of the mind, and thus not through affection *alone*.

constructed, rather than passively received. But if that is correct, Falkenstein's reconstruction of the arguments in §14.1 and §15.A must also be inadequate, even if this is not true for the versions of these arguments which appear in the *Critique*. For if Kant did not maintain that the forms are orders of intuited matter in ID, then the arguments in §14.1 and §15.A cannot be interpreted in the aforementioned way, since they are supposed to be the *very* arguments Kant gave in support of that view.⁴²³

§4.3: *The Non-Empirical Origin of the Concept of Space*

In the previous section we argued that all the major existing interpretations of Kant's arguments in §14.1 and §15.A are inadequate, and that the main problem with most of them is that they fail to provide any plausible explanation as to why Kant thought the concepts of time and space could not be empirical concepts acquired by abstraction from sense. Of course, as we noted in our opening remarks, one of the main problems with these arguments is that Kant appears to be simultaneously using (at least) two distinct notions of priority: there is, on the one hand, the claim that the concepts of time and space are psychologically prior to the concepts of spatiotemporally related sensible appearances, and, on the other hand, there is also a claim that these concepts are prior in the order of definition (or logically and ontologically prior) as well. In the remainder of this chapter, I intend to focus on that aspect of Kant's arguments which deals with the psychological origin of these concepts, and to put aside the further question of how these concepts should or should not be defined until the next chapter. As we noted at the outset, our main goal in this chapter is to investigate the arguments Kant gave in support of his claim that the representations of time and space are not given by sensation but are instead generated when the sensations given through affection are arranged in spatiotemporal locations by virtue of an innate coordinating activity of the mind. And we also claimed that the arguments in §14.1 and §15.A are closely connected to this thesis. Having cleared the ground for our own interpretation, it is now time to defend these claims. In this section, we will leave aside the concept of time and instead focus our attention solely on the argument in §15.A which deals with the concept of space. We will return to the corresponding argument for the concept of time in the next section.

In §4.1 we noted that Kant's argument in §15.A is intended to be a refutation of the *Leibnizian* account as to how the mind forms a concept of space and, to begin, it will be useful to recall our discussion of the Leibnizian view from Ch. 3. According to Leibniz the concept of space is constructed by the mind in three separate stages. In the first stage, the mind acquires the ideas of various kinds of spatial relations through the sensations given by sight and touch, which cause the mind to perceive a multitude of bodies existing outside itself and apart from one another in certain relations of distance. In the next stage, the mind then compares what two or more bodies share in common with one another when they have the same relations of distance to some other set of bodies; the concept of

⁴²³ As Falkenstein claims in *Kant's Intuitionism*, pp. 88-89, p. 153 & pp. 169-175, where the first argument of the metaphysical exposition is presented as the argument Kant used to establish his position that the forms of intuition are orders of intuited matter. I will have more a good deal more to say about Falkenstein's interpretation in the sections that follow.

place is then formed by reflecting on what these bodies share in common with one another, and abstracting away whatever is different, so as to form the idea of the relation those bodies have to one another independently of the particular bodies that stand in those relations. Finally, the mind forms a concept of space by conceiving all those places together existing side by side in abstraction of any bodies.

In order to facilitate our discussion, it will be useful to recall exactly what Kant says to try and undermine the Leibnizian account.

The concept of space is not abstracted from outer sensations. For I may only conceive of something as placed outside me by representing it as in a place which is different from the place in which I am myself; and I may only conceive of things outside one another by locating them in different places in space. The possibility, therefore, of outer perceptions as such *presupposes* the concept of space; it does not *create* it. Likewise, too, things which are in space affect the senses, but space itself cannot be derived from the senses. [Ak 2:402]

The first question that needs to be answered is: which stage of the Leibnizian account is Kant attacking here? For the Leibnizians, what is originally given to the mind as the starting point from which it subsequently obtains a concept of space are perceptual experiences of sensible objects which appear in various relations of distance. The mind *next* forms a concept of place through abstraction, by focusing upon a body's situation—which is just one determination among others—while eliminating in thought every other determination which belongs to that body.⁴²⁴ When Kant claims that the mind cannot represent objects in spatial relations unless it first represents them in spatial locations, he appears to be attacking the *second stage* of the Leibnizian account: his argument, in other words, is that the mind cannot form a representation (or concept) of an object's place by first perceiving its spatial relations, for the mind could never represent objects in those relations unless it *first* represents them in distinct locations. But if this is Kant's argument, then we appear to run into many of the same problems which were raised earlier against the logical priority interpretation. On this interpretation, Kant would appear to be assuming that one can distinguish between the representation of the spatial locations of objects, as though it were one thing, and the representation of their spatial relations, as though it were another, and his claim is that the ability to represent the latter presupposes that the mind first represents the former. But on what grounds is Kant entitled to assert that the representation of the spatial locations of objects is *distinct* from the representation of their spatial relations? For the Leibnizians the location of an object is given by determining its relations of distance to other objects: it isn't as though their relations of distance are one thing, and their location another, for the location of these objects is defined in terms of their relations of distance. Although it is certainly true that Leibniz assumes that objects appear to us in distinct places, these "places" are nothing

⁴²⁴ Again, 'situation' can either refer to the system of relations that define the angles and distance of a *collection* of bodies or to the relations of distance between the parts of a single body. In the latter case, the arrangement of parts is an individual accident of a body and constitutes that body's extension.

more than the various relations of distance that a multitude of co-existent bodies have to one another, and since there is no genuine idea of place other than these relations of distance, these two representations—the representation of things next to and outside one another and the representation of their locations—are *identical* for Leibniz.⁴²⁵ And in that case, unless Kant has some reason for distinguishing between the contents of these representations, his argument will be trivial, for if representing the place of an object is nothing more than representing it in certain relations of distance to other objects, his argument is then reduced to the tautology that one cannot represent objects outside us and outside one another (i.e., in relations of distance) unless one represents them in distinct locations (i.e., in relations of distance). On the other hand, if Kant is assuming that the representation of an object's place is somehow distinct from the representation of its spatial relations, then what entitles him to this assumption? And why should we believe that our ability to perceive the spatial relations of objects presupposes that we first represent their “places”, where these are entities distinct from those bodies and their relations? Is it really true that when the mind represents one thing outside another, it first represents each of their respective locations, where the representation of these locations involves something *other* than the representation of their relations of distance? *Prima facie*, this seems implausible.⁴²⁶

⁴²⁵ Of course, Leibniz does say that we form an *abstract* concept of place by conceiving of these relations of distance independently of bodies, and this might lead one to object that the representation of bodies standing in spatial relations does not amount to a representation of their location since this latter concept is first given through abstraction. But this seems irrelevant. Though Leibniz distinguishes between abstract and concrete space, surely Kant is not asserting that the mind cannot represent objects in spatial relations without first having formed an *abstract* idea of place. An abstract idea of place can only be formed by abstracting the situation, or extension, of a body from the other marks that belong to it; but if abstraction always involves representing some of the marks of a given whole in isolation of others, then surely the representation of body *together* with its situation must be given *before* the mind can form a concept of the latter by abstraction. And in that case, having an abstract concept of place cannot be presupposed for representing bodies in spatial relations of distance since the former concept is only acquired after first having a representation of the latter. In addition, when it comes to the question of how the mind comes to represent time and space in the abstract, Kant appears to be in *agreement* with the Leibnizians: a pure intuition (or “intuition devoid of sensation” [Ak 2:397]) is given when the mind represents a region of time and space in abstraction of the sensible content contained therein, and in that case Kant, alongside the Leibnizians, seems to accept that the mind represents time and space themselves through the logical use of the intellect, viz., by abstracting the sensible content of a body from its spatiotemporal form. In the argument from §15.A, Kant does not seem to be concerned with how the mind conceives of time and space in the abstract—since he agrees with the Leibnizians on this issue—but rather with the question of how the mind comes to represent things in concrete spatiotemporal relations. It is this latter issue which constitutes the focus of his disagreement with the Leibnizians.

⁴²⁶ Once again, if these “places” are not just relations of distance, then it seems that the only way of making sense of the claim that the representation of an object's location is distinct from the representation of its spatial relations is if Kant is implicitly appealing to a Newtonian concept of place, and that these “places” are entities that exist independently of the bodies which occupy them. Admittedly, it is tempting to think that there are certain Newtonian assumptions which are relevant to the argument in §15.A. From the assumption that the place of an object is something distinct from its occupant, the Newtonians inferred that the spatial relations bodies have to one another are grounded in a prior relation to the parts of space, for since objects come to stand in spatial relations to one another by first occupying distinct positions in space, all spatial relations apply only derivatively to the bodies which occupy those positions. The Newtonians also maintain that space itself cannot affect our sense organs since it is causally inefficacious, and that the

In order to avoid these problems, it is crucial to recognize that Kant's objection to the Leibnizian account is not to be interpreted along the lines just sketched. The Leibnizian account which Kant opposes takes as its *starting point* the appearance of objects outside us and outside one another standing in spatial relations of distance, where these representations are supposed to have been given immediately through the sensations of sight and touch. The concept of space, as well the notions of spatial locations, are then acquired by abstraction from the representation of sensible objects through the logical use of the intellect. Many commentators appear to have assumed that Kant also takes as his starting point the perceptual experience of sensible objects, and that his disagreement is with the claim that the representation of the spatial relations of these objects is prior to the representation of their places—since one cannot represent objects in spatial relations without first representing them in distinct places, whatever that might mean—or, that an object's place is abstracted from the prior representation of these relations. But Kant is in no position to deny that the concept of space is acquired by abstraction through the logical use of the intellect if he grants that what is originally given by experience are representations of sensible objects in space. If Kant, alongside the Leibnizians, is assuming that what is originally given to the mind by sense is the representation of sensible objects, then the disagreement between the two camps turns on whether the representation of the places of these objects is prior to the representation of their spatial relations. But the positions of these objects are either nothing more than their relations to one another, or, they are representations one comes to have by first abstracting all the qualities of the sensible objects which originally appear before the mind except for their situation; and in that case, the appearance of objects in spatial relations is presupposed for representing their locations, rather than vice versa. In either case, then, it is clear that Kant is no position to argue that the representation of their places is prior to the representation of their relations. The way to avoid these problems is to recognize that Kant is actually objecting to the *first stage* of the Leibnizian account. Whereas the Leibnizians assume that what is originally given through the senses of sight and touch are sensible objects standing in various spatial relations, Kant, I maintain,

(absolute) locations of objects in space cannot be determined by sense. See Garnett, *The Kantian Philosophy of Space*, pp. 119-130 for a specimen of this reading. But even if Kant were making these assumptions, it is very difficult to see how they could possibly support his conclusion that the concept of space is not abstracted from outer sensations. Surely it would be a mistake to think that Kant simply *combined* these claims, or, that the reason why the mind cannot form concepts of spatiotemporal relations before it represents objects in distinct spatiotemporal locations is because the latter is prior to the former, and the spatiotemporal locations of objects cannot be given by sensation. This interpretation would require Kant to appeal to different notions of dependency at each stage of the argument: spatiotemporal relations are *ontologically* dependent upon spatiotemporal locations, but that doesn't mean that the mind's ability to represent spatiotemporal relations is also *psychologically* dependent upon the representation of the absolute locations of those objects, in the sense that the mind's representations (or concepts) of spatiotemporal locations must be prior in the order of acquisition to its representations of spatiotemporal relations. The Newtonians inferred the exact opposite conclusion: since space itself cannot be perceived, it follows that we are only ever perceptually acquainted with the relative locations of objects, and that means the mind can only begin to form a concept of space by first forming the ideas of the various kinds of spatial relations presented to us when perceiving bodies. One first has representations of spatial relations and only then forms a representation, or concept, of an object's place by abstraction.

rejects this assumption since he denies that the *sensations* originally given through affection suffice for a representation of sensible objects in spatial relations outside us and outside one another. When Kant claims that the concept of space cannot be acquired by abstraction from what is given by sense, he is not denying that the mind comes to represent the spatial locations of *sensible objects* by abstraction—indeed, Kant himself acknowledges that the spatiotemporal form of these objects is contained in them as one part alongside their other determinations, and that one can represent this form in abstraction of the other qualities that appear alongside it. Kant is not denying that spatiotemporal form can be abstracted from objects that already exist in space and time, he is denying that spatiotemporal form can be abstracted from our *sensations*: the concept of space is not “abstracted from outer *sensations*” [Ak 2:402; my emphasis], and the concept of time is not “abstracted from the succession of *internal states*” [Ak 2:400-401; my emphasis]. Kant is thus challenging the Leibnizian assumption that what is originally given to the mind by sense is the appearance of sensible objects in spatial relations, and his argument is that the mind could not represent sensible objects in spatial relations outside itself, and outside one another, since the *sensations* originally given through affection do not by themselves provide the mind with any idea of space.

But why exactly does Kant think this? Some commentators, notably Aquila, maintain that the reason why sensations are not sufficient for a representation of sensible objects is because they do not by themselves have any intentionality. It is only when the form of intuition—the very element that gives a representation intentionality or object-directedness—is added to these sensations that they come to represent things outside the mind.⁴²⁷ Others, like Falkenstein, maintain that the sensations given by affection cannot

⁴²⁷ Richard Aquila, *Representational Mind*, pp. 60-68, 93-98. Here it is worth making a few clarifications as to what Kant means by “outer sensations”. Kant distinguishes between inner and outer sensations, where the former are said to represent states of the subject while the latter represent a quality that belongs to an external object, and that quality is the intentional content referred to by the sensation. As Falkenstein, *Kant’s Intuitionism*, p. 163 notes, it is likely that Kant inherited this distinction from Baumgarten, *Metaphysica*, §535 and Crusius, *Entwurf der nothwendigen Vernunft Wahrheiten*, §426, the latter of whom explains the distinction as follows:

Wir nennen es äusserliche Empfindung, wenn wir uns darinnen Dinge als ausser demjenigen Dinge, das in uns denket, vorstellen, und diese richten sich nach dem Zustande gewisser Werkzeuge unseres Leibes. Innerliche Empfindungen aber heissen sie, wenn wir uns darinnen etwas als in dem Dinge selbst, welches in uns denket, vorstellen. Durch dieselben sind wir uns unserer selbst, unserer Gedanken, und unseres Gemüthszustandes, bewußt.

Cf. Crusius, *Weg Zur Gewissheit und Zuverlässigkeit der Menschlichen Erkenntniss*, (Leipzig, 1747), §64-66. Kant mentions both inner and outer sense throughout ID, though he never defines them. The distinction is, however, briefly explained in A22/B37 of the CPR, where we are told that “By means of outer sense (a property of our mind) we represent to ourselves objects as outside us, and all as in space...Inner sense, by means of which the mind intuits itself, or its inner state.” Outer sense is thus the power the mind has to represent things outside itself through the senses, while inner sense is the power the mind has to intuit its own inner, sensory states. That Kant is defining these terms in much the same way in ID is suggested when he writes that the phenomena of outer sense are studied in physics, while the phenomena of inner science are the subject matter of empirical psychology [Ak 2:397]. There are two crucial things to note about Kant’s definitions of outer sense and outer sensations. The first is that an outer sensation is not a sensation that exists outside the mind. This would be an absurdity for Kant, since every sensation can only *exist* as a mental state. Instead, “outer sensation” is used to refer to those sensations which *represent* something that exists outside the mind. Now, Kant claims that the mind cannot obtain a concept of space from outer sensations

by themselves provide the mind with any idea of space: the mind cannot represent the spatiotemporal order of objects in space unless the sensations given by affection are originally received in a spatiotemporal order, but since the very same sensations can appear in any number of distinct locations, the spatiotemporal order is not an intrinsic quality of the sensations themselves and so cannot be inferred by inspecting the qualities belonging to sensation. But neither of these interpretations, it seems to me, correctly identifies the thrust of Kant's argument. In contrast to these interpretations, on my view Kant is making a far stronger claim: the reason why the sensations given through affection are not sufficient for providing a representation of sensible objects in space is because they are *non-spatial*.

At this point it will be useful to recall the interpretation of Kant's theory of empirical cognition which we obtained in Chapter 1. In Chapter 1, we argued that for Kant the representations of time and space are generated by the mind itself when the sensations given through affection are actively arranged in a spatiotemporal order according to certain innate laws. Sensations, we noted, have a dual aspect for Kant. At bottom, 'sensation' always denotes a certain kind of phenomenal content, but this content can be considered either with respect to its existence as a state of the subject having that sensation, or with respect to the way this content is represented after it has been coordinated. When sensations are first given to the mind through affection, they initially only exist as mental states or modes of an immaterial, thinking substance. These sensations have a certain sensory content and this content, considered in abstraction of any relation to the forms of intuition, is something non-spatial: before they are coordinated, sensations exist in the mind as non-representational mental states, they have intensive magnitude, but no extensive magnitude, and they can be described in terms of the particular phenomenal content (i.e., a smell, taste, color, etc.,) they display.⁴²⁸ But although sensations, considered in and of themselves, do not represent anything, sensations become representational when they are combined with the forms of intuition. When sensations are combined with the forms of intuition, spatiotemporal form is then imposed upon them, and these sensations are then *projected* outwards and come to be represented outside the mind in spatiotemporal locations as the sensible qualities of appearances. Thus, when combined with the forms of intuition a collection of non-spatial sensations come to be represented as an organized collection of sensory qualities arrayed in space and time. One and the same sensory content thus *exists* as a state of the

since these sensations can only come to represent things outside the mind on the presupposition that it first has a concept of space. On Aquila's interpretation, the reason Kant says this is because it is possible that these sensations might only ever exist as non-intentional mental states which never refer to anything outside the mind. Something else is thus required to account for how these sensations obtain reference to things outside the mind, and for Kant, this additional factor is the concept of space (or the form of intuition). The concept of space, in other words, is that by means of which we represent these sensations outside ourselves. I think this is correct as far as it goes, although in contrast to Aquila I would add that on my view sensations are not only representational, they are also themselves the intentional objects of those representations after they have been coordinated.

⁴²⁸ Recall that in ID Kant endorses some version of mind-body dualism. The mind is not anything spatial or extended; it does not even occupy a position in space. And if so, then none of its states are spatial either.

representing subject, but is *represented* as a sensible quality of an appearance, and the intentional content of that representation is the sensation *itself* after it has been transposed outside the subject.⁴²⁹

Now, this is the theory of empirical cognition which Kant endorses in ID, and it seems that it is this theory which underlies the argument in §15.A. Kant's objection to the Leibnizians is that the mind could not even *begin* to have perceptual experiences of spatially related sensible objects unless the sensations originally given through affection

⁴²⁹ This dual aspect of sensation, together with Kant's failure to specify whether he is denying that space is abstracted from our sensations or from the perceptual experience of spatially related sensible objects, is one of the main reasons the argument is so difficult to interpret. This ambiguity was recognized by C.D. Broad, *Kant: An Introduction* (Cambridge: Cambridge University Press, 1978), pp. 29-30, who helpfully explains the issue as follows:

I suggest that Kant might have argued as follows. Sensations of colour are in themselves simply mental events produced in one's mind by the action of foreign objects. In this respect they are exactly on a par with sensations of sound, smell, etc. It would therefore be absurd to suggest that in themselves they have any spatial characteristics whatever. But in point of fact whenever one has a colour-sensation one does perceive a colour as spread out on a surface of some shape and size at some position outside one's body. Therefore we must suppose that one's mind behaves in a certain characteristic way on the occurrence of a colour-sensation in it. It reacts by producing a perceptual experience in which one is immediately presented with a colour as pervading a certain region at a certain external position. All the regions which a colour can ever be presented to one as occupying are so interrelated as to constitute a single three-dimensional spatial system.

Suppose that Kant meant something like this. Then, if you had said to him that we get our ideas of space by abstraction from our perceptual experiences of coloured objects of various shapes, sizes, and relative positions, he could have answered as follows. All these perceptual experiences, which are your empirical data, are, in their spatial aspect, products of the innate spatialising activities of your mind, which it exercises automatically on the occasion of your having sensations which are, in themselves, non-spatial. What you get out by explicit reflection, comparison, and abstraction, is simply the ground-plan of what you unconsciously put in when you converted bare colour-sensations into perception of coloured surfaces. At this point some of the ambiguities in the term *a priori*, as applied to concepts and percepts, become obvious. In one sense our notion of space would be empirical and not *a priori*. For it would be derived from our perceptual experiences of the coloured surfaces which we see, and their shapes, and positions, and mutual relations, by abstracting in thought from the variegated coloured contents of our visual field and thinking of the homogeneous empty extended system of positions which would then remain. But, if Kant is right, what we arrive at by this process is, in another sense, *a priori* and not empirical. For it is the innate plan in accordance with which the mind works in basing upon intrinsically non-spatial colour-sensations perceptions of colours as spread out and located in the visual field.

As Broad observes, if this is correct, then Kant can consistently assert that sensible objects could never appear before the mind in space unless the mind first projects its sensations outwards—where these acts of coordination assuredly occur beneath the threshold of our explicit, conscious awareness—and yet also allow that the mind only comes to *explicitly* form a concept of space by abstracting it from sensible objects, in much the same way as the Leibnizians propose. Cf. Vaihinger, *Commentar*, Vol. II, pp. 89-96 & John Watson, *The Philosophy of Kant Explained*, pp. 76-79. We argued in Ch. 1, pp. 49-50 that Kant implicitly distinguishes between sensations prior to their coordination, where these are just mental states that exist in the subject, and after they are coordinated, when these sensations are represented in space and time as the sensible qualities of appearances. When Kant claims that the concept of space cannot be abstracted from *outer* sense, he isn't denying that it is abstracted from the representation of sensible objects (i.e., sensations *after* they have been coordinated), but that it is abstracted from our sensations *prior* to coordination. For Kant, it is only after the mind has projected its sensations outwards, and arranged them in spatiotemporal locations, that time and space come to appear alongside sensible objects. But although the spatiotemporal form of *sensible objects* is given by abstraction, the explanation as to how these objects first come to appear in time and space must appeal to the coordinating activity of the mind, which projects the sensations originally given by affection outwards by representing them in spatiotemporal locations.

enable the mind to first represent things outside itself and outside one another in distinct spatial locations. But for Kant, the mind does not come to represent things outside itself through sensation alone, for the sensations originally given through affection are non-spatial. And, because these sensations are originally non-spatial, Kant thinks the mind can only come to represent things outside itself, or outside one another, if it actively coordinates sensations by projecting them outwards so that they come to be represented in distinct spatial locations. Now, *if* these claims are accepted, then one can begin to understand why the concept of space cannot be empirical. When the Leibnizians claim that the concept of space is originally acquired by abstraction from the representation of sensible objects outside itself and outside one another, they assume that these representations are given directly by sense. But if Kant is correct, the representation of spatially related objects is not given by sense, it is generated by the mind itself when it coordinates the sensations given by affection upon the occasion of experience. Consequently, the mind could never even *begin* to perceive spatially related sensible objects unless it first coordinates the sensations given by affection. Now, this alone does not yet explain why the mind must already have a concept of space before it can represent spatially related outer appearances; the only thing this would show is that the mind cannot represent spatially related outer appearances unless it first actively coordinates sensations by projecting them onto distinct spatial locations. But, as we argued in Ch. 1, Kant identifies the concept of space with the innate law present in the mind from birth which is responsible for coordinating the sensations given by affection. The mind's ability to perform these acts of coordination is not something it learns over the course of experience; the acts of coordination which generate the representation of spatially related sensible appearances are instead made possible by virtue of an innate faculty or disposition which is hard-wired into the mind from birth. And this disposition is not a *bare* disposition which is empty of all content; it is a disposition which is structured in a highly specific way, namely, to coordinate sensations by projecting them onto distinct spatial locations. The fact that this disposition is structured in this way is what entails the presence of a certain latent, conceptual content which is tantamount to a concept of space: if the mind is innately disposed to coordinate its sensations by ordering them in spatial locations, then the mind must have some underlying, implicit grasp of this concept from birth. In other words, since the concept of space is what underlies the coordinating activity of the mind, it follows that the mind must have a concept of space prior to experience, however latent that concept might be; and, it is only insofar as the mind first has this concept of space that it can subsequently form the concepts of spatially related sensible appearances.⁴³⁰

⁴³⁰ As Kant puts it in Ak 17:578, Refl. 4511, 1772-1775(?) (1769-70?) 1771??: "Is space **prior to** things? By all means. For the law of coordination is prior to things and grounds them." Of course, space is not identical to the law of coordination (which is a mental state), but is the product of that law. Instead, what is prior is the *concept* of space, which exists in the mind as an innate disposition to coordinate the sensations originally given by affection. See Ch. 1, pp. 38-41 and Ch. 2, pp. 31-39. Note that the concept of space is not innate in the sense that the mind has a fully formed representation of space prior to experience. The concept of space is only innate in the sense that it is present in the mind from birth as the conceptual content which

If this interpretation is correct, then the force of the argument in §15.A appears to be derived in large part from Kant's basic theory of empirical cognition. But it is here that we face an enormous problem, for to this point Kant has not provided any reason to accept some of the central components of this theory: although the general structure of Kant's theory of empirical cognition was established in Ch. 1, his motivations for adopting this peculiar theory have yet to be explained. Of particular importance here is the claim that the sensations originally given through affection are non-spatial. If the interpretation of the argument in §15.A which we are proposing is correct, it is this premise which stands in most need of explanation, not only because it is an essential component of Kant's theory of empirical cognition, but also, more importantly, because the ultimate success of the argument appears to turn in large part on whether this assumption is true.⁴³¹ And yet, one will be hard-pressed to find Kant providing any evidence for this claim in either his published or unpublished writings. The absence of any such argument has led many commentators to conclude that this claim was merely an assumption which Kant accepted without argument. Famously, Kemp Smith calls it an "assumption which Kant has already embodied in his definition of the 'form' of sense, viz., that sensations are non-spatial, purely qualitative" and which always appears "as a premise for argument, never as a statement calling for proof."⁴³² On Kemp Smith's reading, the force of the argument in §15.A is derived entirely from this implicit assumption.

The proof that the representation of space is non-empirical may therefore be explicitly stated as follows. As sensations are non-spatial and differ only qualitatively, the representation of space must have been added to them. And not being supplied by the given sensations, it must, as the only alternative, have been contributed by the mind....⁴³³

But the obvious problem with this is that if the argument derives its force from the *unproven* assumption that our sensations are non-spatial, then we are not any better off than when we started, for the real burden would then be to show *why* our sensations are

underlies the innate disposition which enables it to coordinate sensations by projecting them onto spatial locations. The mind only begins to form a representation of space (or a representation of spatially arranged sensations) upon the occasion of experience when it first begins having sensations. And, it is the generation of this representation which is a *conditio sine qua non* for the subsequent acquisition of the concepts of spatially related sensible appearances. Notice, in addition, that this interpretation does not require that the mind perceive space as an independently existing container which is numerically distinct from sensible appearance; and it certainly does not require that the mind perceive, or represent, the empty locations which sensible appearances occupy before it represents those objects. Indeed, the argument does not seem to require that the mind have direct perceptual acquaintance with this entity at all. Indeed, the argument would succeed even if the representation of space consisted in nothing more than sensations arranged in various spatial locations, where these 'locations' are purely relational.

⁴³¹ Versions of this interpretation are defended by C.D. Broad, *Kant*, pp. 27-30; Rolf George, "Kant's Sensationism", *Synthese* 47 (1981), pp. 238-241; Patricia Kitcher "Discovering the Forms of Intuition," *The Philosophical Review*, 96 (1987), pp. 205-248; Patricia Kitcher, *Kant's Transcendental Psychology* (Oxford University Press, 1993), pp. 30-60 & esp. pp. 46-47; Kemp Smith, *Commentary*, pp. 86-88 & 99-103; Vaihinger, *Commentar*, Vol. II, pp. 151-184; John Watson, *The Philosophy of Kant Explained*, pp. 76-84.

⁴³² Kemp Smith, *Commentary*, p. 86.

⁴³³ *Ibid*, p. 101.

non-spatial. Surely the truth of this claim is far from obvious: *prima facie*, it seems far more plausible to maintain, alongside the Leibnizians, that the sensations given through sight and touch are what originally provide the mind with representations of spatially related sensible objects, and that these sensations are intrinsically spatial. In the absence, then, of any argument for the non-spatiality of our sensations, there seems to be no force to Kant's argument for the non-empirical origin of the representation of space.⁴³⁴

Before we attempt to make some headway on this issue, an important clarification needs to be made. Strictly speaking, the argument in §15.A does not explicitly turn on any claim that sensations are intrinsically non-spatial, but rather one having to do with how the mind comes to *localize* sensations: the reason the concept of space cannot be acquired by abstraction is not because sensations are non-spatial, but because the mind cannot represent things outside itself and outside one another unless it first represents these sensations in distinct, spatial *locations*. Nevertheless, if sensations are originally non-localized, then this would also seem to imply that they are non-spatial: sensations cannot be extended unless they have distinct parts each of which are situated next to one another, but if our sensations have no locations, they also cannot possess extension or any of its modes, such as shape, size, etc. Consequently, the claim that sensations are originally non-spatial is something inferred from the fact that sensations do not by themselves enable the mind to localize objects in space, or provide the mind with any representation of spatially located entities. And in that case, the key assumption that Kant appears to be making in §15.A is that the mind's representations of things in spatial locations is not given by sensation alone: the sensations originally given through affection only come to be represented outside us in space after they are projected outwards through acts of coordination which modify these otherwise non-spatial, or at least non-localized sensations, by imposing spatiotemporal positions upon them, and these acts of localization are somehow prior to representing the extension, size and shape of sensible objects. The main question that really needs to be answered, then, is why does Kant assume that the spatial locations of objects cannot be given through sensation alone? If we can answer this question, then presumably we will also then be in a position to answer

⁴³⁴ Admittedly, when Kant first introduces his theory of empirical cognition in §4, he does appear to give an argument for the non-spatiality of sensation when he asserts that "objects do not strike the senses in virtue of their form". But just what the argument is supposed to be is unclear. One possibility is that Kant is making a tacit appeal to the Newtonian assumption that space and time are not causally efficacious: although objects in space and time can affect the senses, space and time *themselves* cannot since they are causally inert. The reason, then, why the form of appearance is not given by sense is because the only things that can interact with our sense organs (i.e., "strike the senses") are sensible objects, not space or time themselves. But the problem is that this argument would fail to establish Kant's position since it does not show that the sensations given to the subject when *external objects* strike the senses are non-spatial. Although the Newtonians maintain that space itself is causally inefficacious, this did not lead them to deny that the concept of space is obtained from experience: although space itself cannot causally interact with our sense organs, sensible objects endowed with spatial attributes can, and the sensations given through sight and touch provide the mind with sensory experiences of objects in spatiotemporal relations. The concept of space is thus obtained, in part, through the spatially endowed products of sensation. In that case, even if Kant is entitled to rule out the possibility that space itself causally interacts with our sense organs, he still cannot infer that all our sensations are non-spatial, and hence, only acquire a spatial form after the mind actively coordinates them.

the further question of why the sensations originally given by affection must be non-spatial; and once this has been accomplished, we will then be in a position to understand why the concept of space cannot be acquired by abstraction from outer sense.⁴³⁵

⁴³⁵ That the argument turns on the question of how the mind comes to localize the sensations given by affection is something that comes out even more clearly in the version from A23/B38 of the *Critique*.

Space is not an empirical concept that has been drawn from outer experiences. For in order for certain sensations [*empfindungen*] to be related [*bezogen werden*] to something outside me (i.e., to something in another place in space from that in which I find myself), thus in order for me to represent them as outside one another [*sie als ausser*], thus not merely as different but as in different places, the representation of space must already be their ground. Thus the representation of space cannot be obtained from the relations of outer appearance through experience, but this outer experience is itself first possible only through this representation.

Localization is also the focal point of the interpretation advanced by Falkenstein, but his interpretation is quite different from the one I am proposing. On my interpretation, the sensations originally given by affection are non-localized, though they do subsequently come to be represented in distinct locations through coordination. On the alternative interpretation defended by Falkenstein, sensations are localized since they exist in the same places as the sense organs where they are originally received: on his reading, what Kant is asserting in the passage just cited is that the reception of sensations on the sense organs is what serves as the grounds for determining the spatial relations of objects in space, or in other words, that the mind cannot represent the spatial relations of objects unless sensations are first *given* in a spatial order. Whereas on my view the mind localizes originally non-spatial sensations by representing them outside itself in spatial locations, on Falkenstein's reading spatial sensations are first localized on the sense organs and merely *represent* objects located in space: these sensations are what enable the mind to subsequently identify the locations of those objects, but they are not themselves represented in those same locations. At this point there is another objection to Falkenstein's reading of this passage which deserves to be mentioned since it will help to support my own reading of the argument in §15.A. As Falkenstein, *Kant's Intuitionism*, p. 111 notes, in the version of the argument just cited, Kant appears to assert that sensations are in space (Cf. A20/B34, where Kant writes that sensations are ordered and placed in space, viz., "that within which the *sensations can alone be ordered and placed in a certain form* cannot itself be in turn sensation" (my italics)). Kant begins by asking how sensations come "to be related to something outside me"—or, how they come to be involved in an intentional relation to something which they represent—and his answer is that "the representation of space must already be their ground." On Falkenstein's reading, Kantian sensations are the physical impressions brought about by external objects when they affect the sense organs, and these sensations are thus literally in space since they are located on the surfaces of the sense organs where they are originally received. Thus, when Kant asserts that the representation of space is presupposed if sensations are to represent things "outside me" and things "outside one another", what he means is that sensations must first be *given* to the mind by appearing in spatial locations on the sense organs if the mind is to represent things outside itself in various spatial relations. But as Jankowiak, *Sensation and Intentionality in Kant's Theory of Empirical Cognition*, pp. 151-160 has argued, the problem with this interpretation is that it is not supported by the text. In order to show that space is not an empirical concept abstracted from outer experience, Kant begins by asking how sensations come "to be related to something outside me"; but when he proceeds to explain how this occurs, he refers back to these very same sensations and says *they* must be represented in space ("...in order for certain sensations to be related to something outside me...thus in order for me to represent *them* as outside one another [*sie als ausser*]", (my emphasis)). Whereas in the first part of the passage a sensation is a state of the subject that stands in an intentional relation to something outside the mind, in the second part Kant says that the *very same* sensations are what come to be represented as spatially related to one another by virtue of being represented in distinct locations. But on Falkenstein's interpretation, what the sensations represent is not *themselves*, but rather the sensible qualities of an appearance (as interpreted by the intellect); although sensations are located on the sense organs, they do not represent the state of the sense organs, though they should on his interpretation, since Kant explicitly says that sensations come to represent things "outside one another" by virtue of being *themselves* represented in different places. According to Jankowiak, the interpretation best supported by the text is that sensations are not only representational, but that they come to be "related to something outside me" by virtue of *themselves* being represented in space. Of course, as Jankowiak stresses,

Having thus narrowed our focus somewhat, we may now proceed to try and determine why Kant maintained that the sensations originally given by affection are non-localized. In order to begin to answer this question, the first place to look is Chapter Three of *Dreams of a Spirit Seer*, for it is there that we can find the most detailed discussion Kant ever provides as to how the mind comes to represent the locations of objects in space. Kant's main concern in this chapter is to provide an explanation of how it is that spirit-seers come to perceive the figments of their own imaginations existing in regions of space outside their bodies and alongside the objects that exist in the external world; but in the course of answering this question, Kant also offers an explanation as to how the mind comes to represent the apparent places of the objects that affect the senses, for the same act of localization involved in representing images in locations in space is *also* involved in representing objects in the external world through the senses.

...in using our outer senses, what we find is that, in addition to the clarity with which the objects are represented, we include the place of these objects in our sensations. This may not always, perhaps, occur with the same exactitude in all cases; nonetheless, it constitutes a necessary condition of the sensation, and if it were not satisfied it would be impossible to represent things as external to themselves. This being the case, it is highly probable that our soul, in its representation, transposes the object of sensation, locating it at the point at which the various lines, which are caused by the object and which indicate the direction of the impression, converge, when they are extended. Hence, if one takes the lines, which indicate the direction in which the light-rays enter the eye, and extend them backwards, the point at which they intersect is seen as a radiant point. This point, which is called the optical point, is, it is true, in respect to the effects produced, the *point of divergence*. In respect of the representation entertained, however, it is the point of *convergence* of the lines indicating the direction in which the sensation is transmitted when it makes an impression (*focus imaginarius*). It is in this way that the place of a visible object, even when it is seen with one eye only, is determined.
[Ak 2:345]

Though it may not be immediately obvious, there are a number of points made in this passage which suggest that the explanation provided here as to how the mind comes to represent the locations of objects in space is closely connected to the theory of space perception defended in ID. Kant's goal in this passage is to explain how the mind comes to perceive the locations of objects outside itself and what he says is that "in using our

this does not mean that sensations are literally located in space—insofar as they are mental states, they cannot *exist* in space at all—but only that they are *represented* in space. What Kant is asserting, then, is that in order for sensations to represent things outside me, the sensations *themselves* must be represented outside of and next to one another in distinct locations of space, and that it is only by virtue of the outward projection of these sensations that "outer experience is itself first possible." Likewise, it is only insofar as the mind *first* represents these sensations in distinct, spatial locations that the representation of "relations of outer appearance" is then made possible: that is why, Kant concludes, the representation of space cannot be obtained by observing the relations of outer appearances (i.e., sensible appearances in spatiotemporal relations), for these objects can only appear outside us *after* the mind has first coordinated its sensations.

outer senses, what we find is that...*we include the place of these objects in our sensations*” [ibid; my emphasis]—that is, we come to represent the objects that exist outside us by *adding* their place to the sensations they cause in us when they stimulate our sense organs. Kant also claims that this act of localization which the mind performs upon its sensations is a necessary condition of all outer representation: it is necessary that the mind “include the places of these objects in our senses” since this “constitutes a necessary condition of the sensation, and if it were not satisfied it would be impossible to represent things as external to themselves” [Ak 2:345]. This remark is nearly identical to what Kant says in the argument in §15.A of ID: there, Kant claims that the concept of space is presupposed in all outer sensation since one can only conceive of things existing outside oneself “by representing it in a place which is different from the place in which I am myself,” and that one can only “conceive of things outside one another by locating them in different places in space” [Ak 2:402]. It is for precisely this reason that “outer perception as such *presupposes* the concept of space” [ibid]. What Kant appears to be asserting in both these passages is that the mind’s ability to have outer perceptions presupposes that it represent its sensations outside itself and outside one another in different locations in space; that this is done by an act of localization which projects these sensations outwards so that they come to appear in the same location as the object which causes those sensations; and that this act of localization is a necessary condition for representing things outside us or of outer experience in general.⁴³⁶

Throughout *Dreams of a Spirit-Seer*, sensations are said to occur when external objects produce material impressions by affecting the sense organs. These impressions

⁴³⁶ One might balk at my suggestion that in this passage Kant is asserting that sensations are projected outside the mind through coordination. Admittedly this interpretation is not mandated by the text, but the reason I have adopted it is because of the results obtained in Ch. 1, where it was shown that for Kant the mind coordinates sensations by projecting them onto spatiotemporal locations. Here in particular it is worth recalling Ak 17:618–619, Refl. 4634 (1772–73; M XXII–XXIV), where Kant explicitly asserts that the spatiotemporal positions of sensations are brought about by the mind itself: the coordinating activity of the mind is that by means of which we “place something in space and time” and “place it next to or after another”, and as actions performed by the mind itself, they are the “means to *bring about each position*” (my italics). See Ch.1 for discussion. Moreover, there are a few additional pieces of circumstantial evidence in the passage from *Dreams* which provide further support for this reading. First, Kant says that “in using our outer senses, what we find is that...we include the place of these objects in our sensations” (Wir finden aber bei dem Gebrauch der äußeren Sinne, daß über die Klarheit, darin die Gegenstände vorgestellt werden, man in der Empfindung auch ihren Ort mit begreife). But if the place is something *added* to the sensation, then that suggests that Kant is distinguishing between the sensation as it is in itself, prior to being localized, and the sensation as it appears after it is localized. Likewise, when Kant asserts that the addition of place is a necessary condition of outer experience, he seems to leave it open that these sensations could exist in the mind without being localized; Kant does not say that it is a necessary condition for the sensation *to exist* that it be represented in a place, but only that it is a necessary condition for *outer* experience. But if sensations can exist without being localized, then presumably they would only be experienced as states of the mind itself and would not be represented outside us in space. What is suggested by both these observations is that Kant is distinguishing sensations as they originally exist as mental states, and those same sensations after they have been coordinated so as to represent something in space, and this distinction was, of course, central to our interpretation of Kant’s theory of empirical cognition. Although this interpretation is not mandated by the passage cited from *Dreams*—specifically the claim that the mind localizes sensations by projecting them outwards into space—it is certainly at least consistent with the remarks made in that passage, and also, it seems, supported by the other pieces of evidence just cited.

correspond to certain vibrations in the nerves which occur when bodies come into contact with our sense organs; these vibrations are then transmitted mechanically along the nerves in the body from their initial point of reception in the sense organs until they reach a certain part of the brain (the “sensorium” of the soul), at which point the mind has a sensation.⁴³⁷ What happens next is that the mind adds the place of the object which initially caused this impression *to the sensation itself*—the place of the object we represent is added to the sensation in the sense that the sensation is represented in the same location as the object which causes it. The sensation comes to be represented in a location in space when the mind projects that sensation outwards along the path from which the impressions which initially cause that sensation came from. Kant explains how this occurs for the sensations that belong to each sensory modality. In the case of vision, when light rays strike the retina, the mind comes to determine the location of the object that causes the sensation by projecting that sensation backwards in a straight line along the path from which the light rays originated, by tracing a line backwards from the stimulus to its source. In doing so, the mind comes to represent the sensation existing outside itself in the same location in space as the body which caused that sensation. This basic account is then extended to explain how the mind localizes the sensations given by the other senses:

Perhaps one can make the same assumption in the case of the impressions made by sounds, for their impulses also travel in straight lines, so that the sensation one has of a sound is at the same time accompanied by the representation of a *focus imaginarius*. This focus is located at the point at which the straight lines, emanating from the system of nerves which has been set vibrating in the brain, converge, when they are extended outwards. For, to a certain extent, one notices both the direction and the distance of an object which we hear making a sound, even if the sound is a quiet one and comes from behind us, and in spite of the fact that the straight lines which can be drawn from it do not meet the opening of the ear but fall upon other parts of the head; one is accordingly forced to believe that the lines indicating the direction of the vibration are extended outwardly in the representation of the soul, the object making the sound being located at the point at which those lines converge. Exactly the same thing can, it seems to me, also be said of the other three senses, which differ from sight and hearing in so far as the object of sensation is in immediate contact with the organs of sensation, so that the lines indicating the direction of the sensible stimulus have their focal point in the organs themselves. [Ak 2:345]

We determine the (apparent) location of an object causing a sound in the same way that we localize a visual sensation, namely, by projecting the sensation outwards in the

⁴³⁷ In Ch. 1 we argued that for Kant sensations are not physical states of the body, but are instead mental states which exist in the mind. These sensations are thus not identical to the impressions in the organs, but are rather the effects of those impressions. This, however, is not clearly asserted in *Dreams*. Throughout *Dreams*, Kant does appear to implicitly distinguish between sensations, which are identified as sensible qualities like color, smell, warmth, etc., and the material impressions that are given when bodies affect our sense organs but, admittedly, Kant never explicitly distinguishes sensations from material impressions, and nothing in *Dreams* rules out the possibility that he actually identifies the two.

direction of the objects which caused it, by tracing a line from the point of convergence backwards to the point of divergence. The same applies to the sensations of taste, smell, and touch, although these sensations are not projected outwards onto their source, but are instead localized in the sense organs: sensations of taste are localized on the tongue, smells in the nose, and tactile sensations are represented in whichever part of the body is being touched. What we have then is a general theory of how the mind comes to localize its sensations: the objects we perceive with our senses are represented existing outside us in different places in space and the mind represents these objects by localizing its sensations in the very regions of space which are supposed to coincide with the objects that cause these sensations. And these acts of localization are what explain the possibility of outer experience, since it would be impossible for the mind to represent things existing outside itself in their absence.

But this still gives us very little to go on. Putting aside any questions about whether this theory can adequately explain the way objects come to be localized in space,⁴³⁸ we have yet to see any reason why these sensations must be originally non-localized or non-spatial. Interestingly enough, however, Kant himself notes that his account of localization for visual perception is the standard explanation given in optics, and he cites the Cartesians in particular.⁴³⁹ This reference is interesting, in large part because a careful look at the discussions of localization found in a number of Cartesians reveals that many of the central assumptions of Kant's own theory of empirical cognition were also defended by many of his Cartesian predecessors. Here it is worth noting in particular that the claim that sensations are non-spatial is not *unique* to Kant at all. Indeed, a careful look at many of Kant's Cartesian predecessors, as well as others in the early-modern period who followed in their wake, reveals that they too shared the assumption that the sensations originally given by affection are non-spatial.⁴⁴⁰ Given the near total lack of attention which Kant himself devotes to discussing this issue, an overview of some of these theorists may provide us with the proper framework for understanding Kant's own position. Indeed, it is possible that the reason why Kant does not bother to explicitly argue for the claim that sensations are originally non-spatial is because he simply inherited this view from his predecessors, and regarded it as a dialectically acceptable background assumption which did not require any special discussion.

What I propose to do, then, is to provide an overview in the next section of some of the background context which I think can help us understand Kant's account of the

⁴³⁸ Kant himself raises a problem for this theory at Ak 2:345.

⁴³⁹ Descartes and Malebranche, like Kant, explain how the mind comes to represent the locations of objects in space by claiming that, after the mind has an impression, it turns its attention along the path leading from the stimulus to its source and thus tracing the light rays projected onto the retina backwards in a straight line in the direction of the object that caused them. See Descartes, *Dioptrics*, Sixth Discourse, pp. 104-105 and Malebranche, *Search for Truth* (Cambridge: Cambridge University Press, 1997), p. 745.

⁴⁴⁰ This is noted by many historians who have written on the period. See esp. Nicholas Pastore, *Selective History of Theories of Visual Perception 1650-1950* (New York: Oxford University Press, 1971) and Edwin G. Boring, *Sensation and Perception in the History of Experimental Psychology* (D. Appleton, 1942). This assumption was common to many 19th century theorists as well. See Gary Hatfield, *The Natural and the Normative: Theories of Space Perception from Kant to Helmholtz* (The MIT Press, 1991).

origin of the representation of space. In order to keep our discussion within manageable limits we will restrict our attention to two theorists in particular: Nicholas Malebranche and Thomas Reid. Although the claim that sensations are non-spatial seems to originate in Descartes, Malebranche and Reid are noteworthy for their especially clear and detailed presentation of some of the central arguments in support of this claim.⁴⁴¹ And, as we will shortly observe, both of these theorists argue for certain core theses which are important elements of Kant's own theory of empirical cognition. Of course, this is not to suggest that there are not also great differences between these philosophers (far from it, as we will see!), but only there are certain important theses which they appear to share in common, and which make them likely sources for Kant's own views. In order to bring these similarities to the forefront, we will begin with a brief discussion of Malebranche, who provides much of the basic framework for many of the theories of empirical cognition we are interested in, and then turn to Reid. After we complete this brief overview, we will then return to Kant and finish our reconstruction of his argument for the non-empirical origin of the representation of space.

§4.4: Malebranche, Reid & Kant on the Non-Spatiality of Sensation

Much of the basic framework for Malebranche's account of the nature of sensory perception is provided by Descartes. Malebranche, following Descartes, is a dualist. Every created substance is either a mind or a body and these substances are distinguished from one another by their essential attributes. The nature of body consists in extension: a material substance is essentially a thing extended in length, width and breadth, and every property which can be attributed to a body, such as shape, size or motion, is a mode of extension. The essential attribute of mind is thought: the mind is essentially a thinking thing and each mode of a thinking substance (e.g., doubting, judging, willing, conceiving, understanding, feeling, imagining, etc.,) is just a form of thought. The division of the created world into mind and body is both exclusive and exhaustive, for the attributes and modes which characterize one substance cannot belong to the other. Mental substances are not extended, they have no length, width, or breadth, no shape or size, and they occupy no space. Likewise, none of the properties that characterize body can belong to a mental state: a mental state is not the kind of thing that is extended in length, width, and breadth, it does not have shape or size or any of the other properties that belong to body.⁴⁴² Sensations are included among the various mental states that can belong to a thinking substance. Sensations are sensible qualities like colors, smells, tastes, sounds (etc.,) and they exist as modifications of the soul (sensations are "Nothing but the soul itself existing in this or that way").⁴⁴³ Although, as mental states, sensations cannot be identified with any mode of a material substance, they are nevertheless correlated to (or occasioned by)

⁴⁴¹ The claim that Kant inherited this assumption from his predecessors is also endorsed by both Rolf George, "Kant's Sensationism", pp. 234-241 and Patricia Kitcher, "Discovering the Forms of Intuition," pp. 205-248. But, as we will see, I interpret the nature of this influence rather differently from the way these other commentators do.

⁴⁴² Malebranche, *Search*, I.10.i, p. 48. I use upper-case Roman numerals to refer to the book, Arabic numerals to refer to chapter, and lower-Roman numeral to refer to the section.

⁴⁴³ Cited by Steven Nadler, *Malebranche & Ideas* (Oxford: Oxford University Press, 1992), p. 25

certain motions that occur in the body after an external object stimulates the nerve-endings of the sense organs. Bodies have certain powers to produce sensations of this or that sort when the motions of the particles that compose a body impinge upon our sense organs, and different sensations correspond to differences in the motions, shapes, and sizes of these particles as well as the state of the body's sense organs; which sensations we experience upon the occasion of a certain physical stimulus is determined by a "natural correlation" that is supposed to exist between a particular sensation and the particular motions, shapes and sizes of the particles which occasion those sensations. Malebranche's account of the physiological processes involved in sensation is largely derived from Descartes. Within the body there are nerve filaments that originate in the center of the brain and which are spread out to all the exterior portions of the body. These nerve filaments connect the sense organs to the brain. When the motion caused by an external object is communicated to the body's sense-organs, the nerve endings in that area of the body are disturbed, and the vibrations in these nerve endings are what trigger certain motions in the fibers of the nerves which are then transmitted to the brain. After these motions have been communicated to the part of the brain where the soul resides, the mind has a sensation of color, smell, pain, etc.⁴⁴⁴

Malebranche insists that it is crucial to keep the various components involved in sensation distinct from one another, since they are often confused. In particular, there are four things that are involved in every sensation that must always be distinguished: the action of a body when it interacts with our own (e.g., "in heat, for example, the motion and impact of the particles of wood against the fibers of the hand"); the agitation of the nerves in the body reacting to the impact of these particles, which cause motions in the nerve fibers to be communicated to the brain; the sensation itself as it exists in the soul (i.e., "what each of us feels when near fire"); and finally, the *natural judgment made by the soul when it projects a sensation onto an external object or to a part of its own body*.⁴⁴⁵ This last component of sensation, which Malebranche describes as an involuntary act which the mind performs upon its sensations, is the judgment which causes us to perceive a sensation occurring on the surface of a material object or in a part of our own body. For Malebranche sensations, considered in themselves, are only modes of thought; but these sensations come to be referred to objects through certain acts of judgment which project them outwards onto the surfaces of objects. This distinction between a sensation proper and a sensation together with a natural judgment introduces an ambiguity which pervades Malebranche's entire discussion of sense perception. Sometimes Malebranche uses 'sensation' to refer to the third component described above; but other times the word refers to the fourth component of sensation, to the sensation conjoined together with a natural judgment, or, the "complex involving both the feeling and the accompanying involuntary judgment which projects that passion onto a body."⁴⁴⁶

⁴⁴⁴ Malebranche, *Search*, I.10.ii, pp. 49-50. According to Malebranche, there are two things always present whenever the mind perceives a sensible object, sensations *and* ideas, but I will leave aside the role that ideas play in the perception of sensible objects. For discussion, see Steven Nadler, *Malebranche & Ideas*.

⁴⁴⁵ *Search*, I.10.vi, p. 52.

⁴⁴⁶ *Ibid.*

The most important difference between a sensation proper and a sensation-judgment complex has to do with their intentional content. In the strict sense of the term, sensations are non-intentional mental states of a thinking substance; they are not the intentional objects of an act of sensing, but just a state a subject is in. But although the sensation proper only exists as a mode of thought, and does not represent anything outside itself, a sensation does acquire intentional content after it has been modified by a natural judgment. These judgments modify the sensation by causing the mind to perceive it either in a part of its own body (“the pain is in my hand”) or in the external object which causes it (“the fire is hot”), and as a result of this modification, the sensation itself then acquires intentional content.⁴⁴⁷

Natural judgments play a crucial role in explaining how the mind comes to perceive the spatial properties of the objects we represent through the senses. Natural judgments are first introduced to explain how we come to perceive the shape, size and distance of sensible objects. The reason such judgments are deemed necessary is because the information initially recorded in the visual system cannot explain how we come to accurately perceive these features. When the light rays emitted by illuminated objects enter the eyes, images are formed on the retinae which depict scenes in the outside world and these images are the basis upon which the mind constructs a visual representation of the external world. The problem however is that these retinal images are defective in various ways, for the objects we represent through sight are seen having certain characteristics which deviate from the information contained in these images.⁴⁴⁸ For

⁴⁴⁷ This is noted by Nadler, *Malebranche & Ideas*, pp. 14-26. Rolf George, “Kant's Sensationism”, pp. 234-238 identifies Malebranche as a likely influence on Kant, but it seems to me that his interpretation does not adequately recognize Malebranche’s view on the intentionality of sensations. According to George, for Malebranche sensations are simply non-intentional feelings in the subject. But this, it seems, fails to appreciate Malebranche’s distinction between the way sensations exist as modes of a subject, before the intervention of a natural judgment, and how these same sensations subsequently come to be represented outside the mind when conjoined with natural judgments. For Malebranche, sensations only exist as non-intentional mental states *before* they are conjoined with natural judgments; but they do acquire intentional content *after* they are combined with these judgments, and the intentional content of those states are the sensations themselves, after they have been projected outside the subject. That is, one and the same sensory content initially exists as a state of the subject and lacks intentional content, but that state comes to have intentional content through a natural judgment, and the intentional content of that state is then the sensory content itself.

⁴⁴⁸ Many key aspects of Malebranche’s account of visual perception are inherited from the work of his predecessors. Following Kepler’s theoretical discussions on the optics of pinhole cameras, it became common to assume that one could understand how objects in the external world come to be perceived through sight by treating the human eye as a kind of camera obscura. Like a camera obscura, the eye has a small opening through which light passes, a convex lens which reflects light, and a surface on which that light is projected. And, in the same way that images depicting scenes in the outside world are formed on the surface inside of a camera obscura when light is projected through its opening, certain experiments appeared to confirm that images of scenes in the outside world are also formed on the retina. It was also assumed that what we see depends upon the spatial characteristics of the image projected on the retina; there is, after all, a rough one-to-one correspondence between the spatial outline of the illuminated points emitted from the object we see and the points of the retinal image. But, while the information projected on the retina is related to what we see, many of the spatial characteristics of the retinal image deviate significantly from the spatial characteristics of the objects we ultimately perceive through sight, so that the information contained in the retinal image cannot, by itself, explain why we see things the way we do and

example, the image produced on the retina often does not correspond to the shape or size of the thing we perceive: when looking at a cube what we see is a three-dimensional figure whose sides are equal in length, but the image of the cube on the retina is two-dimensional and has unequal sides.⁴⁴⁹ Other examples include the perception of size and distance. When the rays of light emitted by an object enter the eye, the length between the outermost rays projected on the retina will change in proportion to the distance from which the object is seen, so that a man approaching us from a distance will project an image that will continuously increase in size the closer he gets. But while the size of the retinal image changes with distance, the object we see does not appear to change its size from one moment to the next.⁴⁵⁰ Distance is also not registered by means of the images projected on the retina, for the light emitted by an object at any distance always strikes the retina at the *same* point, and since the physical effects produced on the retina are always the same, regardless of the distance between the visible object and the eye, we cannot see different distances along the same line of sight.⁴⁵¹

not otherwise. For example, since light travels in a straight line, when the light projected through the lenses of the eyes falls on the surface of the retina, the order in which these points appear is reversed from left to right and inverted upside-down, so that the orientation of the points of the retinal image is the reverse of the objects we see. Such discrepancies were regarded as defects of the retinal image, and the presence of such defects seemed to imply that the information contained in these images must be supplemented by certain additional factors which correct that information before we can accurately represent the spatial characteristics of the objects we perceive through sight. One of the main points of divergence between nativists and empiricists is whether these additional factors come in the form of certain innate principles inherent to the visual system or whether instead the mind gradually learns to correct these defects through principles of association based on experience. For a helpful overview of this and related issues see Nicholas Pastore, *Selective History of Theories of Visual Perception*, pp. 3-17. One additional point worth noting is that, for Descartes and Malebranche, the images formed on the retinae are transmitted to the brain where a copy is traced on the surface of the pineal gland and it is this brain image which is the proximate cause of a sense perception rather than the images on the retinae. The brain image is formed in much the same way that the design of a seal impresses a copy of itself on the wax that it stamps; and, in much the same way that the defects of a seal are imprinted on a piece of wax, the defects in the retinal image are also reproduced in the image formed on the surface of the pineal gland.

⁴⁴⁹ *Search*, I.7.iv; LO, p. 34.

⁴⁵⁰ *Ibid.*

⁴⁵¹ *Search*, I.9.i, pp. 40-41. Patricia Kitcher "Discovering the Forms of Intuition," pp. 205-248 has responded to Kemp Smith's objection that Kant arbitrarily assumes that sensations are non-spatial by arguing that it was Kant's likely acquaintance with *these* issues which led him to conclude that "the spatial properties of objects...derive from our perceptual apparatus and not from the properties of objects affecting sensation" (p. 206). According to Kitcher, the reason why Kant did not explicitly argue for this assumption is because it was already widely shared by his contemporaries, all of whom allegedly believed that there is no way to explain how the mind could come to perceive the spatial properties of the objects it represents through the information given by the senses. In the case of vision, what is given by sensation is the information recorded on the retinae when light is projected on its surface and, as we have just seen, it was thought that this information could not explain how the mind comes to perceive objects at a distance. Surprisingly enough, in her original article Kitcher claimed that this fact *alone* explains why Kant assumed that our sensations are non-spatial. Kitcher does of course recognize that Berkeley proposed an alternative account of depth-perception in his *New Theory of Vision*—according to which the mind learns to perceive the distance of objects by associating visual sensations with tactile sensations—but she argues that this account was revealed to be inadequate by Leibniz's discussion of the relation between tactile and visual sensations in the *New Essays*. But even if this is true, it is clear that Kitcher's original reconstruction is totally insufficient, for all that it shows, at best, is that Kant was a nativist about depth perception; but even

Generally speaking, whenever the spatial characteristics of the things we perceive through sight differ from those of the images projected on the retina, a natural judgment is supposed to have intervened to modify the information initially received on the retina in such a way that the resulting visual percept accurately represents the spatial characteristics of the object we see. In other words, the role of a natural judgment is to supplement the information initially provided by the images formed on the retinae so that the resulting visual percepts are accurate, and this is made possible by virtue of the fact that the visual system, through its own innate constitution, is in possession of certain information which guides the mind when processing the information given through the senses. Malebranche characterizes these natural judgments as unconscious acts which correct the defects of the images produced on the retina according to the principles of natural geometry. Among the various perceptual cues which enable us to perceive distance, the “first, most universal, and sometimes the surest means we have” is based on the principles of geometry. The light rays emitted by an illuminated object diverge from one another in straight lines; when our eyes converge upon a single object in space, that object is perceived as the focal point from which these diverging light rays meet, and the size of this convergence angle is a function of the distance between the end-points of the rays which enter each eye and their source. We perceive an object’s distance, then, by means of a natural judgment which calculates the size of this convergence angle: the larger the angle, the closer the object, etc.⁴⁵² Likewise, the sides of a cube are seen to be equal since we judge that “the faces of the cube, that are farthest away and that are viewed obliquely should not form images on the fundus of the eye as big as those formed by the

if the perception of depth is not given by sensation alone, that does not mean that the mind is not originally given two-dimensional images through sensation, and, in that case, there is nothing that appears to rule out the possibility that the mind forms a representation of space from this sensory input. Perhaps recognizing this gap, Kitcher, *Kant’s Transcendental Psychology*, pp. 40-41 argues that once it has been granted that distance is not immediately registered in the visual system, one will also not be able to explain the perception of size and shape. For example, although the actual size of an object is independent of its distance from an observer, the size of the image it produces on the retina does vary with distance, so that if we cannot perceive the distance of an object through the information given by sensation, we also cannot perceive its size. Kitcher then gives similar arguments to show that each of the spatial properties of the objects we perceive through sight vary according to their distance from an observer. And so, from the fact that depth is not immediately given in visual sensation, Kitcher concludes that our visual system cannot provide us with *any* information regarding the dimensions of the objects in our visual field, and that our visual sensations can thus only differ in qualitative, rather than quantitative, magnitude. But, as Falkenstein, *Kant’s Intuitionism*, pp. 400n24, 406-407n14 has pointed out, Kitcher’s reconstruction fails to recognize the distinction between real and apparent magnitudes, where the latter refers to the size and shape of the image registered on the retina, while the former refers to the actual size and shape of the object which causes that image. While it is true that the visual image of an object varies according to the distance which separates the visual apparatus from the object itself, it does not follow that the size and shape of an object is not registered in the visual field *at all*, for the retinal images do have extensive magnitude, even if the size and shape of these images is not the same as the objects which are ultimately perceived through sight. At best, Kitcher’s argument only shows that the information originally given by the senses is not sufficient for determining the real magnitude of an object, not that our sensations lack extensive magnitude altogether. And since the distinction between real and apparent magnitudes was widely acknowledged by Kant’s contemporaries, one cannot claim that Kant was entitled to infer that our sensations are non-spatial on the grounds that our ability to perceive real magnitude is not given immediately through sense.

⁴⁵² *Search*, I.9,iii, p. 41.

faces that are closer.”⁴⁵³ The different sides of the cube project images which vary in size according to their distance, but once the difference in distance between the sides of the cube have been factored in, the sides of the cube are then perceived as equal. Similarly, although the size of a retinal image changes in proportion to the distance from which an object is perceived, an object moving closer to us will not appear to change its size because the mind is able to judge its distance; this judgment corrects the information initially recorded on the retina and is what causes us to perceive the object as closer or farther away, rather than larger or smaller.⁴⁵⁴

Most interesting of all is that natural judgments are also invoked to explain how sensations of color, smell, taste, etc., come to be perceived existing outside the mind on the surfaces of external objects. The objects we perceive with our senses have an array of sensible qualities, but Malebranche, alongside most of his contemporaries, distinguishes between those which genuinely belong to bodies and those which do not. The only qualities which genuinely characterize bodies are extension, size, shape and motion. The other qualities we perceive—colors, smells, tastes, warmth, etc.—are not real features of bodies, but are instead sensations that only exist as modifications of the mind. The warmth we feel when our hands are near a fire does not exist in that fire; the colors we see are not actually present on the surface of bodies; and the sweetness I taste is not in the sugar or on my tongue. But although these sensations do not genuinely belong to or inhere in bodies, we do perceive them in the bodies we represent with our senses: although sensations like color, warmth, taste only exist as modifications of thought, “*we ordinarily attribute our sensations to objects whenever they act on us through the motion of invisible particles.*”⁴⁵⁵ For Malebranche, the reason we are tempted to believe that sensations like heat, color, smell (etc.) exist in bodies is because our sensations are constantly conjoined to natural judgments; these natural judgments are what cause us to believe that our sensations have external reference, or that our sensations exist outside us on the surfaces of objects. The reason we come to refer our sensations to things existing outside us is because natural judgments localize these sensations in different parts of space by *projecting* them outwards onto the bodies we perceive outside us with our senses, so that we perceive these bodies as colored, hot, smelly, etc.⁴⁵⁶ The mind has a sensation after certain motions in the nerves have been communicated to the brain; these sensations, which themselves only exist as modifications of the mind, are then joined to a natural judgment and projected outwards onto the bodies we perceive with our senses. A natural judgment thus modifies the sensation by projecting it outwards onto the object in space which initiated those motions so that we experience the sensation extended over

⁴⁵³ *Search*, I.7.iv, p. 34.

⁴⁵⁴ *Ibid.*

⁴⁵⁵ *Ibid.*, I.16.iv, p. 75

⁴⁵⁶ As Malebranche *Search*, I.12.v, p. 6 notes, it is precisely because sensations are localized in space that many are mistakenly led to believe that these sensations exist in the objects that cause them. But the senses were given to us for the preservation of our bodies, not as a source of knowledge, and that means we should not believe our sensations exist in bodies even if they appear to. Natural judgments were given to the mind by God as a way for the mind to preserve the body to which it is united.

the parts of that body: the color we perceive is projected outwards onto the surfaces of the bodies we see, the sensation of warmth is perceived in the fire, and the feeling of pain is felt in my hand.⁴⁵⁷

Natural judgments are thus responsible for localizing sensations in the regions of space occupied by the bodies which occasion those sensations and are what cause them to be represented in a location in space; they also enable the mind to sense bodies existing outside itself. In the absence of a natural judgment, our sensations would lack any reference to external objects: we would not feel a pain in our finger, or see a color on the surface of an object, but would instead experience these sensations as modifications of the mind—they would all be localized, so to speak, in the mind.⁴⁵⁸ It is thus crucial to distinguish between the sensation proper—or the sensation as it exists in itself prior to the intervention of a natural judgment—and the sensation-judgment complex—or how that very same sensation comes to be represented after being modified by the natural judgment which projects it onto a region of space. The sensation itself, prior to the intervention of a natural judgment, only exists as a modification of the mind. As modes of a thinking substance, sensations cannot have any spatial attributes, such as extension, size and shape, since this would entail that the subject of these states also possess these attributes, which is inconsistent with Cartesian Dualism. What this means is that sensations themselves, considered independently of any natural judgments, are non-spatial, purely phenomenal mental states; without the intervention of natural judgments, we would not represent our sensations in spatial locations. Malebranche claims that the original non-spatiality of sensations is also confirmed by the fact that we can contemplate a sensation independently of any relation to space, or without reference to the body that it is referred to, and that when we do so we will discover, upon a careful analysis, that the sensation itself cannot be characterized by extension, shape, motion or any other spatial attributes. Malebranche claims that this is best illustrated by considering sensations of pleasure and pain, or emotions like anger, hunger, love, hate (etc.). Such examples, he claims, will make it easy to recognize that sensations only exist in the mind and do not characterize bodies outside us. When I prick my finger with a needle, I have a sensation of pain; but no one thinks this pain resembles anything that exists in the needle. And the feeling of pain, considered on its own, in abstraction of any reference to the location in the body where it appears, does not possess any spatial attributes; it is not extended, it has no shape or size, and does not exist in any spatial location. It simply does not make sense to describe a sensation of pain as having a certain size or shape, length, width or

⁴⁵⁷ Malebranche, *Search*, I.10-14, pp. 48-70 explains that the perceptual experiences produced by natural judgments differ insofar as those which cause us to perceive the size, shape, and distance of objects are “true”, whereas those which cause the mind to localize sensations in space, like heat in the fire or pain in the hand, are “false.” The reason the former are true is because they more or less accurately depict the qualities which genuinely exist in those bodies (i.e., their size, shape, etc.); the latter, however, do not, since no sensation genuinely exists on the surface of an external body or in any location of space.

⁴⁵⁸ It is important to note, however, that this does not imply that sensations are literally located in the mind in the sense that they coexist in the same part of space which the mind occupies. The mind is itself non-spatial and does not exist in any location. The only sense in which sensations are “located” in the mind is just that they exist as modes inhering in a substance.

breath, as something square or round, long or short, etc. And, according to Malebranche, what is true for the example of pain generalizes to every other sensation, like warmth, smell, taste, sound and, most interestingly, color. All these qualities have the same status as the sensations of pain and pleasure, although it is easier to be misled into thinking that these other sensations genuinely exist in space as the real qualities of bodies.⁴⁵⁹

As Malebranche acknowledges, the claim that sensations themselves do not exist in space, but are all localized in the mind prior to their being modified by natural judgments, appears to conflict with experience: when I feel a sensation of pain after injuring my hand, the pain is experienced occurring in the same part of space where my hand is. But the appearance of a sensation in a region of space does not entail that the sensation is actually located there. As Malebranche notes, it is common for an amputee to have sensations which appear to occur in the limb that has been amputated: even after someone's hand has been amputated, they might still feel a sensation of pain which appears to occupy the same location in space that was formerly occupied by their hand.⁴⁶⁰ But the mind does not exist in the region of space where it feels the pain, since it does not exist outside the body it is united with, and no part of its body exists in that part of space; and that means that the sensation of pain cannot exist in that space either, even if it appears to, since that would require that it exist in a part of space where the mind experiencing that sensation does not exist. No mental state can exist apart from the mind to which it belongs, and so although the sensation appears in that part of space, it does not actually exist there. For Malebranche, what happens in the case of an amputee experiencing a sensation of pain in a region of space outside his body is no different from what takes place when a non-amputee experiences pain in a part of their body: both experience a pain which appears to occur in a certain region of space, and the only difference is that one has a hand and the other does not, but since the pain experienced by the amputee does not exist in the space formerly occupied by his hand, the same must

⁴⁵⁹ Malebranche, *Search*, I.10.v, p. 52. Steven Nadler, *Arnauld and the Cartesian Philosophy of Ideas* (Princeton University Press, 1989), pp. 123-126 claims that Arnauld was another Cartesian who explicitly endorsed the claim that the mind projects sensations onto bodies outside itself.

⁴⁶⁰ *Search*, I.10.iii; LO, p. 50. Malebranche appeals to the existence of phantom pains in order to reject the idea that the mind is present in every part of the body. Mental states appear to occur all throughout the body, but since a mental state cannot exist unless there is a mind which is the subject of that state, if sensations exist in different parts of the body, so too does the mind. The problem, however, is that if the mind is diffused, so to speak, throughout the space occupied by the body, then it would have to be located in different parts of space and share in the extension of that body, and that would appear to imply that the mind is extended—an unacceptable result for any Cartesian. According to Malebranche, the mind is not diffused throughout the body, but instead resides “in that part of the brain to which all the sense organs lead” (ibid). The mind is connected to the body by being “present” in the brain, but this does not mean that it literally occupies a location in the brain; rather, the mind resides in the brain in the sense that all the stimuli that come from different parts are united there in the ‘common sense’, and the mind is “aware” of what is happening in the outer world by virtue of its connection to that part of the brain.

When I say that it *resides* there, I mean only that it is aware of all the changes taking place there in relation to the objects that cause them, or customarily cause them, and that it perceives what happens outside this part only through the agency of the fibers ending there, or if you wish, through the agency of the different reactions of the spirits contained in these fibers. (ibid)

As we saw above, Kant appears to defend a similar view on the relation of the mind to the body in *Dreams of a Spirit Seer*, Ak 2:324-325 and throughout ID.

also be true for the non-amputee. If, that is, phantom pains are perceived in regions of space where they cannot actually exist, then the same should also be true in the normal case when a non-amputee experiences a pain in his hand, for the phenomenon is the same in both cases.⁴⁶¹ And in both cases, it is a natural judgment which explains why a mental state which is not in space is projected onto an object which does exist in space. And Malebranche thinks this is what also generally occurs for all our other sensory perceptions: colors, smells, and sounds are *represented* in space, but they do not *exist* in those locations any more than the feeling of pain experienced by an amputee exists in the empty region of space formerly occupied by his hand.

There appear to be two basic arguments given to show that the sensations originally given through affection are non-spatial. There is, one might say, an a priori argument, whereby the non-spatiality of sensations is inferred from the immaterial nature of the mind, and an a posteriori argument, in which the same conclusion is supposed to be established through introspection by reflecting on the intrinsic content of these sensations (where 'a priori' and 'a posteriori' are being used in the traditional sense to denote the difference between an inference which proceeds from ground to consequent or from consequent to ground). The a priori argument begins with the assumption that the mind is an immaterial substance, and that sensations of color, smell, taste (etc.,) are not modes of bodies, but are instead modes of thought: it is then inferred that, as modes of an *immaterial* substance, sensations cannot be extended or admit of any spatial attributes, since that would entail that the mind is also extended or spatial, contrary to hypothesis. The second, a posteriori argument, is based on introspection: the basic idea, it seems, is that if we carefully reflect on the content of our sensations, we will discover that they cannot be characterized in terms of extension, position, shape and size, or any other spatial attributes. The first argument is in many ways the more straightforward of the two, but, since it is beyond the scope of the present discussion to discuss the various arguments in support of substance dualism, I will not attempt to evaluate the merits of this first argument any further. Instead, we will put this argument aside so as to focus our attention on the second, a posteriori argument, which in many ways is also the more interesting of the two. One especially puzzling feature of the argument is that sensations are supposed to have a kind of dual aspect, since they *exist* as mental states but are *represented* as the sensible qualities of bodies. This dual aspect makes the argument from introspection rather difficult to evaluate. The problem is that we are asked to consider what sensations are like, as states of the mind, even though these same sensations generally only appear to us when they come to be represented, by means of natural

⁴⁶¹ According to Malebranche, when damage occurs in the hand of a non-amputee, the stimuli produced in that part of the body send a signal which travel up the nerves to the brain. After a limb has been amputated, the nerves that formerly connected the hand to the brain now only connect the stump to the brain; but if the stump of the hand is stimulated in the right way, it will cause the *same* motion to occur through the nerves, and since these stimuli will be the same as those that would have been produced had the motion originated in the hand rather than some intermediate point, the effect they produce will also be the same. That is why, he claims, the amputee will still locate the damage as occurring in a certain part of (now empty) space. Cf. Descartes, *Meditations*, AT VII 77; CSM II 53.

judgments, as sensible qualities of objects in space. But if these sensations are always perceived in space, then why exactly should we be so confident that the spatial attributes of these sensations *as represented* do not genuinely belong to them, but are solely the product of the mind's interpretation of these sensations? And if, as a matter of fact, these sensations are always represented in space, then how are we to inspect them as they are on their own, so as to discover their intrinsic content? Certainly some of the examples Malebranche gives of sensations which are allegedly non-spatial, such as the feelings of pleasure and pain, seem plausible; but it is far more difficult to say the same for other sensations, such as those of color or touch. Although Malebranche attempts to deal with this issue by arguing that, as sensations, they are no less spatial than the feelings of pain and pleasure, one might legitimately complain that this response attempts to *reinterpret* the phenomena as given by experience in the light of a hypothesis which appears to conflict with it.⁴⁶² Certainly at least *some* of the sensations which Malebranche identifies as mental states do appear to have spatial attributes: the colors that are perceived spread out over the whole surface of a body, or the sensations of touch we experience when running our hands along its surface, certainly appear to be spatial. But if Malebranche is correct, this is only because a natural judgment has intervened so as to modify the originally non-spatial sensory content given by affection so that it comes to be represented in space. But why not instead just infer that the sensations themselves are spatial?

Though the argument from introspection as wielded by Malebranche appears to be underdeveloped in certain respects, it is not unique to him. Versions of the argument were also put forward by others, perhaps the most notable of which include those that appear in Reid and Condillac, both of whom share the additional virtue of proceeding in a far more systematic fashion in their own expositions of the argument. Reid and Condillac alike make a point of emphasizing how difficult it is to determine the true origins of the mind's ideas. By the time the mind has attained the level of intellectual development required to undertake such an investigation, many ideas have become so mixed together with others—either through association by constant conjunction, or other types of judgments that are made very early in the course of our cognitive development, including,

⁴⁶² Thus, Malebranche seems to infer that colors must be non-spatial since they are modes of thinking substances rather than genuine qualities of external objects. But this might be construed as nothing more than a kind of special pleading. After all, if colors actually exist as states of an immaterial substance, then we should be able to at least conceive of these non-extended colors. And yet this seems to be impossible. Insofar as that is the case, one might be tempted to argue with Hume, *Treatise*, I.iv.5 that since colors are necessarily extended, and also modes of a thinking substance, it follows that the mind must also be an extended substance, contrary to what Malebranche assumes. Malebranche, *Dialogues on Metaphysics and Natural Religion* (Cambridge: Cambridge University Press, 1997), Dialogue V, does recognize that the sensations of color appear to pose a problem for his theory, since colors always appear to us spread out over the surface of extended bodies. But in spite of this he insists that colors must have the same status as other sensations, like pain: they are *represented* as the qualities of bodies outside us, but they only *exist* as modes of a thinking substance, and the only reason we perceive colors on the surfaces of bodies is because a natural judgment always intervenes as soon as the mind has a sensation of color by projecting it onto the surface of an external object. But aside from his assumption that the mind is immaterial, what makes Malebranche so confident that colors exist (and would be perceived) as un-extended states of the mind without the intervention of a natural judgment?

as Reid maintains, those given through the mind's own innate constitution—that it later becomes difficult to determine what each idea is originally like in and of itself, as well as how these various ideas might have first entered the mind.⁴⁶³ In order to overcome this difficulty, and discover the true nature and origin of the mind's ideas, both Reid and Condillac propose to investigate the mind systematically by first isolating each distinct source of cognition, starting with the simplest, and then examining each kind of idea associated with that source one by one. Sensation is identified by both as the most basic source of cognition, and the five senses are then all examined separately so as to discover which ideas are obtained from each deliverance of sense in abstraction of the others. In order to facilitate this investigation, Condillac famously introduced the hypothetical example of an insentient statue, which is imagined as a being “internally organized like ourselves, and animated by a mind deprived of every idea,” but which is initially not allowed the use of any of its senses; we are then asked to imagine the statue gradually receiving the use of each sense organ, one by one, starting with the sense of smell, and then proceeding to those of taste, hearing, touch, and finally sight.⁴⁶⁴ In order to discover the true origin and nature of the mind's various ideas, we are asked to carefully inspect the ideas that might enter the mind upon the activation of each sense organ, and what other ideas the statue would also be able to acquire by reflecting on those given immediately through sensation. Both Reid and Condillac begin with the sensations given to the mind through the sense of smell:

Suppose a person who never had this sense before, to receive all at once, and to smell a rose; can he perceive any similitude or agreement between the smell and the rose? or indeed between it and any other object whatsoever? Certainly he cannot. He finds himself affected in a new way, he knows not why or from what cause. Like a man that feels some pain or pleasure formerly unknown to him, he is conscious that he is not the cause of it himself; but cannot from the nature of the thing, determine whether it is caused by body or spirit, by something near, or by something at a distance. It has no similitude to any thing else, so as to admit of a comparison; and therefore he can conclude nothing from it, unless perhaps that there must be some unknown cause of it.

It is evidently ridiculous, to ascribe to it figure, colour, extension, or any other quality of bodies. He cannot give it a place, any more than he can give a place to melancholy or joy; nor can he conceive it to have any existence but when it is smelled. So that it appears to be a simple and original affection or feeling of the mind, altogether inexplicable and unaccountable. It is indeed impossible that it can be any body: It is a sensation; and a sensation can only be in a sentient thing.⁴⁶⁵

⁴⁶³ Condillac, *Treatise on Sensation* (in *Philosophical Writings of Etienne Bonnot, Abbe de Condillac*, Vol. 1 Hillsdale NJ: Lawrence Erlbaum, 1982–87), pp. 155-158 & Reid, *Inquiry* (University Park: Pennsylvania State University Press, 1997), Ch.1, Sec.ii, pp. 12-16. The Molyneux experiment is often cited as an especially powerful example of this phenomenon.

⁴⁶⁴ Condillac, *Treatise*, pp. 155-158 & p. 170 Reid, *Inquiry*, Ch. 2, Sec. i, pp. 25-26 adopts a similar strategy.

⁴⁶⁵ Reid, *Inquiry*, Ch. 2, Sec. ii, p. 47. Condillac, *Treatise*, p. 175 gives a similar analysis.

If we focus on what someone who had no faculty of sense other than smell would be conscious of when affected for the first time by some particular body, like the rose, we would not discover any of the properties characteristic of that body, or indeed of any other: if we inspect the contents of the sweet smelling sensation produced by the rose, we will not be able to discover any ideas of shape, size, extension, place or any other qualities that characterize a body. The sensation of smell we are conscious of cannot be anything extended, since it makes no sense to ask about its dimensions, or to describe it as three feet wide, two feet long, etc.; it has no figure, since it is absurd to describe it as triangular or square, or as having any other shape; and it also occupies no location in space. We are simply not aware or conscious of any of these qualities when we inspect the content of that sensation. Reid suggests that these sensations have the same status as inner feelings, or emotions, like pleasure and pain, melancholy or joy: in the same way that it is absurd to suggest that melancholy, or a feeling of pain, is extended, has a shape and size, or is located in some part of space, so too is it absurd to maintain that the sweet smell one is conscious of in the presence of a rose is something which admits of any spatial attributes—this sensation of smell is no more extended or located in space than any of these other states.⁴⁶⁶ The same conclusions are obtained when Reid and Condillac turn to the sensations given through taste and sound, which are no more spatial than those given through smell; none of these sensations can give the mind an idea of anything extended or spatial, and since they are originally experienced as modifications of the mind, none of them can give the mind any idea of external objects either.⁴⁶⁷

⁴⁶⁶ Note that these sensations are *like* feelings of pleasure and pain, but that doesn't mean they are nothing more than feelings of pleasure and pain (contrary to what Berkeley argues in Bk. I of *Three Dialogues*).

⁴⁶⁷ See Reid, *Inquiry*, Ch. 3 & Ch. 4.i and Condillac, *Treatise*, p. 204, 208 & 210. Condillac adds that nothing changes when the statue has both a sense of smell and hearing, or both hearing and taste (etc.), for combining the products of these sense modalities cannot provide the mind with any idea of space if none of them can do so individually (Cf. Ch. 9.1, 3.1). Another early modern who asserts that the sensations of taste, smell and sound are non-spatial is Hume, *Treatise*, I.iv.5 It is worth noting that although Reid, Condillac and Hume all agree that the sensations of smell, sound and taste are intrinsically non-spatial, they recognize that this is sometimes obscured by the fact that these sensations often come to be associated with objects that *are* perceived in space, and that this can easily mislead one to suppose that these sensations are spatial after all. Thus, while the sensation of sound produced by a coach is supposed to be non-spatial, we find that we are generally able to judge the direction of that object, as well as its distance according to how loud or faint the sensation is. Likewise, as Hume observes, many believe that the sensations of taste and smell coincide with the locations of certain bodies which are extended in space: that the relish we experience when we taste an olive is *in* the olive, or that the sweetness we smell when in the proximity of a rose fills the surrounding space. But these examples should not lead one to suppose that the ideas of distance and location are intrinsic to these sensations, or, even worse, that these sensations exist in the same locations as certain extended bodies in space. As Hume argues, this is simply absurd since nothing intrinsically aspatial can exist in a place, or be spread out over the surface of a body without also being extended. If the sensation of taste were to exist in the same place as the olive, then it would either have to exist “in every part of it or in one only”; but it cannot exist in a single part of the olive (“For experience convinces us, that every part has the same relish”), nor can it exist in every part (“for then we must suppose it figur'd and extended”), which leads us to the absurd conclusion that it is “in a certain place, and yet is not there”, or that “it fills the whole without extension, and exists entire in every part without separation.” The only reason many come to form these beliefs is because the mind has a tendency to associate distinct sensations when they have been observed constantly occurring together in past experience. In other words, it is only by virtue of the fact that certain smells, tastes and sounds are repeatedly observed to be connected with the ideas of

It is important not to overstate the similarities between Reid and Condillac (or with Malebranche for that matter) for in spite of their common methodological approach, as well as their agreement on the non-spatiality of the sensations of smell, sound and taste, their agreements are balanced out by an equal number of important disagreements. Among these differences, of which there are many, the most relevant for our purposes pertains to the status of innate ideas. As a sensationist, Condillac rejects the existence of innate ideas, averring instead that all the mind's ideas must ultimately be traced back to sensation as their original source. Reid, in contrast, allows that *some* of the mind's ideas, including, most importantly, certain spatial ideas, could not have been acquired from sensation, but must instead have been given to the mind as part of its own innate endowment, even if it does not become explicitly aware of these ideas unless it first has certain sensory experiences. Partly as a result of this basic disagreement, Reid and Condillac part ways in their analyzes of the sensations of touch and sight. Whereas for Condillac these sensations are the very ones which enable the mind to first form an idea of space, Reid argues that the sensations of touch and sight cannot, by themselves, provide the mind with any idea of space since these sensations are no more spatial than the sensations of smell, sound and taste. Since, as a sensationist, Condillac presumably could not have had much of a positive influence on the development of Kant's own views in ID, whereas Reid and Kant, as nativists, both agree that sensations are originally non-spatial and that the idea of space cannot, therefore, be acquired by abstraction from sensory experience, in the remainder of this overview we will focus our attention on Reid's development of the argument from introspection. Although a closer examination will ultimately reveal that there are also crucial differences between Kant and Reid, an

certain extended bodies in different parts of space, that the mind comes to associate these sensations with those bodies. In this way, the mind is led to form the belief that these sensations are somehow contained in those bodies, or that the ideas of space associated with these sensations are actually intrinsic to them. Thus, the sensation of taste is associated with the olive only because these two things are constantly conjoined as cause and effect, but this does not mean that the sensation is actually contained in that body. Likewise, the mind *learns* to judge the distance of an object by the volume of the sound it produces since it is taught by experience that the sounds objects produce when they are near are generally louder than those they produce when far away; but though the mind may subsequently come to believe that the notion of distance is intrinsic to these sensations, no such idea can actually be obtained from the sensations, for it is only *after* the mind observes that certain sensations are constantly conjoined with certain ideas of distance that these two ideas come to stand in any connection with one another. See Hume, *Treatise*, Liv.5. Cf. Reid, *Inquiry*, Ch. 6, sec. viii, p. 99 & Ch.5, sec. i, pp. 49-50; Condillac, *Treatise*, pp. 267-273. Of course, what is still presupposed is an explanation of how the mind is able to form those ideas of body and space which are associated with the sensations of smell, taste and sound: obviously the mind could not associate a certain auditory sensation with the carriage, or the taste with the olive, unless it first has the ability to perceive these other objects, and thus, has already obtained the ideas of distance, extension, and space (etc.,) in some other way. In other words, the ability to associate particular sensations of smell, taste and sound with particular bodies in space, presupposes that the mind can already perceive extended objects in space. But it is at this point that Reid, Condillac and Hume—who otherwise agree that the sensations of smell, taste and sound are non-spatial, and that they come to be associated with particular bodies in space through constant conjunction—part ways, since they each provide a different answer to the question of how the mind originally comes to perceive extended bodies in space: whether it is by means of certain ideas suggested to it by virtue of its own innate constitution (Reid), or because the sensations originally given through sight and touch immediately present to the mind a collection of tangible and visible points arranged in space (Condillac and Hume).

overview of Reid's account will nevertheless prove to be important for understanding the motivations which seem to have led Kant to his own account in ID.

Reid's account of the origin of the mind's idea of space is developed in light of a fundamental distinction which he introduces between sensation and perception, and a word needs to be said about this before we turn to his discussion of the sensations of touch and sight. For Reid, perceptions are mental states with intentional content; these states are akin to beliefs, and they can refer to external objects that exist independently of the mind. Sensations, on the other hand, are nothing more than feelings in the subject which do not represent anything outside themselves; as states of an immaterial substance, all the mind's sensations are non-spatial, and they neither refer to external objects, nor do they resemble them in any way. However, sensations do play an important role in empirical cognition since they are responsible for "suggesting" certain other ideas which, though distinct from these sensations, are nevertheless connected with them. Sensations *suggest* these ideas in the sense that, as soon as the mind has a given sensation, it immediately forms a certain idea, or perhaps a belief which contains that idea as one of its elements. This connection is not established by past experience, nor for that matter are the ideas identical to what is given by sensation, for a careful examination and comparison of the two will reveal that it is impossible to discover the content of the idea by inspecting the qualities of the sensation. Instead, sensations and ideas are lawfully connected to one another by virtue of the mind's own innate constitution, which causes it to immediately form certain ideas, which are implicitly present in the mind from birth, upon the occasion of certain attendant sensations. Among the various ideas which are supposed to be innate, Reid includes the ideas of extension, figure and space. These ideas are originally suggested to the mind by tactile and visual sensations. Like the sensations of smell, taste and sound, the sensations given by touch and sight are mental states which are intrinsically non-spatial; but in contrast to these other sensations, which never suggest any ideas of space or extension, when the mind has a visual or tactile sensation it is innately constituted to immediately perceive bodies that are extended in length, width and breadth, and which occupy distinct locations in space, even though the sensations themselves are neither extended nor localized in space.⁴⁶⁸

⁴⁶⁸ Reid, *Inquiry*, Ch. 6, Sec. xii, p. 124 claims that there are different laws of perception associated with each sense organ. The figure, situation and distance of external objects is suggested by the sensations given by touch; visual sensations suggest ideas of location and figure, but not distance; and the sensations of smell, taste and sound suggest neither figure, situation nor distance. It is only when the mind has tactile and visual sensations that it comes to perceive extended bodies occupying distinct locations in space. As non-spatial mental states of an immaterial subject, the mind will never discover any spatial ideas by inspecting the qualities of the sensations given through smell, taste and sound; nor, for that matter, do these sensations *suggest* any spatial ideas to the mind, unlike those of touch and sight. Nevertheless, the sensations of touch, smell, sound, taste and sight are alike in that they all suggest ideas of external objects with causal powers: when the mind has one of these sensations, it immediately forms a belief in the existence of an external object, as well as the presence of some quality or hidden power in that object, which is causally responsible for producing that sensation. These beliefs are not unique to the deliverances of any one sense organ, even if certain other ideas, like extension and space, are only suggested by the sensations given by touch and sight. But while these ideas are suggested by every sensation, they certainly cannot be discovered by inspecting the qualities of a sensation: since every sensation is a mental state, they are all

The arguments Reid advances in favor of this theory are based in large part on a systematic, painstaking analysis of the various sensations and ideas associated with sight and touch. Beginning with latter, Reid first observes that there are many different kinds of qualities revealed to the mind by touch, amongst which he identifies hot and cold, hardness and softness, roughness and smoothness, various kinds of pleasures and pains unique to touch (such as throbbing, itching, burning, etc.), as well as figure, solidity, motion, and extension.⁴⁶⁹ For some of these items, Reid simply extends the earlier analysis provided for the sensations of smell, taste and sound by applying it to those qualities which he deems to be nothing more than certain kinds of sensation: hot and cold, for example, as well as every kind of tangible pain and pleasure, are all alike non-spatial mental states, none of which either resemble or suggest any ideas of extension or space. However, Reid employs a different strategy when he turns to the other ideas associated with touch. Textures like hardness and softness, roughness and smoothness, as well as figure, motion, and extension are not mental states of a thinking substance, they are qualities, or states, of external bodies. But what Reid attempts to show is that although the ideas of these qualities are only revealed to the mind when it first has certain tactile sensations, these sensations are not what provide the mind with these ideas. Reid insists that there is a distinction to be made between the ideas we have of tangible qualities like hardness, figure, or extension, and the tactile sensations the mind experiences when it first comes to conceive of these qualities. Although these sensations always accompany the ideas—indeed, are so closely intertwined with them they are often confused with one other—Reid maintains that they must nevertheless be different since they can always be distinguished from one another in thought.

Reid illustrates his basic argument by focusing on the example of hardness, though he maintains that the result obtained by reflecting on this example can be easily generalized to the ideas of texture, as well as to figure, motion and extension.⁴⁷⁰ Hardness is defined as the quality a body has when its parts cohere in such a way as to resist being easily displaced from one another, thus preventing its shape from being readily deformed. But this idea, Reid argues, is not given by any sensation: the mind could never come to conceive of something as hard by attending solely to the sensations it has when touching a hard body. According to Reid, this is evident from the fact that if we carefully attend to what occurs in the mind when, for example, we press our hand against a table, all that we observe is a certain kind of feeling. As with many of the other feelings peculiar to touch, Reid notes that there is no name for this sensation, but one can perhaps best describe it as a feeling of pressure or tensivity. This feeling is so closely connected to the idea of hardness that it often goes unnoticed, but Reid insists that if we carefully focus upon the

alike mind-dependent entities, and so cannot give the mind any idea of something that exists outside the mind; likewise, the idea of causation involves the necessary connection between two distinct events, but since, as Hume observed, no such connection can be discovered by inspecting the qualities of our sensations, the idea of causation is not given to the mind when it inspects the contents of these sensations, but is instead merely suggested by those sensations.

⁴⁶⁹ Reid, *Inquiry*, Ch. v, Sec. 1, p. 54.

⁴⁷⁰ Reid, *Inquiry*, Ch. 5, Sec. iv, p. 62.

sensation alone, we will not discover the qualities of extension, figure or any other spatial ideas. None of these qualities are observed when we inspect the contents of that sensation: the tactile sensations experienced when pressing one's hand against a table, or leaning one's head against a pillar, are no more spatial than the sensations of sound, smell and tastes, or the feelings of pleasure and pain. But, if Reid is correct that introspection does not reveal these sensations having any spatial attributes, then they certainly cannot provide the mind with the idea of hardness since that idea is defined in terms of others which presuppose ideas of space (such as the idea of a change in the relative location of the parts of a thing, etc.). The mind does of course conceive of hardness when it has these sensations—or form a belief in the present existence of an external body which is hard—but it is only led to do so by virtue of its own innate constitution, not because this quality is revealed to it by the senses. As Reid puts it, the sensation of pressure is a natural sign which signifies, or suggests, the quality of hardness in a body, in that, whenever the mind has this sensation, it is immediately led to conceive of hardness, or, to form a belief in the present existence of an external body which it perceives as hard. But this sign is only related to its signatum by virtue of the mind's own innate constitution.⁴⁷¹ The connection is not based on any resemblance between the idea and the sensation, since they share no qualities in common with one another; nor is it inferred by means of a rational inference, since it is certainly possible that the mind could experience these sensations without ever forming the idea of hardness.⁴⁷²

According to Reid, what goes for the case of hardness, generalizes to the other ideas of touch, such as extension, figure, texture and location. In each case, the crux of his argument is that there is always a distinction to be drawn between the sensations of touch, all of which are non-spatial and only exist as states of the mind, and the mind's ideas of tangible qualities, like hardness, extension, and figure (etc.), which exist outside the mind as qualities of external objects in space.⁴⁷³ Consequently, though the sensations are always attended by these ideas, it is of the utmost importance to always distinguish the qualities that belong to the sensations from the ideas we have of the tangible qualities of body. The only reason many have failed to recognize this distinction, and thus been mistakenly led to assume that the mind obtains the ideas of extension, figure and location from sensations of touch, is because these sensations are natural signs which suggest these ideas as soon as the mind has the sensations, and since this connection has been present from infancy, it is often difficult to distinguish them from one another.⁴⁷⁴ But although they always occur alongside one another, Reid insists that they are nevertheless distinct: that the sensations we feel, and the qualities of hardness, extension and figure we conceive of, do not resemble one another anymore than an auditory sensation resembles the vibration of a body, or a sensation of warmth resembles the rapid motion

⁴⁷¹ Reid, *Inquiry*, Ch. 5, Sec. v, pp. 63-65.

⁴⁷² Reid, *Inquiry*, Ch. 5, Sec. ii, pp. 55-58. The argument is expressed more succinctly in Ch. 5, Sec. v, p. 64.

⁴⁷³ Reid, *Inquiry*, Ch. v, Sec. 6, pp. 65-67 presents an argument by cases for the claim that sensations cannot give us any ideas of extension, figure or space.

⁴⁷⁴ Reid, *Inquiry*, Ch. v, Sec. 5, pp. 63-64.

of particles.⁴⁷⁵ The mind is just so constituted that, by virtue of its own innate endowment, the un-extended, shapeless, non-localized sensations given by touch, immediately suggest to it the ideas of extension, figure and location.⁴⁷⁶

A similar theory is advanced for visual perception, where Reid, once again, introduces a distinction between the non-spatial sensations which are given to the mind when certain stimuli affect the visual system, and certain other ideas which, though immediately suggested by those sensations, are not derived from them, but are instead given by virtue of the mind's own innate constitution. Included among these ideas are those of extension, figure and location, all of which refer to the qualities of bodies. Through sight, the mind perceives extended bodies, of various shapes and sizes, located in different parts of space, but these visual perceptions cannot be accounted for solely

⁴⁷⁵ Reid, *Inquiry*, Ch. v, Sec. 2, p. 57 & Ch. v, Sec. 6, p. 65.

⁴⁷⁶ Lorne Falkenstein, "Reid's Account of Localization", *Philosophy and Phenomenological Research* Vol. LXI, No.2 (Sept. 2000), pp. 315-316 raises the objection that Reid never manages to explain how the mind comes to conceive of the locations of objects in space through touch. That some such explanation should be forthcoming is evident from the fact that when, for example, we lean our head against a pillar, or touch a stone, the mind not only has a sensation which suggests hardness, it also perceives this quality as being situated in a particular location in space (the pillar is located against the side of my head, the stone is in my hand). But why, exactly, do we perceive the pillar in one location, and the stone in another? According to Falkenstein, the only place in the *Inquiry* where Reid even hints at an explanation is Ch. 6, Sec. 12, p. 125, where he acknowledges that a sensation of pain, which only exists in the mind, is generally connected with a perception of some part of the body—namely, the part where the disorder causing that sensation is occurring—and proposes that the sensation *itself* suggests this location

The sensation of pain is, no doubt, in the mind, and cannot be said to have any relation, from its own nature, to any part of the body: but this sensation, by our constitution, gives a perception of some particular part of the body, whose disorder causes the uneasy sensation. If it were not so, a man who never before felt either the gout or the toothach, when he is first seized with the gout in his toe, might mistake it for the toothach.

But if Reid is asserting that the location of the affected part of the body is directly suggested by the sensation itself (viz., "*this sensation...gives a perception of some particular part of the body*"), then he is surely mistaken. As Falkenstein argues, one cannot explain how the mind comes to localize objects through touch by appealing to the intrinsic qualities of our tactile sensations, or by asserting that there is some particular sensation which distinguishes, say, the hardness I feel on my left from the hardness I feel on my right, for the qualities of a sensation may remain invariant regardless as to whether it is felt on my left or my right—when I press the table with my left hand, surely it doesn't *feel* any different than when I press it with the same degree of force with my right. Thus, although Reid seems to acknowledge that we localize objects through touch, he never explains how it is that the mind comes to do so. Even worse, what these examples also seem to suggest is that we experience our tactile sensations disposed alongside one another in different parts of space, and that when we experience a number of these sensations at the same time, we also localize them relatively to one another. As Falkenstein *ibid*, p 316 notes, this even appears to be true for the pleasures and pain that belong to touch:

And I localize the hardness relative to other hard, soft, rough, smooth, figured, and movable objects I may be feeling at the same time. Indeed, I even localize these objects relative to my pains and pleasures. For, while Reid may be right that no one supposes that the pain is in the splinter, I do suppose that it is under my fingernail rather than in my head or on my back, and insofar as I do this I localize the pain relative to the other feelings of heat and cold, and the other itches, aches, twinges and feelings of pressure I may be experiencing in other parts of my body at the same time.

This poses a serious problem for Reid's account of touch, since it suggests that these sensations are spatial: "while Reid may be right that there is no *individual* tactile sensation that exhibits qualities of extension, shape or size, Hume's intuitionist position, that our individual tactile sensations are disposed alongside one another in space in simultaneously given aggregates goes strangely unnoticed" (*ibid*).

through the information given by sensation. According to Reid, the only sensations proper to sight are sensory qualities like blue, green, red, yellow (etc.), and these qualities, he claims, are one and all non-spatial mental states which neither exist on the surfaces of bodies, nor do they resemble any of their other qualities.⁴⁷⁷ The qualities of body perceived through sight are not given to the mind by these visual sensations, but are instead *suggested* by the order in which light rays are projected on the retinae.⁴⁷⁸ Thus, the location of an object in space is suggested to the mind by the order in which the light

⁴⁷⁷ It should be noted that Reid does not refer to these sensations as *colors*, since he uses that term to instead refer to the real qualities in bodies which are causally responsible for producing those sensations—namely, the surface properties of a body which cause it to absorb certain wavelengths of light and reflect others. See Reid, *Inquiry*, Ch. 6, Sec. iv-vi, pp. 85-95.

⁴⁷⁸ Falkenstein, “Reid’s Account of Localization”, p. 318 plausibly suggests that the reason why Reid appeals to these additional factors, rather than simply asserting that color-sensations suggest the location and figure of the perceived object, in the same way that the feeling of pressure suggests the idea of hardness, is because one and the same color sensation can be caused by “objects of vastly different shapes, sizes and positions”, so that “no particular color sensation could suggest just one figure or position to the exclusion of all the others.” In other words, since one and the same color-sensation can be caused by a body having any number of different shapes and sizes, and can come from a body occupying many different locations in space, there must be some additional factor other than these sensations which is responsible for suggesting the location and figure of a body in space. This additional factor, according to Reid, is nothing other than the order of the illuminated points on the retinae. Reid notes that what we perceive through sight evidently depends in part upon the spatial characteristics of the images projected on the retinae. There is, after all, a rough one-to-one correspondence between the spatial outline of the illuminated points emitted by a visible object and the points of the retinal image. There is also a law-like connection between the two: while there is no resemblance between the hidden quality of body we call ‘color’ and the color-sensation that occurs in the mind, or any necessary connection which would enable one to infer a red-sensation from the material impression which causes it, there is both a resemblance and a necessary connection between the size and shape of the retinal image and the real figure and magnitude of the body in space which produces that image, for if we know the real figure and magnitude of a body, as well as its position and distance from the eye, the principles of mathematics enable us to infer the visible figure and magnitude of the image it will project on the retina, as well as how the shape and size of that image will vary according to the changes in the relative position and distance of the object from the eye. See Reid, *Inquiry*, Ch. 6, Sec. vii, pp. 95-98. This is not to say that Reid thinks that the mind comes to perceive, say, the real figure and magnitude of a body by explicitly performing any mathematical calculations upon the retinal image, even if there is a connection between the two which is based on the mind’s own innate constitution. Reid also recognizes that many of the spatial characteristics of the retinal image deviate from those of the object we ultimately perceive through sight: the orientation of the parts of the object we see is the reverse of the orientation of the points of the retinal image, which are inverted upside down and reversed from left to right when light is projected on the retina; the size and shape of the retinal image also diverges from that of the object perceived through sight, both because that object does not appear larger or smaller even though the size of the image changes with distance, and because the shape of the image varies according to perspective. Reid stresses however that the retinal image is not itself the object perceived through sight, it is merely that which *suggests* the shape, size and orientation of the object ultimately seen. When a material impression is made upon the retina, it functions as a sign which immediately leads the mind to form a perception of the figure, orientation and location of the object in space; not because this material impression is itself perceived, or because we infer the true shape and size of an object by means of some mathematical calculation performed upon the projection of points on the retina, but because of an innate law of the mind which leads it to immediately form these perceptions when it is stimulated in the right way. This is also not to say that the mind comes to perceive the *real* shape, size and orientation of objects solely by means of what is suggested to the mind by the retinal image. According to Reid, the immediate objects of vision which are suggested to the mind only represent the apparent magnitude of the bodies perceived in space; following Berkeley, Reid maintains that the real shape, size and orientation of those objects is something the mind only gradually learns to perceive over the course of experience by associating its visual and tactile sensations.

rays emitted by that object fall upon the different parts of the retina: when an impression is made on some part of the retina, the mind focuses its attention along the path pointing backwards in a straight line from the affected part of the retina to the object which caused that impression. In this way, the mind comes to perceive the affecting object's location, which is thus suggested to it by the order in which the parts of the retina are stimulated.⁴⁷⁹ The other qualities of body perceived through sight are, in turn, given by the same impressions which suggest an object's location. In regards to shape, Reid first notes that the real figure of a body consists in the situation which its parts have to one another, whereas the visible figure consists in the situation of the parts with respect to the eye; but when the mind comes to perceive an object's location, it also perceives the situation of its various parts, each of which make a distinct impression on the retina. And so, the stimuli which originally suggest the location of the affecting object also, in turn, suggest its real figure. A similar explanation is given for how the mind comes to perceive the true orientation of an object; and, though Reid does not explicitly mention it, it seems the idea of extension must also be suggested by the very impressions which originally provide the mind with a perception of an object's location, for if all the parts of an object taken together are what constitute its extension, then when the mind comes to perceive the different parts of an object in distinct locations, it also comes to perceive it as extended.

The order in which the parts of the retina are stimulated is thus an additional factor which Reid appeals to in order to explain how the mind comes to perceive extended bodies in distinct locations of space. Thus, for Reid, when a material impression is made on some part of the retina, there are two distinct kinds of ideas which are immediately suggested to the mind by virtue of the laws of its own innate constitution, both of which are necessary for explaining all the facts of visual perception. When external objects affect the visual apparatus, the mind has a sensation of some chromatic quality, like blue or red, which is neither extended nor localized in space, but which suggests the presence of an external object with a certain hidden power for producing that sensation; in addition, the mind also has a perception of the extension, figure and location of the affecting object, and each of these qualities are suggested to it by the order in which the parts of the retina are stimulated by the light rays emitted by that object. It should be noted that although Reid appeals to the spatial characteristics of the images produced on the retinae in order to explain the basic facts of visual perception, he stresses that these impressions can do nothing more than *suggest* the figure and location of the objects perceived by sight, and that by themselves they cannot provide the mind with an idea of space any more than tactile sensations can provide it with the ideas of hardness, figure and extension. The connection between the material impressions on the retinae and the mind's perception of extended objects in space is not based on any direct exchange of spatial information which is somehow transmitted to the mind by the body. The connection is established *solely* by means of an innate law of the mind's own constitution, according to which these material impressions are merely signs which signify the figure and location of the object's perceived by sight. Reid accordingly ridicules the suggestion that the mind comes to

⁴⁷⁹ See Reid, *Inquiry*, Ch. 6, Sec. vii-viii, pp. 95-103 & Sec. xi-xii, pp. 114-131.

perceive bodies in space by first *seeing* the order in which light rays are projected on the retinae, for this would entail that what the mind really perceives is just these retinal images, in which case the objects perceived through sight should have the same orientation as these images (i.e., be perceived upside down, and with their parts reversed from left to right), and also undergo the very same changes in shape and size as the images formed on the retinae. But the mind does not perceive these retinal images any more than it perceives the brain or the optic nerve; what the mind perceives are the objects existing outside its own body in space. A similar point is made in response to the prevailing supposition that the mind comes to perceive external objects when the images formed on the retinae cause certain material impressions to be transmitted to the brain, where a copy of these images is then supposedly traced either on the surface of the pineal gland, or the optic nerve, or whatever part of the brain is alleged to be occupied by the mind, viz., the sensorium of the soul. From this assumption it was common to infer that this brain image must be the proximate cause of a visual perception. But, as Reid argues, this cannot mean that the brain image is the very thing which the mind perceives through sight, for the material impressions in the brain are no more the objects of visual perception than the images on the retina. Even if we suppose that the retinal image produces certain vibrations in the nerves which lead to the brain, or perhaps causes certain fluids in these nerves to be mechanically transmitted to the sensorium, neither these vibrations nor these motions could resemble the object that is ultimately perceived through sight.⁴⁸⁰ Nor, for that matter, are the material impressions in the brain themselves sufficient as proximate causes of visual perception. Reid insists that there is no way that the visible figure or location of the images on the retinae can be conveyed into the mind by means of the material impressions in the brain. It is absurd to suppose that these impressions could somehow impress their figure and location upon the mind in the way that, for example, the design of a seal impresses a copy of itself on the wax it stamps, for this would be tantamount to conceiving of the mind as though it were something material. The notion that the figure and location of the images formed upon the retinae are somehow capable of being *impressed* upon the mind, suggests that the impressions in the brain could “by a kind of contact...[produce] similar impressions or images of objects upon the mind.”⁴⁸¹ But we are never conscious of any such impressions when we investigate the contents of our minds. And even if we were to *feel* these impressions, what would occur in the mind could not resemble the material impression any more than any other sensation: presumably the feeling produced by the material impression when it comes into contact with a certain part of the brain would be nothing more than a certain kind of tactile sensation, no different from what the mind experiences when it touches some object with one of its limbs, but since Reid thinks he has shown that these sensations are all non-spatial, they surely cannot resemble the location or figure of the material impressions in the brain. For Reid, the images produced on the retinae help to explain the facts of vision not because these images, or some copy of them in the brain, are what the mind directly

⁴⁸⁰ Kant also discusses, and then tentatively rejects, this account of the soul's relation to the body in *Dreams* Ak 2:325-326.

⁴⁸¹ Reid, *Inquiry*, Ch. 6, Sec. xii, p. 121.

perceives, or because these material impressions directly communicate any spatial information to the mind; instead, these impressions merely suggest the figure and location of the perceived object through an innate law of nature, in the same way that hardness, figure and extension are suggested by our tactile sensations.⁴⁸²

There is, of course, a great deal more that can be said about Reid in particular, or about the theories of sensation and the perception of space in the early-modern period in general, but the overview we have just provided will be sufficient for our purposes. Since we have just covered a lot of ground, at this point it is necessary to begin taking stock so as not to lose sight of our main task. Let me begin by explaining what I think has been established to this point. Our original goal was to explain why Kant might have been led to believe that the sensations originally given by affection are non-localized and non-spatial. The overview we have just provided demonstrates that this view was not only widespread among many of Kant's major predecessors and contemporaries, but also that it was based on certain arguments whose premises were accepted by Kant: namely, that the mind is an immaterial substance, that sensations are modes of thinking substances, and that sensations like color, smell, and taste are secondary qualities that do not genuinely exist in bodies. From these assumptions, there were two central arguments given to show that the sensations originally given by affection are non-localized and non-spatial: the first is an a priori argument that sensations must be non-spatial since the mind is an immaterial, un-extended substance, and sensations are modes of that substance; the second is an a posteriori argument that sensations must be non-spatial since a careful inspection of their qualities will not reveal any attributes such as extension, shape, size or location. Contrary then to Kemp Smith's accusation that Kant arbitrarily assumed that sensations are non-spatial, it seems more likely that Kant accepted this claim on the basis of these arguments which he found in his predecessors, and that perhaps the reason why he did not bother to explicitly argue for it himself is because he presumed, for better or worse, that his contemporaries would have already been familiar with many of the central arguments for this claim.⁴⁸³

What has also been revealed by our discussion is that many of the central components of Kant's theory of empirical cognition appear to be have been derived from that of his predecessors. Thus, what is indicated by our earlier discussion of Malebranche

⁴⁸² See Reid, *Inquiry*, Ch. 6, Sec. viii, pp. 100-101 and Sec. xii, pp. 120-125.

⁴⁸³ Rolf George, "Kant's Sensationism", pp. 234-241 also maintains that Kant was influenced by Malebranche, Reid and Condillac. According to George, what all these theorists share in common is the belief that sensations are non-intentional mental states (or what he calls "sensationism"): sensations are neither representational, nor are they ever the intentional objects of a representation, they are instead nothing more than states of the subject. While I agree that Kant's theory of empirical cognition was very likely influenced by these thinkers, my interpretation is rather different. On my view, both Malebranche and Kant distinguish between a sensation proper and the sensation after it comes to be represented outside the subject, at which point sensations become both representational as well as the intentional objects of these representations. Although sensations only exist as states of the subject, they are not represented as mental states. Moreover, on my reading sensations are the matter of intuition, whereas on George's interpretation, sensations are not contained in intuitions, though they do lead to the cognition of sensible objects in some way which George does not clearly specify.

is that his account of empirical cognition is quite similar to Kant's in a number of significant respects, so much so that it seems very likely that Malebranche must have been a source for Kant's own view. For both, sensations are first given to the mind when external objects stimulate the sense organs, and these sensations exist as modes of an immaterial substance. As mental states, sensations are non-spatial and have no intentional content, though they can be described in terms of the particular sensory content which they display, i.e., a certain smell, taste or color, etc. And, most importantly, both Kant and Malebranche distinguish between sensations as they originally exist in the mind, and the way these very same sensations come to be *represented* as a result of some innate cognitive activity—whether it be judgment or coordination—which is responsible for modifying these sensations so that they come to be represented outside the mind as the sensible qualities of objects in space. When subjected to this activity, these originally non-spatial, non-intentional mental states come to represent, and be represented as, the sensible qualities of bodies which exist outside the mind. Indeed, Malebranche's notion of a "natural judgment" appears to be closely related to Kant's notion of "coordination", or at least the kind of coordination involved in representing sensations outside the subject in spatial locations.⁴⁸⁴

The connection between Reid and Kant is somewhat more tenuous. On the one hand, the similarities appear to be quite significant. Like Malebranche, Reid agrees that sensations must be non-extended if they are states of an immaterial mind, and also that inspection of their content reveals that they are intrinsically non-spatial. Most importantly, both Kant and Reid trace the origin of our spatial ideas back to the innate constitution of the mind: when the mind is affected it is innately constituted to immediately form representations of bodies that are extended in length, width and breadth, and which occupy distinct locations in space, and these representations must be due to the innate constitution of the mind since the sensations originally given by affection are intrinsically non-spatial. In the case of visual perception in particular, Reid's account of localization is quite similar to Kant's, for both maintain that the order in which the parts of the visual apparatus are stimulated is the decisive factor which explains how the mind comes to localize objects in space: when an impression is made on some part of the retina, the mind focuses its attention along the path pointing backwards in a straight line from the affected part of the retina to the object which caused that impression. It is in this way that the mind forms a representation of an extended body in space, and also partially determines its shape, size, orientation and other spatial properties. On the other hand, there are also a number of important differences between Reid and Kant. In the first place, Reid draws a sharp distinction between sensation and perception, for whereas

⁴⁸⁴ Malebranche, *Search for Truth*, p. 745 also explains how the mind comes to represent through sight the locations of objects in space in much the same way as Kant does. Although these resemblances are striking, there are also some significant differences, of which the most important is that Malebranche describes the acts of mind responsible for projecting sensations as *judgments*. The problem with this is that, for Kant, judgments are acts of the *intellect*; but if sensations are organized in space through acts of judgment, it would seem to follow that the understanding is responsible for generating the representations of time and space, contrary to Kant's insistence that these concepts belong to sensibility.

perceptions are mental states with intentional content, sensations are *never* representational. For Reid, sensations are nothing more than feelings in the subject which *suggest* a belief in the existence of extended objects in space, but they never represent anything in bodies, nor are they ever any part of the intentional content of our sensory perceptions of those bodies. As a consequence of his distinction between sensation and perception, Reid maintains that bodies are never perceived by the mind *as* colored or smelly, or as having any of the other properties characteristic of sensation. In contrast, for Kant (and Malebranche), not only are sensations representational, they are also themselves the intentional objects of our empirical intuitions: sensations are not mere feelings in the subject which suggest spatial qualities of body, they are *themselves* projected outwards onto bodies where they are represented as the sensible qualities of appearances. The sensations of smell, taste and sound, as well as our tactile and visual sensations, are all localized in space, either on certain parts of the body—as when I represent a smell in my nose, or sweetness on my tongue, or tactile sensations on certain parts of my body—or as the qualities of the objects perceived in space, such as colors. Kant and Reid thus have quite different views about the role sensation plays in empirical cognition.⁴⁸⁵ And given these differences, the possible connections between Reid’s notion of “suggestion” and Kant’s notion of “coordination” are perhaps even more tenuous than the connection between the latter and Malebranche’s notion of a “natural judgment”. Moreover, although Reid’s account of localization is similar to Kant’s in the case of visual perception, Kant proposes a rather different account for the other sensory modalities. Whereas Reid thinks the sensations of smell, sound and taste are never localized, and that the only sensations which suggest spatial ideas are those of sight and touch, Kant maintains that all the mind’s sensations are localized in much the same way: namely, the mind is innately constituted to trace the sensation backwards in a straight line to the part of the body from which the material impressions in the brain originate.⁴⁸⁶ And whereas Reid fails to provide any explanation as to why tactile sensations are felt in one part of the body rather than another, Kant maintains that the mind localizes these sensations by projecting them onto whatever part of the body is responsible for originally receiving the material impression subsequently transmitted to the brain.⁴⁸⁷ Thus, even if there are

⁴⁸⁵ In this respect, Kant’s view appears to be superior to Reid’s. As Falkenstein, “Reid’s Account of Localization”, p. 319 notes, if Reid’s account of visual perception is correct,

none of us actually perceives in color...[but] this position does not reflect what we think we see. We think we see the qualities exhibited by our sensations to be localized on the visual field, not that the things we immediately perceive in the visual field differ only in their shape, size and position, and that they have hidden qualities which cause these sensations, but are no more on their surfaces than the stabbing pain is in the sword...nor are they believed to be, even by the vulgar.

In contrast, Kant allows that we perceive colors localized on the surfaces of bodies in space. Although these sensations only *exist* as states of the perceiving subject, after they are coordinated they come to be *represented* in certain locations outside the subject as the sensible qualities of appearances.

⁴⁸⁶ Reid, *Inquiry*, p. 100 & p. 125 denies that sounds and smells could be localized in this way since they do not travel in straight lines.

⁴⁸⁷ Falkenstein, “Reid’s Account of Localization”, p. 313n33 notes, however, that Reid seems to have adopted this view in *Intellectual Powers*, pp. 320b-21a, where he suggests that “the material impression on the body, rather than the sensations themselves, may be directly responsible for suggesting the localization of the disorder, in much the same way as the impressions on the retina.”

certain important ways in which Reid may have influenced Kant's views in ID, in other ways their theories of empirical cognition could not be any more different.⁴⁸⁸

The results of our discussion thus appear to be somewhat of a double-edged sword, for although there was a good deal of agreement that sensations are originally non-spatial, we have also seen that there is an equal amount of disagreement on a number of other important questions all of which are central to the main issue of how the mind comes to form a representation of space. Given these disagreements, there is no straight line we can trace from any one of these views to Kant himself, and to that extent, any attempt to reconstruct Kant's position by appealing to these sources will ultimately have to be somewhat speculative. Nevertheless, the importance of our exposition of Malebranche and Reid is that situates Kant's position in its proper historical context, and it also provides us with some of the likely motivations for certain aspects of Kant's theory which otherwise appear to be implausible or arbitrary. What I would like to do now is to put all this together and sketch out what I think is the most likely account of Kant's theory of the origin of the representation of space. What I hope to show in the remarks that follow is that there is a coherent line of thought which can be extracted from our discussion of Reid and Malebranche, and that this line of thought is maximally consistent with Kant's texts and is also at the very least philosophically tenable. Admittedly this reconstruction is somewhat speculative, but given the absence of any other direct textual evidence, it seems that this is the best that we can hope for.

Like Reid, for Kant the mind forms a representation of the locations of objects in space by virtue of certain laws which belong to it as part of its innate constitution. When external objects affect the sense organs, they produce material impressions in the nerves which are then transmitted to the brain, and the mind is innately constituted to then immediately form a representation of the spatial locations of external objects by tracing the path of these impressions backwards in a straight line in the direction of the objects which cause those impressions. Most importantly, in the case of visual perception, it is the spatial characteristics of the images produced on the retinae which are connected to the mind's representation of the object's perceived by sight. When an impression is made on some part of the retina, the mind focuses its attention along the path pointing backwards in a straight line from the affected part of the retina to the object which caused that impression. It is in this way that the mind comes to represent the affecting object's location. This connection between the material impressions on the retinae and the mind's representation of extended objects in space is not, however, based on any direct exchange of spatial information which is somehow transmitted to the mind by the body. The connection is established *solely* by means of an innate law of the mind's own constitution: when different parts of the retina are stimulated the mind is innately constituted to

⁴⁸⁸ Manfred Kuehn, *Scottish Common Sense* (McGill-Queen's University Press, 1987), pp. 176-177, 205-207, 242-244 argues that Reid was a likely influence on Kant's theory in the *Dissertation*, though he notes that the crucial difference between them has to do with their conflicting views on the status of sensations: whereas for Reid, the failure to recognize the distinction between sensation and perception is precisely what has led many philosophers down the path of idealism, Kant appears to embrace this conclusion. Cf. Falkenstein, *Kant's Intuitionism*, p. 385-386n1.

immediately respond by generating a representation of the spatial locations of the affecting objects, not because it directly inspects these material impressions by somehow perceiving the images formed on the retinae or brain, or because these impressions produce any sensations in the mind which are spatial, but rather because there is a law-like connection between the order in which impressions are disposed on the retina and the innate constitution of the mind which generates a representation of outer appearances in response to these stimuli. The other spatial qualities of the bodies perceived through sight are, in turn, connected to the same impressions which determine its location. Since different parts of the retina are all simultaneously affected, when the mind forms a representation of an object's location, it also forms a representation of the situation of its various parts, each of which makes a distinct impression on the retina. By tracing back each of the impressions made on different parts of the retinae, the mind thus generates a representation of an ordered array of points, and this, it seems, is what grounds its representation of extension. The order of the points on the retina is also what presumably grounds the mind's representation of an object's apparent shape and size, though some additional processing may be required to determine the real shape and size of an object.

A similar explanation is given for the representations the mind forms through touch, smell, taste and sound. The main difference is that whereas auditory and visual impressions enable the mind to form representations of regions of space *outside* its own body, in the case of our tactile, gustatory and olfactory impressions, the mind is innately constituted to form a representation of the human body it is united with in space, or, more precisely, the spatially extended parts of the sense organs in the body from which each of those impressions originate. In the same way that the stimulation of different parts of the retinae enable the mind to generate a representation of extended bodies in space through sight, the mind represents the different parts of its own body through touch, smell or taste by tracing the material impressions backwards in a straight line to the nerve or parts of the sense organ which originally received each of those impressions. The mind is somehow innately constituted to mark the place in the sense organs from which these material impressions originated, and this is what enables it to construct a representation of these parts of its own body. But the general idea for each of the sense modalities is essentially the same: in each case the mind is innately constituted to form a representation of extended bodies in space, or a certain volume of space, by responding to the way the material impressions which are received on the sense organs are then transmitted to the brain—in particular, it forms these representations by tracing the path of these impressions backwards in a straight line in the direction of their source.⁴⁸⁹

⁴⁸⁹ Note that on my interpretation the mind's representations of the spatial locations of sensible objects is, in one sense, given a priori, whereas in another sense it is given by experience. On the one hand, the spatial locations of sensible objects is only given by experience since the direction in which a sensation is projected depends upon which part of the sensory apparatus is affected, and the way the sense organs are affected by external objects is determined entirely by experience. On the other hand, the representation of the spatial locations of sensible objects is in another sense given a priori since the mind only comes to represent things outside itself through certain cognitive acts which are only possible by virtue of its own innate constitution. Since the sensations originally given by affection are non-spatial, the mind must *generate* the

Like Reid, the reason Kant appeals to these innate laws to explain how the mind generates representations of extended bodies in space is because the sensations originally given through affection are intrinsically non-localized and non-spatial. In contrast to Reid, however, Kant claims that the sensations produced in the mind when the material impressions in the nerves finally reach the sensorium of the soul are *also* projected outside the subject. That is, in addition to forming a representation of a certain volume of space, when the impressions in the nerves have been communicated to the brain the mind has a sensation which it also projects outside itself onto the body it perceives in space. Sensations are themselves represented in determinate locations in space as the sensible qualities of outer appearances. This aspect of Kant's theory has advantages as well as certain disadvantages. On the one hand, from the assumption that sensations are non-spatial, Reid inferred that bodies are never perceived as colored, or smelly, or as having any of the qualities which belong to sensation, and this seems to be a disadvantage since it conflicts so strongly with our experience: we certainly *seem* to perceive colors on the surfaces of bodies, tactile sensations in our hands and legs, sweetness on our tongue, etc., and Kant's claim that these sensations are represented in these parts of space is thus an advantage for his theory. But in another respect this aspect of his view also raises serious problems. Kant's theory is based around a distinction between sensations as they exist in and of themselves and the way these sensations are represented once they have been coordinated by the mind. What is originally given to the mind through affection is a certain non-spatial sensory content, and the mind then immediately localizes this sensation by projecting it outwards so that it is represented in a certain region of space. One and the same qualitatively identical sensation is thus initially experienced as a non-spatial sensory content, and this same sensory content is then represented in space through coordination. But if sensations are always represented in space, on what grounds does Kant infer that they are originally non-spatial?⁴⁹⁰ Kant does not think the mind has the power to directly intuit these non-spatial sensory contents independently of the forms of intuition: sensations cannot be represented independently of intuition since intuitions are the most basic kinds of representational mental states, and these sensations are always represented in space since the mind is innately disposed to *immediately* impose spatial form on them. But if sensations are always represented through intuition in spatial locations, doesn't reflection on their content give us as much evidence for thinking they are spatial as that they are non-spatial? And if so, on what grounds does Kant infer that sensations originally exist as non-spatial mental states?⁴⁹¹ Kant must provide some

representation of spatially located sensible objects through its own innate activity. What this means is that this representation is generated a priori by the mind itself, even if the particular order in which sensations are organized depends, in part, upon the way the mind is affected, and is in that sense empirical.

⁴⁹⁰ One must be careful not to confuse this claim with another claim which would be self-contradictory. Kant is *not* asserting that one and the same thing is both spatial and non-spatial. His claim is that sensations *exist* as non-spatial mental states, but that these sensations are *represented* as spatial: sensations do not *exist* in space, they are only *represented* in space.

⁴⁹¹ In contrast, the advantage of Reid's theory is that sensations are *never* represented in space, and that is why one can immediately infer that they are intrinsically non-spatial by simply inspecting their content. While in one respect, in allowing that sensations are represented in space Kant's theory enjoys the advantage of being consistent with our perceptual experiences, in another respect he suffers from a

answer to this question, for the reason why he insists that the representation of space is non-empirical is precisely because the sensations originally given through affection are non-spatial. But if sensations are always represented in space, then on what grounds does Kant maintain that they are intrinsically non-spatial?

In order to address this difficulty, it is important to recall the lessons we learned from Reid and Condillac. First, it is often difficult to determine the true origins of a given idea, for a careful inspection will often reveal that many of the mind's ideas which appear to be simple are actually complex, and that the different ideas which compose them often have distinct origins. As we also learned, the way to overcome this difficulty is to carefully isolate each of the component parts of a given idea, and then to inspect them as they are independently of any others which they may have come to be connected with—either as a result of association or some principle belonging to the mind's innate constitution. Thus, the mind always forms an idea of hardness as soon as it feels the sensation of pressure when pressing its hand against the surface of the table, but while the idea of hardness is always connected with this feeling of pressure, the sensation and the idea must have distinct origins. When we focus our attention solely on that sensation, and carefully reflect on the qualities which belong to it, we find that the marks contained in the idea of hardness cannot be discovered or inferred by inspecting the qualitative features of the sensation; and, since only the sensation is given by affection, the idea of hardness must instead have its origin in the mind's own innate constitution. Although the sensation is, as a matter of fact, always *connected* with the idea of hardness, one can *conceive* of this sensation occurring without the mind also forming an idea of hardness; it is only when we focus our attention on the sensation itself that we discover that the idea of hardness cannot be given by the sensation since an inspection of the latter will never reveal the marks contained in the former. The idea of hardness is only contingently connected with these tactile sensations, and the grounds for the connection is based on the mind's own innate constitution. Indeed, if the mind were constituted differently, and was limited solely to the content revealed to it by these sensations, it would never form this idea at all.

It seems that Kant must have employed a similar strategy to defend the claim that the sensations given through affection are originally non-spatial.⁴⁹² Although sensations are always represented in space, the reason Kant thinks they are originally non-spatial is because if we carefully inspect their content, we will discover that they have no spatial attributes. This, however, is not revealed by directly inspecting the way these sensations are represented through intuition, for through intuition the mind always represents these sensations in space. But this need not imply that they are intrinsically spatial, or that the spatial order in which they are represented is given directly by affection. In the same way

corresponding disadvantage since it is more difficult to see how he can be entitled to infer that these sensations are intrinsically non-spatial.

⁴⁹² Kant himself suggests something like this method at the beginning of the Transcendental Aesthetic in a passage often referred to as the “argument from elimination” [A20-21/B34-35; Cf. B5]. Admittedly, in these passages the method is employed in order to determine what belongs to the forms of intuition, rather than sensation, but the same method of elimination is also applied to sensations in a number of passages from Kant's Nachlass, as we noted in Ch. 1.

that certain tactile sensations are always connected with the idea of hardness, for Kant sensations are always connected to representations of certain regions of space, but the key point is that this connection is merely *contingent*. The reason it is contingent is because if we focus our attention on these sensations and carefully reflect on the qualities which belong to them, Kant thinks we will discover that the spatial attributes which they acquire in intuition do not belong to them intrinsically. The basic idea is that if we can conceive of these sensations occurring without the mind forming any representation of space, then it is possible the mind could have had these sensations without representing space at all. Some additional factor would then be required in order to explain why these intrinsically non-spatial, non-localized sensations come to be represented outside the mind in space. Since this additional factor is not anything given by sense, or based on anything present in the sensations themselves, the only other explanation is that these intrinsically non-localized, non-spatial sensory contents come to be represented in space through the coordinating activity of the mind, or by “an internal principle of the mind, in virtue of which...[they are] clothed with a certain *aspect*” [Ak 2:393].

In order to get a better sense as to how this might work, it will be useful to consider an example. Consider the sensation I have when I feel a stinging pain in my right hand. Although this sensation is represented through intuition as something occurring in the same region of space occupied by my hand, it does not follow that it is genuinely spatial, or that it actually exists in that location. As a pain, this sensation can only exist as a mental state, and although it is *represented* in my hand, it does not follow that it actually *exists* there—here the phenomenon of phantom pains may be cited as evidence for the claim that sensations can appear to occupy locations in space even when it is known that they do not actually exist there. Now, what Kant seems to think is that although this sensation is always represented in a certain location in space, if we carefully reflect on its content, what we will discover is that it is intrinsically non-localized and non-spatial. Although the sensation is always, as a matter of fact, represented in space through intuition, Kant thinks we can conceive of it independently of any relation to space altogether; and, since an inspection of its qualitative features does not reveal any spatial attributes, none of the spatial features which it is represented as having through intuition belong to that sensation intrinsically, or characterize the way it is in and of itself. Consider, for example, the location at which this sensation is represented through intuition. Surely this is not an intrinsic property of the sensation itself. After all, one can easily imagine one and the same qualitatively identical sensation being represented in my left hand rather than my right, or in some other part of my body altogether. But if the qualitative features of that sensation remain the same regardless as to where it is represented in space, the location at which it is represented through intuition cannot be an intrinsic feature which belongs to the sensation as it is in and of itself.⁴⁹³ One can take this a step further, for it seems that we can also conceive of this sensation independently of any relation to space altogether, as something that has no location at all. In other words, Kant’s claim is that we can

⁴⁹³ Here I am adapting for my own purposes Falkenstein’s argument to show that spatiotemporal order is not itself a sensation.

abstract from the way this sensation is represented through intuition so as to consider it as it is in and of itself, and when we do so, what we discover is that it is intrinsically non-spatial. If we imagine ourselves having this sensation while in the same original position as Condillac's insentient statue, it seems unlikely that we would be able to infer any ideas of location (or shape, size, and extension for that matter as well) by reflecting on the qualitative features presented by the sensation. If we carefully inspect the contents of this sensation, we will not discover any spatial qualities of any kind, that it does not have any location, shape, size or extension. But if the sensation is intrinsically non-spatial and non-localized, the way it is represented through intuition cannot be explained by appealing to any of the qualities which belong to the sensation. Nor, for that matter, could the mind obtain any ideas of space by reflecting on the qualitative features which are intrinsic to that sensation. The way the sensation is represented in intuition is something that only belongs to it contingently. And in that case, it seems the explanation as to why that sensation is represented in space is because the mind is innately constituted to project it onto the region of space from which the cause that sensation originated.

Of course, just how plausible this is will depend on the examples we choose, for some sensations are, in Malebranche's words, better witnesses than others. It seems that the analysis just given for the tactile sensation of pain can be extended to the sensations of smell, taste and sound, for the kinds of qualitative features which are intrinsic to these sensations (e.g., sweetness, bitterness, particular smells and sounds, etc.) seem to be no more spatial than the sensory content which belongs to a sensation of pain. But the more difficult examples are the sensations which belong to touch and sight, and in particular, the color sensations which are proper to the sense of sight appear to resist this analysis entirely. While Kant may have been able to simply adopt the analysis Reid provided for the sensations of touch, the same cannot be said for the sensations of color, for Reid never provides any convincing reasons for thinking that they are intrinsically non-spatial. If this is supposed to rest on some appeal to what is revealed through introspection, then we should be able to conceive of colors without also conceiving of anything spatial. But although Reid, Malebranche and Kant may insist that what is proper to color is some sort of chromatic quality which can be conceived of apart from any spatial qualities, I do not find my powers of abstraction to be as discerning as theirs.⁴⁹⁴ Indeed, the problem is that color sensations appear to be necessarily extended; it does not seem that we can conceive of any color without also conceiving of it as having some extension. Although one and the same sensation of blue may be represented on bodies of various shapes and sizes, it does not follow that we can conceive of color without any shape or size at all. And while the color blue can appear anywhere in the visual field without changing any of its qualitative features, this only shows that the particular location at which that color is represented cannot be inferred by inspecting its qualitative features, not that the sensation does not have to be represented in any location *at all*; indeed, if a color is necessarily extended, then at the very least the mind should be able to form an idea of the relative location of its

⁴⁹⁴ Van Cleve, *Problems From Reid*, pp. 44-45 & Falkenstein, "Reid's Account of Localization", pp. 319-321 both raise this objection against Reid.

parts, for anything extended must have parts that occupy distinct places relative to one another. While there is no particular location, shape or size that is essential to any color, it does not follow that colors are intrinsically non-spatial or that they can ever be conceived of without any reference to space, and the example of color thus appears to be a serious problem for Kant. Presumably, Kant must have thought that he could simply extend his general account of sensation to color as well. Color sensations are secondary qualities which do not genuinely characterize external objects in space, and they only exist as mental states of a thinking substance;⁴⁹⁵ although they are always represented as extended, they are really intrinsically non-spatial sensory qualities just like any other, though they are not good witnesses of this fact since colors are always represented as being spread out on the surfaces of bodies.

Now that we have finally uncovered the grounds for Kant's claim that the sensations originally given through affection are non-localized and non-spatial, our reconstruction of his theory of empirical cognition is complete. And with this in place, Kant's basic argument for the non-empirical origin of the representation of space should now be clear. In contrast to the Leibnizians who assume that we form a concept of space by starting with sensory experiences of things outside us and outside one another, Kant maintains that the mind could never even begin to represent things outside itself unless the sensations given by affection are first projected outwards through an innate law of the mind. Whereas the Leibnizians maintain that the sensations of touch and sight provide the mind with representations of things outside itself and outside one another, for Kant the sensations originally given through affection cannot provide the mind with any representation of sensible objects in space since all sensations are originally non-localized and non-spatial. The representation of space must therefore be non-empirical: it is not given directly by sense since the sensations are all originally non-spatial, and it is not acquired by abstracting it from the representation of sensible objects outside us and next to one another, for the mind could never even begin to represent those objects unless it first coordinates the sensations by representing them in distinct spatial locations.⁴⁹⁶

⁴⁹⁵ Kant does appear to assert that colors are modifications of the thinking subject in A29/B45 of the *Critique*, where he writes that "things like colors, taste, etc., are correctly considered not as qualities of things but as mere alterations of our subject [*Veränderungen unseres Subjects*]." Likewise, in A28, he writes that "Colors are not objective qualities of the bodies to the intuition of which they are attached, but are also only modifications of the sense of sight [*Modifikationen des Sinnes des Gesichts*], which is affected by light in a certain way" [A28]. Notice that Kant, like Reid and Condillac, also uses the example of a rose [A29-30/B45, B69-70*] when discussing what is proper to sensation.

⁴⁹⁶ On my interpretation, Kant's argument for the non-empirical origin of the representation of space is a predecessor of similar arguments which were later developed by nativists in the 19th century who, like Kant, inferred that the concept of space cannot be empirical precisely because the sensations originally given by affection are non-spatial. Throughout the 19th century, it was widely accepted that sensations are non-spatial, though the motivations given for this claim were often rather different from the ones we have identified above. Moreover, although many nativists believed that this assumption entailed that space cannot be an empirical concept, there were an equal number of theorists who also accepted that sensations are originally non-spatial but denied that the representation of space is innate. For discussion, see Hatfield, *The Natural and the Normative*, pp. 109-234 & Pastore, *Selective History of Theories of Visual Perception*, pp. 120-177 for a helpful overview of some of the major theories from this period.

§4.5: *The Non-Empirical Origin of the Concept of Time*

Having reconstructed Kant's argument for the non-empirical origin of the concept of space, we may now turn to the corresponding argument in §14.1 for the non-empirical origin of the concept of time. Recall that the argument there is stated as follows:

The idea of time does not arise from but is presupposed by the senses. For it is only through the idea of time that it is possible for the things which come before the senses to be represented as simultaneous or successive. Nor does succession generate the concept of time; it makes appeal to it. And thus the concept of time, regarded as if it had been acquired through experience, is very badly defined, if it is defined in terms of the series of actual things which exist one *after* the other. For I only understand the meaning of the little word *after* by means of the antecedent concept of time. For those things come *after* one another which exist at *different times*, just as those things are *simultaneous which exist at the same time*. [Ak 2:398-99]

Kant begins by denying that the idea of time arises from sensation. Obviously, what he is opposing here is not the view that time *itself* is a sensation, or something one can immediately detect through sight, taste or touch (etc.), for no one maintains that we sense time by seeing it or touching it. Instead, the view that Kant is opposing is the one defended by the Leibnizians. For the Leibnizians, the reason the concept of time is empirical is because it is formed from the ideas of simultaneity and succession, ideas which are themselves, in turn, ultimately traced back to what is originally given directly through affection, namely, a succession of sensations. Thus, according to Wolff, the mind begins to form a concept of time when it attends to the fact that the ideas it has succeed one another. Through experience, the mind is presented with a series of ideas which successively appear one after another. In order to form a concept of succession, the mind must become consciously aware of the fact that the ideas it has are succeeding one another, and what this requires is that it distinguish the existence of each member of the sequence from the existence of those which precede and follow. The concept of succession, in other words, is given by the experience of a succession of ideas, together with certain acts of the understanding which compares and contrasts these ideas to determine that they are distinct. The concept of simultaneity is obtained in a similar way. Finally, when the mind conceives of these relations in abstraction of the things that exist simultaneously or successively, it forms the concept of a series of moments, t_1 , t_2 , t_3 , (etc.,) existing one after another independently of the things that "occupy" those moments, and this, of course, is the concept of time in the abstract. The concept of time is thus an empirical concept obtained by abstraction from the sensory materials given by experience.

Although there was some question as to which stage of the Leibnizian-Wolffian account was supposed to be the target of Kant's objection in the argument for the non-empirical origin of space, it is quite clear that the argument in §14.1 is directed against the starting point of Wolff's account. Thus, according to Wolff, the mind begins to form a concept of time by first having a succession of representations: the succession of sensations given by affection is what provides the mind with the starting point from which

it subsequently goes on to construct a concept of time through acts of reflection, comparison and abstraction. But, according to Kant, any attempt to explain how the mind acquires an idea of time which takes these experiences as their starting point will inevitably be circular, for “it is only through the idea of time that it is possible for the things which come before the senses to be represented as simultaneous or successive” [ibid]. Here, Kant is explicit that the mind could not even *begin* to represent things as successive or simultaneous unless it first had the idea of time, and this makes it clear that it is the first stage of Wolff’s account which the argument is directed against.

Kant’s basic claim is that the concept of time cannot be acquired from the concept of succession without circularity; and the reason given as to *why* this would be circular is that one thing cannot be represented *after* another unless the mind already has a concept of time. It is far from clear, however, as to what this alleged circularity amounts to. One possibility is the interpretation proposed by Falkenstein, who is one of the very few that bother to discuss this argument in any detail,⁴⁹⁷ and before we present our own interpretation, it will be useful to provide a brief overview of his account, since this will help set the parameters for the discussion that follows. Falkenstein argues that Kant’s argument is best understood by way of contrast with an alternative position known as sensationism—though his basic point can also be easily extended to a number of other similar views, such as Wolff’s. On the sensationist account, we obtain an idea of time by first recognizing that the sensations given by affection stand in relations of succession and simultaneity. This recognition allegedly occurs when the mind reflects on certain intrinsic qualities of sensation: specifically, when it observes that sensations exhibit various degrees of vivacity. Thus, the sensations which exist in the present moment are more vivid than those experienced in the immediate past, and the sensations experienced in the distant past are even less vivid than those experienced in the recent past. The mind is said to discover that sensations succeed one another by simply observing their changing degrees of vivacity; and, insofar as the degree of vivacity exhibited by a sensation appears to diminish as it recedes into the past, and these degrees are in principle scalable, the mind can also determine the sequential order of these sensations by noting the different degrees of vivacity they exhibit. The concept of simultaneity is obtained in much the same way: namely, sensations are determined to be simultaneous when they have the same

⁴⁹⁷ The argument for the non-empirical origin of the concept of time has received far less attention in the literature than the corresponding argument for space. In some ways this is not surprising, for insofar as both of these arguments are presented as being structurally parallel, many commentators seem to assume that any interpretation of the one will also apply to the other. Although there is certainly some justification for this, the argument for the non-empirical origin of time does pose certain difficulties, especially for our own interpretation, which prevent us from adopting this same approach. To give just one example: on our interpretation the argument for the non-empirical origin of space turns on the claim that the sensations originally given by affection are non-spatial, but it is far from clear whether it makes any sense to claim that the argument in §14.1 likewise rests on the assumption that sensations are originally non-temporal. Even if the non-spatiality of sensations was a commonplace in the early-modern period, the same cannot be said for the claim that they are non-temporal; and it is far from clear how one could consistently maintain that sensations are given to the mind one after another while denying that these sensations exist in time. If our general interpretation of Kant’s theory of empirical cognition is to succeed, these difficulties will have to be resolved, and that of course necessitates a special discussion of the argument in §14.1.

degree of vivacity. It is thus by reflecting on the intrinsic qualities of the sensations given by affection that the mind comes to obtain the concepts of succession and simultaneity; and, once the mind has acquired the concepts of these temporal relations, it can then proceed to form a concept of time by conceiving of the order in which these sensations appear in abstraction of the sensations themselves.⁴⁹⁸

According to Falkenstein, one basic problem with this view is that the mind could never even begin to reflect on the intrinsic qualities of sensations, and compare and contrast the relative degrees of vivacity which they exhibit, unless these sensations are *first* given to the mind one after another in time. The ability to apprehend temporal relations like succession and simultaneity cannot be explained by appealing solely to what the mind observes when it inspects the qualitative properties of sensation, for unless these sensations are first received in a temporal order—one *after* another—the mind would never be in a position to inspect their intrinsic qualities. Thus, on Falkenstein's interpretation of the argument in §14.1, Kant is pointing out that the sensationist account is circular insofar as the ability to discover the temporal relations of succession and simultaneity presupposes that sensations are first presented to the mind one after another *in* time. And, insofar as that is the case, the concept of time cannot be originally acquired from the concepts of succession and simultaneity, since the latter presuppose the former. Now, as we have already noted, the intended target of Kant's argument in §14.1 is Wolff and his fellow Leibnizians, rather than the sensationists, but the very same point can also be used to undermine the Leibnizian-Wolffian account. For Wolff, the concepts of succession and simultaneity are only given through certain acts of the understanding: in order to recognize that one thing exists *after* another, the mind must first reflect on the ideas given by sense so as to identify their various features, compare these features, and then distinguish one idea from another when it discovers that they are different ("If *attending* to the continuous succession of successive things A, B, C, D, etc., we *distinguish* the existence of A itself from the existence of B itself..").⁴⁹⁹ But this is no less circular than the sensationist account, for how could the mind even begin to compare and contrast these ideas unless they are *first* given to the mind one after another in time? In other words, Wolff, no less than the sensationists, maintains that we form the concepts of succession and simultaneity by inspecting the qualitative properties of the ideas given by sense. The only difference is that the sensationist attempts to explain the origin of these concepts by appealing to perceived differences in the degrees of vivacity exhibited by our sensations, whereas Wolff only requires that the mind recognize that the various ideas given by sense are different in some way or other. In either case, however, Kant's basic point is the same: sensations must first be given to the mind in a temporal order before it can discover their temporal relations of succession and simultaneity. And, in general, any view in which the concepts of temporal relations like succession and simultaneity are

⁴⁹⁸ According to Falkenstein, *Kant's Intuitionism*, pp. 165-169, this view is suggested at times by Locke, and attributed to Hume by Reid. Cf. Jay Rosenberg, *Accessing Kant*, pp. 70-71. Perhaps an even clearer proponent is Condillac, *Treatise on Sensations*, pp. 178-180 & pp. 195-198.

⁴⁹⁹ *Ontologia* §571

supposed to be acquired by inspecting the qualitative features of sensations—*whatever* those might be, whether vivacity or something else—and *before* the mind has a concept of time, will likewise be circular.

Nevertheless, as plausible as this sounds, this interpretation of the argument appears to be inadequate. On Falkenstein's reading, the reason Wolff's account is supposed to be circular is because he assumes that sensations must be given to the mind in a successive order—or appear one after another in time—before the mind can form the concepts of succession and simultaneity. But this assumption need not entail that the mind has a *concept* of time before it has a *concept* of succession, or that Wolff's account is circular in the way that it needs to be if Kant's argument is to succeed. For Wolff, the mind does not have a concept unless it is *consciously aware* of at least *some* of the marks which belong to the things it represents.⁵⁰⁰ But when sensations are given to the mind one after another in time, it does not follow that it has any *concept* of time or succession, or that it has formed any idea of the temporal order of these sensations, for sensations might be given one after another in time without the mind having any conscious recognition of that fact. If, for example, these sensations are merely petite perceptions, or nothing more than material impressions on the nerves, then, although these sensations would indeed be given to the mind in a temporal order, Wolff would simply deny that the mind had any concepts at all, let alone the concepts of succession or time.⁵⁰¹ In that case, if Kant's claim that Wolff's account is circular is based on the observation that Wolff assumes that sensations must be given to the mind in a temporal order before it can begin to form the concepts of succession and simultaneity, then it seems that Wolff could simply respond

⁵⁰⁰ For Wolff, having concepts, and being conscious, are not only concurrent, they are also linked as concomitant states, and both are made possible through the very same logical acts of the understanding. According to Wolff, DM, §192 & §728, the most fundamental power of the mind is the ability to represent things which are distinct from itself. But the mind is only conscious when it is *aware* that what it represents is something distinct from itself [DM, §731-733]; and the mind cannot distinguish itself from what it represents unless it first observes that those things have certain features, and then compares those features with those which belong to itself. For Wolff, consciousness is grounded in these cognitive acts, together with some implicit grasp of the basic principles of cognition, such as the PNC [DM, §197]. Of course, Wolff allows that there are representations without consciousness, or, that there are certain states of the soul which it is not conscious of [DM, §193], but he denies that having these representations is also sufficient for having concepts. A representation with consciousness is defined as a 'thought', and thoughts are either confused or clear, distinct or obscure, etc., [DM, §194-196]. Concepts, in turn, are defined as *distinct* thoughts, or, as representations that involve an awareness of the similarities and differences of the things represented. Thus, for Wolff, in order to have a concept, the very least that is required is that the mind identify, and consciously articulate in thought, some of the marks which distinguish one thing from another.

Although things with certain features appear before the mind when it is affected by sense, how the mind comes to form concepts of those features is thus a further question. What is originally given by sense is just an undifferentiated manifold, and the mind forms concepts through the faculty of the understanding [DM, §272-281] by organizing the parts of this manifold according to its similarities and differences [DM, §212-213]. And so, if the mind only becomes conscious by distinguishing things through the logical acts of the understanding, then even after the mind has a succession of ideas it is a further question of how the mind can form a *concept* of their succession, or represents their succession *with* consciousness.

⁵⁰¹ Wolff, DM, §220 defines 'sensation' as a state of the subject which is grounded in a change made in the sense organs of the body. Although sensations are always connected with changes in the body, they are not states of the body, but are instead states of the soul. Accordingly, Wolff, DM, §222 distinguishes between sense impressions and sensations proper.

that this assumption does not entail that the mind already has a *concept* of time. For Wolff, if we are trying to explain how the mind acquires these concepts, the real question that needs to be answered is how the mind comes to *apprehend* that sensations are being given one after another in time. Indeed, Wolff himself *acknowledges* that the mind could never begin to form a concept of time, or concepts of the temporal relations of succession and simultaneity, unless sensations were first given to the mind one after another in time; but his main claim is that the mind can only become *aware* of the temporal order of these sensations by first apprehending them *as* successive. This account is only circular if the ability to become consciously aware of sensations *as* successive presupposes that the mind is first consciously aware of them as a temporal order—or, if his explanation of how the mind forms a concept of succession presupposes that it already apprehends the concept of time. But nothing said by Falkenstein indicates why we should think this is so. Even if Wolff assumes that sensations must be given to the mind one after another in time if the mind is to form the concepts of succession and simultaneity, this assumption does not by itself imply that Wolff's account is circular in any way that is germane to the issue at hand. Wolff, it seems, can accept Kant's point with equanimity. But in that case, Falkenstein's reconstruction of the argument does not really manage to undermine the view which Kant is trying to refute.⁵⁰² And yet, it also appears as though Kant is in fact trying to meet Wolff's account on its own terms when he writes that it is not “possible for the things which come before the senses to be represented *as* simultaneous or successive”, or to *understand* [*intellegio*] that one thing exists after another, unless the mind first has a concept of time: the ability to *understand* or represent something *as* successive, seems to not only require that the mind undergo a succession of states, but also that it have some conscious apprehension of these states *as* successive. In that case, the issue has to do with the order in which certain ideas come to be *apprehended* by the mind. And so, even if it is true that the mind could never begin to form an idea of time unless it first has a succession of sensations, the disagreement between Kant and Wolff turns on the question of whether, after undergoing a succession of states, the mind *first* forms a concept of time or a concept of succession. Does the mind apprehend or become consciously aware of these sensations *as* successive, and form a concept of their succession, *before* it forms a concept of time? Or is it instead somehow necessary that the mind first have a concept of time before it can become consciously aware of these sensations *as* successive? The answer is by no means settled on the interpretation proposed by Falkenstein.⁵⁰³

⁵⁰² In some sense, Falkenstein, *Kant's Intuitionism*, p. 169 appears to recognize this when he writes that Kant's argument does not really undermine a view like Locke's (or presumably Wolff's, for that matter), but simply identifies a certain tacit assumption which, when combined with the further observation that the order in which sensations are given is not itself a sensation, can be used to infer that space and time are not empirical concepts (“Kant's account therefore does not so much oppose Locke's as run deeper”).

⁵⁰³ In addition to these problems, another major issue with Falkenstein's interpretation of the argument is that it is not consistent with the theory of empirical cognition which Kant defends in ID. Falkenstein, *Kant's Intuitionism*, pp. 165-169 focuses upon the argument in §14.1 of the *Dissertation* to illustrate his basic interpretation of the first argument of the metaphysical exposition in the *Critique*. But this appears to be quite problematic insofar as Falkenstein himself acknowledges that Kant's account of the origins of these representations is radically different in these two works, and, that the first argument of the metaphysical

What exactly does Kant mean when he says that the concept of succession, or the representation of things *as* successive, presupposes the concept of time? In our interpretation of the corresponding argument for the non-empirical origin of space, Kant's basic claim was that the mind cannot represent things in spatial relations unless the sensations given through affection are first represented in distinct spatial locations. Since these two arguments are structurally parallel, when Kant claims that the ability to represent a series of sensations as successive presupposes that the mind first has a concept of time, at least part of what he means is that the mind cannot represent things in temporal relations of succession and simultaneity unless it first represents them in distinct temporal locations. This is also confirmed by the text: the sense in which the mind must have a concept of time before it can represent things as successive or simultaneous is *explained* at the very end of the passage, where Kant writes that one thing is only represented *after* another when they are perceived to "exist at *different* times, just as those things are *simultaneous which exist at the same time.*" What Kant appears to be asserting, then, is that the mind cannot represent things in temporal relations of succession and simultaneity unless it first represents, or has a concept of, the distinct temporal locations at which those things occur; and, from the fact that the mind has a concept of these temporal locations, Kant then seems to infer that the mind must also have a concept of time. But at first sight, neither of these claims appear to be particularly compelling. Since the second claim ultimately depends upon the first, we may start by focusing our attention on the claim that the mind must represent things at distinct times before it can represent them as successive or simultaneous. What exactly does this mean? If Kant is arguing that the ability to perceive A_2 *after* A_1 presupposes that the mind first perceive the times at which A_1 and A_2 appear, where these are supposed to be the temporal locations occupied by A_1 and A_2 , and, that it is because we perceive these times to be ordered in a certain relation (i.e., t_2 is *after* t_1) which enables us to understand that their occupants, A_1 and A_2 , are also so ordered, then we seem to run into the same kinds of difficulties we encountered before. What exactly are these temporal locations, and in what sense are they represented? If Kant is assuming that time is a kind of independently existing container, and that everything which exists occupies a distinct location in time, then the argument in §14.1 rests on an assumption which the Leibnizians will simply reject: while the Leibnizians can allow that we can conceive of the times at which things exist, they deny that these temporal locations are entities which genuinely exist apart from their occupants. A sensation, and the time at which that sensation exists, are not two distinct entities, and to assume otherwise is to hypostasize a mere abstraction, or to form a purely imaginary conception of time and of temporal locations. Moreover, even if this assumption were granted, the claim that the ability to perceive one thing after another presupposes that we first perceive the distinct times at which these things occur would

exposition is the very argument Kant used to establish his position that the forms of intuition are orders of intuited matter. But if that is correct, Falkenstein's reconstruction of the argument in §14.1 must be inadequate: if Kant did not maintain that the forms are orders of intuited matter in ID, then the argument in §14.1 cannot be interpreted in the aforementioned way, since it is supposed to be the *very* argument Kant gave in support of that view—as Falkenstein claims in *Kant's Intuitionism*, pp. 88-89, p. 153 & pp. 169-175.

still be implausible on phenomenological grounds: when I perceive A_2 after A_1 , I don't also perceive the times at which they appear as entities distinct from A_1 and A_2 , for the moments of time are never perceived by themselves, but are only conceived of through abstraction. Surely the ability to perceive the succession of A_1 and A_2 does not require that we first perceive the times at which these things exist, for these are either never perceived at all, or, if they are perceived, then it is only by first perceiving A_1 and A_2 and *then* conceiving of their locations by abstraction. Prima facie, Wolff's claim that the mind first forms a concept of the relation of succession between A_1 and A_2 , and then a concept of the distinct times at which they occur by abstraction, appears to be more plausible: we first perceive A_1 and then A_2 , and, after analyzing these ideas through the understanding, recognize that they are two distinct ideas which stand in a certain ordered relation to one another, namely, A_1 is first, A_2 is second, i.e., A_2 is *after* A_1 . The idea of the times at which these ideas succeed one another is then formed by abstracting A_1 and A_2 so as to only conceive of the relation they have to one another—independently, that is, of the things that are so related. Alternatively, if these temporal locations are nothing more than the relations things have to one another, then Kant's claim becomes almost trivial, for if temporal locations are themselves ultimately defined in terms of the relations of succession and simultaneity, then the argument amounts to nothing more than the claim that one cannot represent things in relations of succession and simultaneity unless one first has concepts of succession and simultaneity.⁵⁰⁴

Fortunately, however, there is a way to interpret Kant's argument which allows us to avoid these problems. In the argument for the non-empirical origin of the concept of space, Kant's basic point was that the mind must actively localize sensations by projecting them outwards so as to represent them in distinct locations of space. This does not mean that the spatial locations of things are somehow perceived *before* their spatial relations, or that these locations are first represented as empty spaces which are then filled with sensations; instead, these locations refer to wherever the sensations have been projected, and although the ability to represent sensations in spatial relations presupposes that they are first represented in distinct locations, the representation of their spatial relations arises alongside the coordination of these sensations in distinct locations of space. The key point is just that there are certain acts of localization which the mind must itself perform upon the sensations given by affection before it can have representations of

⁵⁰⁴ These very same questions can also be posed for Falkenstein's interpretation. On his interpretation, the sense in which the representations of succession and simultaneity presuppose a concept of time is similar to my own: namely, the ability to represent sensations as successive presupposes that the mind first represent (or have a concept of) their temporal order. But assuming that the mind must also *apprehend* the temporal order of these sensations, what exactly does the perception of this temporal order amount to? Does the temporal order of these sensations refer to their *locations* in time, where these exist independently of the sensations themselves? Or is the temporal order nothing more than the relations these sensations have to one another? If, in the latter case, to say that sensations are given one after another just means that they succeed one another, then all that Kant is allegedly asserting is that sensations must be given successively before the mind represents them as a succession. But Wolff certainly does not deny that! On the other hand, if this 'temporal order' refers to the series of moments occupied by these sensations, considered in abstraction of the sensations themselves, then the claim that the mind must first perceive this temporal order before it perceives the sensations as a succession appears to be false, as we have just seen.

things in spatiotemporal relations. Presumably the argument for the non-empirical origin of the concept of time rests on a similar point. And if so, Kant is not asserting that the mind cannot perceive something as a succession unless it first perceives the empty temporal locations at which these things occur. Instead, his claim is that there are certain cognitive acts which the mind must perform upon the sensations given by affection before it can represent them *as* successive—specifically, acts of coordination in which the mind itself actively arranges sensations by representing them in distinct, temporal locations.

If this is correct, then perhaps the key to understanding Kant's argument is the recognition that the starting point of Wolff's analysis is mistaken, or, at the very least, that Wolff's account of how the mind acquires a concept of time presupposes certain other cognitive acts which are more basic than those Wolff appeals to. For Wolff, the concept of time is obtained by an analysis carried out by the understanding on the ideas given through sense: the mind obtains an idea of time by first having a succession of ideas, and then comparing and contrasting those ideas. But, according to Kant, the concept of time is not given by comparing and contrasting the ideas which successively appear before the mind, but is instead a representation that only arises when the various things which affect the senses are *first* coordinated by a natural law of the mind. Recall, moreover, that for Kant these acts of coordination are, in some way, more basic than any acts of the understanding, for the objects which appear before the mind in sensitive cognition can only be given to the understanding for analysis if the mind has first coordinated its sensations. What this suggests is that the concept of time cannot be obtained through the kinds of activities characteristic of the understanding, for these presuppose that certain other acts of cognition have already been carried out upon the very sensory materials which are to be subjected to analysis. Presumably, then, at least part of the reason why the Wolffian account is supposed to be circular is because Kant thinks there are certain other cognitive acts which must be carried out by the mind on the sense impressions given through affection *before* the understanding can even begin to compare and contrast the ideas given by sense; and *these* cognitive acts are what first generate a representation of time, rather than any of the various forms of analysis carried out by the understanding.⁵⁰⁵ And, from the fact that the mind performs these cognitive activities, it is then supposed to follow, somehow or other, that the mind already has a concept of time.

The cognitive act which Kant identifies as being responsible for generating the representation of time is, of course, coordination, and it will be useful at this point to recall what we have already established about the nature of this cognitive act. As we observed in Chapter 1,⁵⁰⁶ when applied to cognition, 'coordination' refers in the most general sense to the act of combining parts to form wholes—as when, for example, different marks, which are not subordinate to one another, are connected or combined with each other to form a more complex concept. Sensations are also among the various

⁵⁰⁵ Kant hints at this in the *Dissertation*, specifically when he remarks that the cognition of time is prior to the cognition of the principles of logic, specifically the PNC, which for Wolff is not only the most fundamental principle of being, but also of cognition. See Ak 2:401-402.

⁵⁰⁶ See Ch 1, pp. 34-38.

things which are said to be coordinated by the mind, and they too are described as being combined or connected so as to form the representation of some kind of whole: thus, we are told that the mind must “join together” [Ak 2:406] the sense impressions given through affection, and that the “various factors in an object which affect the sense” can only “coalesce into some representational whole” through the coordinating activity of the mind [Ak 2:303]. What we know, then, is that the representation of time arises when the mind coordinates the sensations given by affection, and this act of coordination consists in combining parts to form wholes. To say, then, that the mind forms a representation of time by coordinating sensations, is to say, at least in part, that sensations are parts which are combined by the mind so as to form the representation of a certain kind of whole. Now, presumably sensations are coordinated in time in some way that is analogous to how they are coordinated in space. In the previous section we argued that the sensations originally given through affection are projected outwards by the mind onto distinct, spatial locations; when taken separately, each sensation is represented in a distinct place, but when taken together, these sensations are represented as distinct parts which are spatially related to one another so as to form a kind of complex, extended whole. If we apply this account to the present case, then sensations are coordinated in time when the mind represents them at distinct, temporal locations; and, as they are projected onto these locations, sensations are also combined with one another in thought so as to represent some temporally extended stretch of time. When a series of sensations, A_1 , A_2 , A_3 , are given to the mind one after another in time, each of these sensations are first represented as occurring at different moments of time, and, in projecting these sensations onto those locations, the mind also conjoins them with one another so as to represent a certain kind of temporal whole. And, these coordinative acts are the very ones which must be carried out by the mind before it can then represent things in temporal relations of succession and simultaneity.

In our earlier discussion, we also noted that coordination is connected to Kant’s notion of synthesis. This does not mean that these notions are equivalent. Coordination is a cognitive act which is always applied to aggregates, but Kant distinguishes between analytic coordination, in which a whole is separated into its parts, and synthetic coordination, where the parts are combined to form a whole. Conversely, there are certain kinds of synthesis which are acts of subordination, not coordination. Nevertheless, though the two notions are not identical, if the representation of time is generated when sensations are joined together, combined or connected with one another so as to form some kind of whole, then the kind of coordination involved in generating this representation is synthetic. This of course still does not tell us much, but if there is indeed a connection between the concepts of coordination and synthesis, then it may be possible to interpret some of the claims Kant makes in ID by appealing to certain remarks which appear in the *Critique*. In particular, in his account of the three-fold synthesis described in the A-edition of the Transcendental Deduction, Kant makes a number of highly suggestive remarks which, as I hope to show momentarily, can be used to shed a great deal of light on the argument in §14.1. There are, of course, serious difficulties with this

approach. Any attempt to interpret the arguments of the *Dissertation* retrospectively, so to speak, by appealing to remarks that were only explicitly made a decade later, and which, moreover, are uttered in an entirely different context and often for a different purpose, will no doubt appear to be unacceptable to many. Even worse, we have repeatedly acknowledged that Kant's basic philosophical framework in the *Critique* is, in many important respects, completely at odds with his philosophical outlook in ID, and perhaps the most significant example of this has to do with the apparent change in his views on the origin of the representations of time and space, specifically on whether they are passively received or actively generated. And it is on this very issue where the apparent connection between the notions of synthesis and coordination would seem to fall apart: in ID, coordination is responsible for generating the representations of time and space, but in the *Critique* synthesis appears to be essentially tied to the faculty of understanding, which assuredly is not responsible for the original acquisition of those representations. But if space and time are not generated by means of a synthesis, what possible relevance could any of the remarks in the Deduction have for the argument of the *Dissertation*?

To be sure, as we have repeatedly stressed, the *Inaugural Dissertation* is not the *Critique of Pure Reason*, and Kant's main concern in the Deduction is not the origin of the representation of time but the question of whether the categories of the understanding have a legitimate application within experience. Still, in spite of these very legitimate concerns, there do appear to be a number of passages in the A-edition which provide useful insights as to how the argument in §14.1 of ID may be interpreted, and before we dismiss any of these passages as possible sources of evidence, it will be necessary to first identify the specific passages I have in mind and explain just what their relevance might be. And so, rather than try and meet any one of these more general objections directly from the start, it will be better to first discuss the specific contents of these passages, and only then try and answer the further question of whether or not they are legitimate sources of evidence.

At the beginning of the A-Deduction, we are told that the mind is always passive in relation to the matter of cognition, for the matter of what is cognized is always received through the senses by means of affection. But, since what is presented to the mind by sense always contains a manifold, or a collection of diverse sense contents, and this manifold can only be grasped *as a manifold* through certain spontaneous acts of the mind, the mind must be active in cognition as well: "If therefore I ascribe a synopsis to sense, because it contains a manifold in its intuition, a synthesis must always correspond to this, and *receptivity* can make cognitions possible only if combined with *spontaneity*" [A97]. At first sight, these remarks appear to be in perfect accord with Wolff's own account of the relative contributions made to cognition by the faculties of sense and understanding: the mind certainly cannot represent the manifold given by sense as a manifold unless it recognizes the differences between its various parts, and this, in turn, always presupposes that the mind first *apprehends* each of the various contents presented to it by sense, that it *compares* these contents with one another, and that it then *distinguishes* them when they are recognized to be different—and every one of these cognitive acts are spontaneous,

in contrast to the passivity of the mind with respect to sense.⁵⁰⁷ But the acts of spontaneity which Kant identifies as those which make cognition possible are even more basic than these merely “logical” acts of analysis, for they are what “make possible even the understanding and, through the latter, all experience as an empirical product of understanding” [A97-98]. For Kant, the spontaneity of the mind which makes cognition possible consists of a threefold synthesis—or, perhaps more accurately, a single act of synthesis which may be distinguished into three distinct aspects—which he designates the syntheses of apprehension, reproduction, and recognition. This threefold synthesis is a necessary condition which grounds the kinds of activities performed by the understanding in its logical use when applied to the contents given by sense. In order to represent the manifold given by sense as a manifold the mind must recognize that the parts of this manifold are distinct, but what this presupposes, in turn, is that it first “run through” and apprehend each of the various parts of this manifold from one moment to the next, for the acts of analysis which enable the mind to distinguish the manifold into its various parts can only occur if they take place over the course of a series of moments. The contents given through sense are thus represented in succession one after another in time: the mind first has a representation of A, followed by B, then C, etc. From this basic assumption, Kant then proceeds to argue that the mind can only grasp the manifold given by sense as a manifold by means of a threefold synthesis which it spontaneously performs upon the contents given through sense. If representations are given successively, then the mind must apprehend that what it represents at one time is connected to what it represented at a previous time. When the mind has a representation of A, followed by B, and then C, each of these parts must be held together by the mind and apprehended together as a whole, for if the earlier parts of this series were not retained in thought from one time to the next—in other words, if one simply “forgot” A when representing B, and B when representing C—one would never apprehend this manifold of sense as a manifold. One cannot, after all, distinguish one representation from another unless they are recognized to be different; but this recognition could never occur if, when undergoing this sequence of representations, the mind were to simply forget each representation that it has from one moment to the next, so that the representation it has in the present moment is not connected in any way to the one it has at the next. If the representations of A, B and C, taken *separately*, do not by themselves explain how the mind apprehends A-B-C together, then it is possible that each of these contents might have been represented disjointly, without any connection to one another, and in that case there must be some additional act of the mind which is responsible for unifying these representations so that they come to be apprehended together as a single whole, and Kant calls this act the synthesis of apprehension. In order, then, to represent the manifold given by sense as a

⁵⁰⁷ I certainly do not mean to suggest that Wolff is the *sole* target of the Deduction. That Kant is casting a far wider net is evident from the opening remarks of his discussion of the synthesis of reproduction, where he argues that the laws of association which empiricists like Hume appeal to in order to explain the origin of certain concepts likewise presuppose a transcendental synthesis [A100-101]. Nevertheless, it seems to me that a careful inspection strongly indicates that Wolff’s account of the origins of consciousness, as well as the acts of understanding involved in cognizing the manifold of sense, must assuredly have been an important source and target for the argument of the Deduction.

manifold, the series of representations the mind has from one moment to the next must be apprehended together, and it is through the synthesis of apprehension that the mind combines the various parts of the manifold so as to represent them together as a kind of whole [A99]. The synthesis of apprehension is, however, inseparably connected to another act of synthesis, which Kant calls the synthesis of reproduction.⁵⁰⁸ If the contents given through sense are represented one after another in time, and this series of representations must be held together by the mind in order to be represented as a whole, then obviously the representations of each of these sense contents cannot simply vanish from the mind from one time to the next. The series of representations can only be apprehended together as a whole if each representation in the series is retained by the mind, and what this presupposes is that each of the mind's representations are *reproduced* in thought from one time to the next. When, for example, the mind represents B *after* A, and C *after* B, A and B must both be reproduced in thought so that A, B and C are represented conjointly as A-B-C. In order, then, for the representations of A, B and C to be apprehended together as A-B-C, what is represented from one time to the next must be retained and thus reproduced by the mind in thought, and it is through the synthesis of reproduction that the mind reproduces each of the representations in the series from one time to the next [A101-102]. And finally, there is one additional act of synthesis which is also required if the manifold given by sense is to be represented as a manifold. When the mind reproduces a representation which it experienced at a previous time, it must recognize that what it reproduces stands for the *same* representation which it had before; otherwise, whatever is reproduced would be experienced as a *new* representation altogether, and the reproduction of this representation would not contribute in the least to a representation of the whole. As Kant puts it, "Without consciousness that that which we think is the very same as what we thought a moment before, all reproduction in the series of representations would be in vain. For it would be a new representation in our current state, which would not belong at all to the act through which it had been gradually generated, and its manifold would never constitute a whole, since it would lack the unity that only consciousness can obtain for it" [A103]. Thus, the representations which are reproduced from one time to the next must be conceived of as representations which were just experienced, rather than new representations altogether, and what this requires, according to Kant, is that each of the representations in the series are unified according to some concept. And this third synthesis, which always presupposes a concept, is called the 'synthesis of recognition' [A103-104].

In addition to these acts of synthesis, there is one further condition which is always presupposed if the manifold given by sense is to be represented as a manifold: namely, the representation of time. The representation of time is what underlies each and every one of the mind's cognitions, for although representations may differ in terms of their intentional contents, all representations are alike in that they exist in the mind as one of

⁵⁰⁸ As Kant notes in A102, "the synthesis of apprehension is therefore inseparably combined with the synthesis of reproduction", which together constitute the "transcendental ground of the possibility of all cognition in general (not only of empirical cognition, but also of a priori cognition)".

its states and, as mental states, all representations are thus subject to the form of inner sense, which is time. All cognition thus requires that the mind's representations are "ordered, connected, and brought into relations" [A99] with one another in time. The representation of time is implicit throughout the mind's synthesis of the manifold given by sense, for as the mind synthesizes those contents it recognizes not only that what it represents is different, but also that these contents are represented at different times. The mind cannot represent the manifold given by sense as a manifold unless the parts of this manifold are represented successively at different times, or by "running through" its various parts over the course of a series of moments. But in addition to synthesizing the contents given by sense, the mind must also have a representation of the different moments at which these successive representations occur: "Every intuition contains a manifold in itself, which however would not be represented as such if the mind did not *distinguish the time* in the succession of impressions on one another" [ibid; my emphasis]. Thus, when the mind runs through these representations, it must be consciously aware of the fact that each of these representations are occurring at *different* times, and, insofar as the mind must distinguish the different times at which the parts of the manifold are represented, the mind's synthesis of the manifold always presupposes a representation of time.⁵⁰⁹

⁵⁰⁹ In this brief overview of Kant's discussion of the threefold synthesis, I have elected to omit any detailed analysis of the text since any attempt to do so would quickly raise a host of issues which would only divert us from our main task. There is, however, one issue which it may be useful to briefly discuss, since it may help to clarify certain important aspects of my interpretation. One major problem with Kant's discussion is that he is extremely careless with his terminology throughout the course of his exposition, and one especially egregious example of this may be witnessed by focusing on the everchanging terminology he uses when describing the threefold synthesis. At times, Kant says that it is the manifold given by sense which is subjected to the threefold synthesis of the mind, while elsewhere the threefold synthesis is said to be applied to 'intuition'. As a result of this shift in terminology, it is sometimes unclear as to what exactly is being synthesized by the mind. Whereas the manifold of sense seems to refer to the intentional object of a representation, 'intuition' is ambiguous since it sometimes refers to the intentional content of a representation (i.e., what is intuited), while at other times it refers to the act of representation itself (i.e., the intuition proper); consequently, in those passages where 'intuition' is said to be subjected to a threefold synthesis, it is sometimes unclear whether the mind is synthesizing the *contents* of what it represents or the *representations* themselves. Now, these passages would not pose any problem if it were only the intentional content of the mind's representations which is subjected to the threefold synthesis, but Kant does seem to think that the threefold synthesis is also applied to the mind's representations: he claims, after all, that part of what is involved in grasping the manifold of sense as a manifold is that the mind also recognize the *diversity* of its representations in time, or, in other words, that it apprehend the manifold of *intuition* as a manifold (where 'intuition' is being used in the strict sense to refer to a representation as a mental state). Indeed, as Kant suggests, the manifold of sense can only be represented as a manifold if the mind also apprehends the manifold of intuitions as a manifold. And, since a manifold can only be grasped as a manifold by means of the threefold synthesis, it seems that we must acknowledge that the mind synthesizes *both* the manifold of sense as well as its representations of that manifold. Now, assuming this is true, it will be useful to have a clearer picture as to how exactly this is supposed to work, but since a detailed analysis of the texts would take us far beyond the scope of our present discussion, in the remarks that follow I will only try to provide a synoptic overview of the interpretation I am proposing.

To begin, if the manifolds given by sense and intuition must both be represented as manifolds, and thus synthesized by the mind, then the first thing that needs to be observed is that the kind of manifold presented by sense is different from the kind of manifold given by intuition. In the most general sense, a manifold is given so long as there is a multiplicity of some sort; but since Kant desires to carry out his

My original claim, recall, is that there are certain remarks which Kant makes in the A-Deduction that can assist us in our attempt to understand his account of the origin of the representation of time in ID. But our brief summary of the opening sections of the Deduction is not yet complete. Before we return to our original task, we must first turn our attention to two passages which appear at the end of Kant's discussion of the syntheses of apprehension and reproduction. In these passages, Kant claims that the very same syntheses of apprehension and reproduction involved in representing the manifold given by sense as a manifold are also involved in forming the representations of time and space: the representations of time and space are generated a priori “through the synthesis of the manifold that sensibility in its original receptivity provides” [A100], specifically, through the syntheses of apprehension and reproduction. These passages will prove to be especially important for the discussion that follows, and we may finally turn our attention to them now that our brief overview of the Deduction has laid the groundwork required for understanding them. In regards to the synthesis of apprehension, Kant writes:

discussion at the highest level of generality possible, he does not bother to distinguish between different *kinds* of manifold, though this omission does make his argument more difficult to follow. Now, through inner and outer sense alike, the mind is presented with certain contents that are composed of a multiplicity of distinct marks—although it is notable that outer sense, unlike inner sense, also presents the mind with a multiplicity of diverse sense contents which simultaneously occupy *distinct* spatial locations, or a manifold *in* space. In contrast, the manifold given by intuition does not contain a multiplicity of marks in space, for representations, as mental states, are not spatial; nor, for that matter, can these representations be distinguished from one another by virtue of having different marks *within* themselves, for representations can only be distinguished by virtue of their contents, and not by any of the marks which belong to them as representations per se—one representation does not differ from another *qua* representation. A manifold is thus given by intuition only if there is a multiplicity of distinct representations, and this multiplicity can only be given when the mind has a series of representations, or, in other words, a multiplicity of representations at *different moments of time*. A manifold can only be given by intuition, therefore, insofar as representations are related to different moments of time. This is not to suggest, of course, that the manifold of sense does not also present a manifold in time, but just that it is only through the *mediation* of inner sense, as Kant notes, that the contents given by sense are related to one another in time, and thus also come to constitute a manifold across time. What we have, then, is a distinction between the *kinds* of manifold given by sense and intuition. The mind is presented with a manifold through sense insofar as the intentional content of what it represents contains a multiplicity of distinct marks; in this case, both inner and outer sense contain a manifold *within* themselves which is given at a *single* time. Intuitions, however, do not contain a manifold within themselves since a manifold is only given by intuition when the mind has a multiplicity of distinct representations *across time*, and each representation is related to a different moment of time. Now, Kant claims that the mind can only grasp the manifold given by sense as a manifold by “running through” its various parts over the course of a series of moments. And so, as the mind represents each part of this manifold, it also has a series of distinct intuitions. Since the manifold of sense can only be represented as a manifold if the mind distinguishes the times at which it represents each part of that manifold, each of the mind's intuitions are themselves represented at distinct times, and that means the series of intuitions the mind has from one time to the next are also represented as a manifold. Like the manifold of sense, this manifold of intuitions must therefore be synthesized, and so, as the mind synthesizes the manifold of sense, it also synthesizes its representations of that manifold, and each one of these syntheses occur alongside the other, or take place concurrently. The crucial difference, however, is whereas the parts of the manifold given by sense are related to one another (or unified) according to some concept, the manifold of intuition is represented as a manifold when each of these representations are related to time, or, when they are ordered and connected with one another in time. This distinction should be kept in mind when reading the remarks that follow.

Now this synthesis of apprehension must also be exercised *a priori*, i.e., in regard to representations which are not empirical. For without it we could have *a priori* neither the representations of space nor of time, since these can be generated only through the synthesis of the manifold that sensibility in its original receptivity provides. We therefore have a **pure** synthesis of apprehension [A99/100]

Similarly, at the end of the discussion of the synthesis of reproduction, we are told:

Now it is obvious that if I draw a line in thought, or think of the time from one noon to the next, or even want to represent a certain number to myself, I must necessarily first grasp one of these manifold representations after another in my thoughts [*ich erstlich nothwendig eine dieser mannigfaltigen Vorstellungen nach der andern in Gedanken fassen müsse*]. But if I were always to lose the preceding representations (the first parts of the line, the preceding parts of time, or the successively represented units) from my thoughts and did not reproduce them when I proceed to the following ones, then no whole representation and none of the previously mentioned thoughts, not even the purest [*reinste*] and most fundamental representations [*erste Grundvorstellungen*] of space and time, could ever arise. [A102].

In these passages Kant claims that the syntheses of apprehension and reproduction are not only required for representing a manifold of sense as a manifold, both are also involved in the mind's *acquisition* of *a priori* representations of time and space. The syntheses of apprehension, reproduction, and recognition are applied to the contents given by sense, and are, to that extent, empirical syntheses; but we are told that this empirical synthesis of the manifold presupposes a pure synthesis which is applied "to representations which are not empirical" [A99], or, to what is intuited *a priori* and not sensed, namely time and space. The syntheses which generate the representations of time and space thus underlie the empirical synthesis of the manifold given by sense.⁵¹⁰

Now, clearly these passages directly pertain to the issue we are most interested in, namely, the non-empirical origin of the representation of time. Thus, Kant says that without the synthesis of reproduction, "not even the *purest and most fundamental representations of space and time could ever arise*" [ibid; my italics]; likewise, the synthesis of apprehension is required for forming *a priori* representations of time and space. Notice that it is the most *elementary* and *purest* representations of time and space which are said to presuppose the syntheses of apprehension and reproduction; and that these cognitive acts are what enable the mind to have *a priori* representations of time and

⁵¹⁰ Some commentators claim that the syntheses of apprehension and reproduction are in turn conditioned by the synthesis of recognition. If so, then we seem to face a real problem, for since the third synthesis is a function of the understanding, it would seem to follow that the representations of time and space must be intellectual concepts if they are generated through the syntheses of apprehension and reproduction. My own view is that the first two syntheses require each other, but do not require the third (at least not when the synthesis is pure rather than empirical), though I cannot defend this here. For a defense of this view, see Andrew Brook, *Kant and the Mind*, pp. 124-130. For the opposing view that the first two depend upon the third, see Beatrice Longuenesse, *Kant and the Capacity to Judge*, pp. 35-47.

space.⁵¹¹ We also noted above that the cognitive activity which is identified as the original source of these representations in ID, namely ‘coordination’, is connected to Kant’s notion of synthesis, and these passages appear to confirm this connection. Finally, and perhaps most crucially of all, notice the appearance in A102 of the word ‘after’, the *very* concept which Kant says we cannot have unless we first have a concept of time: in ID, we are told that the mind can only represent one thing *after* another if it first has a concept of time. Here, we are told that the various representations given by sense can only be apprehended one *after* another in thought (“eine...nach der andern in Gedanken fassen müsse” [A102]) by means of the synthesis of reproduction, and that this cognitive act, along with the synthesis of apprehension, is the very one responsible for generating the mind’s representation of time. Obviously there appears to be some connection here. The synthesis of reproduction is what first enables the mind to recognize that representations are appearing one *after* another, and this act of synthesis, together with the synthesis of apprehension, is also what originally enables the mind to first form the representation of time; and, in ID, it is the representation of time which enables the mind to represent one thing *after* another. If we put these points together, then what Kant appears to be asserting is that the synthesis of apprehension and reproduction are what originally enable the mind to first form the representation of time, and that the representation of time is what enables the mind to represent one thing *after* another. At the very least this is one possible interpretation, and in light of the other similarities just identified, it does not appear to be an unreasonable one. The similarities identified above strongly suggest that the passages just cited from the Deduction are at least of *some* relevance to our present concerns. And in that case, it seems that the remarks Kant makes in the A-Deduction about the origin of the representation of time may be used to shed light on his claim in ID that the ability to represent one thing after another presupposes a representation of time, or help explain *why* he thinks this is so. At the very least, it is not

⁵¹¹ Kant presumably stresses ‘a priori’ in A99-101, since he allows that we can also have empirical concepts of time and space, though these are acquired only after the mind has first generated the representations of time and space a priori by coordinating what is originally given by sense. See above.

In the argument in §14.1 of ID, as well as the first pair of arguments of the metaphysical exposition in the Transcendental Aesthetic, Kant argued that time and space are not empirical concepts acquired by abstraction from what is sensed. Strictly speaking, however, these claims are merely negative since all they assert is that these concepts were *not* acquired in a certain way; they certainly do not amount to any *positive* explanation as to how the concepts were originally acquired. One might naturally wonder, then, how exactly these concepts *are* acquired if not by abstraction from sensory experience: if they are not empirical concepts, then they must have been generated a priori, but how exactly does the mind originally acquire these concepts a priori? Putting these points together, it seems that in these passages Kant is explaining what was left unexplained or merely implicit in the original arguments for the non-empirical origin of the representations of time and space: namely, how is it that the mind generates the representations of time and space *a priori*. The same is true of the *Dissertation*: Kant first argues that time and space are not empirical concepts acquired by abstraction from experience, and he then infers that they are instead representations which are originally generated by the mind when it coordinates the sensations given through affection. But what is missing in the *Dissertation*, in contrast to the Deduction, is any detailed account which clearly links these two points together.

unreasonable to suppose that the passages just identified can provide us with some clues, or certain interpretive options, as to how the argument in ID may be interpreted.⁵¹²

Assuming, then, that these remarks from the A-Deduction may be used as evidence, how exactly can they help us understand the argument in §14.1 of ID? The best way to start is to focus our attention on what Kant has to say in A101 about how the mind represents one thing *after* another. Kant says that the synthesis of reproduction is required for “the various manifold representations...[to] be apprehended by me in thought one *after* the other” [ibid]. In other words, if a series of representations appear before the mind one after another in time, it is necessary that the mind reproduce each representation from one time to the next, for if the representations experienced at an earlier time are *not* reproduced in thought, the mind will never come to represent those that follow as representations which occur *after* the ones that appeared earlier. Note that Kant appears to acknowledge here that the mind is originally given a series of sensations in a temporal order (“...the manifold which sensibility presents in its original receptivity”); the problem, however, is that the passive reception of these sensations is not by itself sufficient to explain how it is that the mind comes to *recognize* that the sensation it has at the present moment is occurring *after* another sensation that occurred at the previous moment. Why exactly does Kant think this? Perhaps the best way to understand the force of this claim is to recognize that there is a distinction that must be drawn between having a sequence of representations and the representation of a sequence. This distinction is implicit throughout the discussion of the syntheses of apprehension and reproduction. A succession of representations does not amount to a representation

⁵¹² The further question of how these remarks from the A-Deduction can be reconciled with Kant’s general account of sensibility and understanding in the *Critique*—or even whether they can be made consistent at all, for all the reasons listed above—is one that we cannot hope to answer here. Fortunately, however, it also does not appear to be necessary for our present purposes that we do so, for even if the Analytic and Aesthetic are in fact inconsistent, for all the standard reasons given in the secondary literature, that does not mean the view defended in the *Dissertation* must also be incoherent. And in that case, it ultimately does not matter for our present purposes whether the *Critique* is some sort of patchwork, or whether the Aesthetic and Analytic are in fact consistent with one another after all, despite appearances to the contrary, for the alleged inconsistencies between the various parts of the *Critique* have no bearing on the position of the *Dissertation*. For our present purposes, what matters is whether these passages can provide us with *some* textual evidence which may legitimately be used for interpreting the argument in §14.1 of the *Dissertation*, and whether this evidence is stronger than the evidence which any of the alternative interpretations can adduce in their own favor. No doubt, the fact that these passages were only published twelve years after the *Dissertation* is certainly a ground for skepticism. But by citing them I do not mean to imply that Kant had already fully developed the argument of the Deduction when writing ID; and the fact that the argument which appears in these passages only appeared in print long after the publication of ID does not mean they do not provide us with any evidence *at all*. Indeed, Kant does appeal to the reproductive activity of the imagination to explain how the mind comes to perceive time in *Metaphysic L*, Ak 28:235-236, which is dated to the mid-1770s, and this suggests that Kant had already developed certain aspects of his view well before the *Critique*. Ultimately, however, insofar as the interpretation of the argument in §14.1 developed below is based on certain remarks found in these passages from the Deduction, and these remarks do in fact adequately explain the view first articulated in ID, our reconstruction will be based on evidence to be found in Kant’s very own texts, and that, it seems to me, does provide us with significant reasons for preferring the interpretation proposed below, even if these texts were only published a decade after ID. In any case, given the general obscurity of ID, as well as the dearth of other sources of evidence, these passages might just be the most that we have to go on.

of succession. One could have a succession of representations, of A_1 followed by A_2 , without representing them *as* a succession since it is possible that each representation might be “forgotten”, so to speak, as soon as the next one appears; but if the experience of A_1 is immediately forgotten as soon as one experiences A_2 , so that upon the experience of A_2 one takes oneself to be having an entirely new experience altogether, unconnected with the experience of A_1 , then, although one would have a sequence of representations, one would not have had a representation (or *perception*) of a sequence. A succession of representations is therefore not sufficient for a representation of succession, and if that is correct, a further explanation is required to account for how the latter idea is obtained when the mind undergoes a succession of representations.⁵¹³

This distinction provides us with an alternative way of interpreting the argument in §14.1 of ID. According to Kant, the reason why the mind cannot acquire the concept of time by first forming a concept of succession is because the mind cannot recognize that one representation occurs *after* the other unless it first has a concept of time. But the mind’s recognition that a succession of representations are occurring one after another is tantamount to representing this succession of representations *as a succession*. And in that case, what Kant is asserting is that the ability to represent a succession of representations *as a succession* presupposes that the mind first has a concept of time. Now, once it is recognized that the mind could have a succession of representations without any recognition that one occurs after the other, some further explanation is then required as to how the mind comes to represent these representations as a succession; and, if we apply the remarks discussed above from the A-Deduction, then what is also required, at the very least, is that the mind reproduce each individual representation from one time to the next. What we have thus far, then, is this: when the mind has a succession of representations, it cannot recognize that one representation occurs *after* another—or represent the succession of representations *as a succession*—unless it reproduces these sensations in thought from one time to the next.

Of course, this alone does not yet establish Kant’s conclusion, for even if it is true that the mind cannot form a concept of succession unless it reproduces the sensations it has from one time to the next, why should this fact also entail that the mind already has a concept of time? Or that the concept of succession presupposes the concept of *time*? In order to answer this question, the first thing to note is that to this point we have simply identified one condition which Kant thinks is required in order to represent a succession of representations as a succession: namely, they must be reproduced in thought from one moment to the next. But this is not the *only* condition. As the argument in §14.1 continues

⁵¹³ This distinction is well known and commonly drawn in the literature, especially in the context of Kant’s discussion of the three-fold synthesis in the A-edition of the Deduction. However, to my knowledge, no one has appealed to this distinction to explain the first argument of the metaphysical exposition of time. This is odd since the goal of that argument is to establish the a priori origin of the representation of time, as we have seen, and in the A-Deduction Kant claims that the representation of time is generated through the syntheses of apprehension and reproduction. One possible exception is Jay Rosenberg, *Accessing Kant*, pp. 70-73 who appears to suggest an interpretation which is similar to my own (see below), though he says far too little for one to be sure about this.

Kant proceeds to elaborate upon his initial claim that the representation of succession presupposes the concept of time. In particular, he explains *why* the concepts of succession and simultaneity presuppose the concept of time by noting that

...those things come after one another which exist at *different times*, just as those things are *simultaneous which exist at the same time*. [Ak 2:398-99].

The sense in which the concepts of succession and simultaneity presuppose a concept of time is just that the former both rest, in some way, on a prior notion of temporal location: in order for the mind to represent one thing after another as a succession, it must first represent those things at *different locations* in time, and likewise, two things can only be represented as simultaneous if they are represented at the *same location* in time. The way to understand this passage is to recognize that Kant is here identifying a further condition required to represent things as successive or simultaneous. Whereas the reproduction of sensations is one requirement necessary for representing a succession of sensations, the second requirement hinted at in this passage is that certain acts of localization are also necessary if the mind is to represent sensations as successive or simultaneous: in order for the mind to represent a series of sensations as successive or simultaneous, it must first distinguish the different times at which these sensations appear and represent them as existing in different parts of time. One can begin to understand why this further condition is necessary by recognizing that the mere reproduction of sensations in thought is not yet sufficient for representing sensations *as* successive. The reproduction of previously perceived ideas will not alone give rise to the idea of a succession unless each of the occurrences are thought of as having occurred at *distinct* times: the reproduction of A_1 while perceiving A_2 will not enable me to recognize A_2 as occurring *after* A_1 unless I also note that A_1 and A_2 occurred at different times. Without locating these experiences at different times, the reproduction of A_1 in thought would merely cause me to think that A_1 and A_2 were simultaneous, though they obviously are not; in that case, the mind would not have a perception of succession, but rather of an array of mental contents which overlap with one another. Now, if that is correct, then in order for the mind to represent these sensations as a succession, it must not only reproduce them in thought, it must also *understand* that these sensations occurred at distinct times. And in that case, when the mind has a succession of sensations, it not only reproduces them in thought, it also attaches the idea of the time at which they appeared: as the mind reproduces these sensations in thought, it *localizes* each of the sensations that appear from one moment to the next by representing them as having occurred at different moments of time.

Now, if we put these points together, then we can finally begin to understand why Kant thinks the concept of time is prior to the concept of succession. The basic argument may be reconstructed as follows. When the mind is affected, it undergoes a series of sensations, A_1 , A_2 , etc. A succession of representations does not, however, amount to a representation of succession, and so, in order to form a representation of succession, or represent A_2 *after* A_1 , the mind must reproduce each of these sensations in thought from one time to the next. But the reproduction of these representations in thought would never provide the mind with a representation of succession if the mind did not recognize

that each of these representations occurred at distinct moments of time. In order then to correctly reproduce the representations it has from one moment to the next, the mind must first identify the distinct times at which they occurred and localize each of these representations as it reproduces them in thought by representing them at different moments of time. But if the mind can only represent one thing after another by first representing those things at distinct moments of time, then it follows that the mind cannot form a concept of succession unless it first has a concept of time. The mind cannot represent one thing *after* another, or represent a succession of representations as a succession, unless it *understands* that one representation occurred at a time which is distinct from the time at which the other occurred; the mind cannot correctly reproduce representations unless it localizes these representations by representing them at different moments of time, and that entails that the mind must *conceive* of the times at which these representations occurred as it reproduces them in thought. But surely the mind could never conceive of the times at which these representations occur unless it has a concept of time. And so, if the mind must conceive of the times at which these representations occur before it can represent them as a succession, then the mind must have a concept of time before it has a concept of succession.⁵¹⁴

⁵¹⁴ On my interpretation, Kant's account of the origin of the representation of time appears to be an early version of a view later developed by Brentano and Husserl, and which is now referred to as 'retentionalism'. Though there are a number of different versions of this theory, the basic problem which retentionalism was designed to solve arises when one makes the following two assumptions: first, that what *exists* in the present lacks any temporal duration, and second, that what the mind is consciously aware of or *experiences* are temporally extended episodes, such as change, succession and duration. The problem, of course, is that if the present is instantaneous, and lacks temporal extension, then how is it that the mind becomes conscious of these temporally extended episodes? What retentionalists propose is that when the mind has an experience of some temporally extended episode, each of the separate moments which compose that episode must be combined together in a certain way; the mind's experience is not only composed of a discrete collection of momentary episodes, but also of an accompanying awareness of each of these episodes together as a kind of whole and it is this accompanying awareness which produces the experience of a temporally extended episode. What makes this awareness possible is that when the mind undergoes a collection of momentary episodes, each of the momentary episodes of the recent past are retained and then assembled by the mind in thought, so that, although what exists at each moment lacks temporal duration, what the mind experiences as a result of these retentions is a temporally extended episode: what the mind experiences, *at a single moment*, is an awareness of the collection of these momentary episodes packaged together as a temporally extended series. The basic idea is usually illustrated by means of a concrete example, originally due St. Augustine. Augustine is often identified as the progenitor of retentionalism, and Kant was presumably familiar with his account since he cites his discussion of time in the *Prize Essay* [Ak 2:283-284]. Augustine illustrates the basic idea by focusing on what the mind experiences when it hears the expression "Deus Creator Omnium." When someone hears this expression, they not only experience the enunciation of each of the individual syllables which compose that utterance, they also become aware of the entire phrase as a whole. This, however, is a complex achievement which cannot be explained solely by the fact that the mind hears each of the syllables in the utterance one after another. In order to express the entire phrase, each of the individual syllables which comprise it must be enunciated separately, one after another, and each syllable that is expressed ceases to be present as soon as the next one is uttered—and necessarily so, since otherwise we would hear all of them together in a chaotic jumble. Now, the mind would never manage to hear the entire expression if it did not retain in thought each of the syllables that are uttered from one moment to the next: if the first syllable 'De' were to drop out of thought entirely when the next syllable 'us' were uttered, and 'Cre' were forgotten as soon as the mind heard 'tor', then although the mind would hear each of the syllables in the utterance taken separately, it would never become aware of the entire

According to our reconstruction, the reason why the concept of succession presupposes a concept of time is because the mind cannot represent a succession of representations as a succession unless it first conceives of the distinct times at which each of these representations occur. This might lead one to wonder whether this interpretation is all that different from Falkenstein's. Recall that on his interpretation, Kant's basic point is that one cannot represent one thing after another unless sensations are first given to the mind in a temporal order, and that the mind must therefore represent these sensations in distinct temporal locations before it can represent their temporal relations. The main difference, however, is that on my reading sensations only come to be represented in temporal locations by virtue of the mind actively relating them to one another in thought. It is certainly true that sensations are given to the mind in a temporal order, and it is even true that the mind arranges these sensations according to the order in which they are given, so that the time at which each sensation is represented also depends, to that extent, on sense. Nevertheless, as we have argued, the mind does not acquire a representation of time by simply receiving a succession of sensations, for if the mind did not actively connect the sensations which appear at one time to the sensations which appear at the next, and, in doing so, represent each of these sensations at different moments of time, it would never form a representation of time. When sensations are reproduced in thought, and assigned to different moments of time, what is generated is a representation of a multiplicity of representations which are ordered and connected to one another in a certain way: within a single moment of time, the mind has a representation of a plurality of representations, these representations are conceived of together as a kind of whole, and each of the parts of this whole are represented as being ordered in relations of succession and simultaneity.⁵¹⁵ The crucial point that needs to be

phrase as a whole. The mind would only have a series of disconnected impressions from one moment to the next, and each individual syllable would be like a new experience altogether, unconnected with the previous one. And in that case, the mind would only be aware of the individual auditory impressions occurring in the present, and never of the entire utterance. Insofar as the entire sequence of elements is never simultaneously present as an immediate object of experience, the mind must retain these syllables in thought as they cease to be present from one moment to the next—the utterance of each individual syllable cannot drop out of thought in the same way they drop out of the present. And, what this also presupposes is that each of the occurrences are thought of as having occurred at distinct times: the mind must conceive of each retention as standing for something which occurred at a distinct moment of time, for otherwise, it would never represent the series of utterances as a sequence. What happens, then, when the mind hears this utterance is that it has a representation which exists at a single moment of time, but whose content is of a multiplicity of temporally ordered parts—the mind represents this temporally disparate information in a single moment. For Augustine's retentionalism, see *Confessions*, XI.xx.26 and xxvii.35. For a brief discussion of the historical antecedents of retentionalism, along with an overview of the problem of temporal consciousness in general (and retentionalism in particular), see Barry Dainton, "Temporal Consciousness", *Stanford Encyclopedia of Philosophy*. Dainton likewise identifies Kant as an early proponent of retentionalism.

⁵¹⁵ Though we have mainly focused thus far on the role played by the synthesis of reproduction in the generation of the representation of time, it is important not to overlook the synthesis of apprehension, which is also necessary: when the mind has a succession of representations, it not only reproduces each representation in thought, it also must apprehend or conceive of this plurality of reproduced representations together as a whole, and this, of course, requires the synthesis of apprehension. Putting this together with the results obtained above, we are now in a position to explain the sense in which the representation of time is generated through these acts of synthesis. When the mind has a succession of

recognized is that the representation of their locations is something that is only generated when the mind represents them together, in a single moment, in various relations to one another. The locations of each of these sensations consists in the relation they have to one another, and it is only when the mind reproduces these sensations in thought that it also comes to represent the different times at which they occur. The representation of time and the temporal locations of sensations is thus actively constructed through coordination, not passively received when the mind receives a succession of sensations one after another.⁵¹⁶

This reconstruction of Kant's argument puts us in a position to understand why time is not an empirical concept. The concept of time is empirical if the content of that representation is either given *directly* by sensation, or if that content is *abstracted* from what is given by sense. Since what is originally given to the mind through affection is a succession of sensations which appear one after another in time, if the concept of time is given directly by sensation, then it must be acquired from the experience of a succession of sensations.⁵¹⁷ But the mind cannot acquire a concept of time by simply observing the

representations, it combines each of them in thought; the product of these acts of synthesis is a representation of a plurality of representations, in which each of these representations are conceived of together as a kind of whole (through apprehension), and whose parts are represented as being ordered one after another as a succession of moments (through reproduction and localization). That is how the representation of time is generated through the syntheses of apprehension and reproduction. Moreover, earlier we noted that Kant describes coordination as a cognitive act which consists in combining parts to form a representation of a whole, and that coordination is connected to Kant's later notion of synthesis. And now, it seems likely that the very same explanation for how the syntheses of reproduction and apprehension generate the representation of time can also be used to explain the sense in which the mind generates this representation by coordinating parts to form the representation of a whole. The difference, in other words, is merely terminological, since the underlying view appears to be the same in both cases.

⁵¹⁶ Falkenstein's interpretation does however highlight an important point: namely, if sensations have to be given to the mind one after another before it can form a representation of time, then it seems that sensations cannot be non-temporal, even if they may be intrinsically non-spatial. From this, some have argued that there is no way to combine the claim that the representation of time is generated through the coordinating activity of the mind, together with the further claim that time is nothing more than a mind-dependent representation: if sensations must exist in time before the mind can coordinate them (and would certainly continue to exist in time even if the mind did not coordinate them), then it seems that time must also exist independently of the mind's coordinating activity, and that, in turn, appears to conflict with Kant's view that time is *nothing more* than a representation. But whether or not this objection is truly decisive depends, in large part, on how we interpret Kant's transcendental idealism—if Kant were not an idealist, there would be nothing problematic in assuming that sensations are given to the mind one after another in time before it can coordinate them so as to form a representation of time. The problem, in other words, has to do with whether Kant's account of the origin of this representation is consistent with his view on the metaphysical status of time, and these are of course different questions. For now, I will only note that on my interpretation, the coordinating activity of the mind does not explain how sensations come to *exist* in time, it only explains how the mind comes to *represent*, or conceive, of the temporal order of these sensations. The sensations given through affection certainly *exist* in a temporal order, but the question here is: how does the mind come to *represent* these sensations as a temporal order? On my view, this is not accomplished by simply passively observing these sensations as they appear in the mind one after another, but only when the mind processes these sensations by coordinating them in thought. The temporal order of sensations is not a product of the coordinating activity of the mind, though the mind's *awareness* of that order is.

⁵¹⁷ We may dismiss the possibility that the concept of time is given by simply observing the content of the sensations given through affection, both because time is not something sensed, and, since one and the same

succession of representations given by affection, or by passively undergoing a succession of states; it is certainly possible, after all, for the mind to experience a succession of sensations without forming any representation of time, for if the mind did not actively reproduce these sensations in thought, and localize each of these sensations by representing them at distinct moments of time, it would never have any consciousness of time, or become aware of the succession of sensations given by affection *as* a temporal order. It is certainly true that the mind only begins to form the representation of time upon the occasion of experience, and could never generate this representation unless sensations were first given to it through affection. But while sensory experience is undoubtedly a necessary condition for forming a representation of time, it is not itself sufficient, for the content of this representation is not derived from anything given by the senses *alone*. The mind can only form a representation of time by *actively* coordinating the sensations given by affection, for without this act of cognition, which is itself made possible through an innate disposition present in the mind from birth, the mind would never represent the succession of representations given by sense *as* a temporal order. The representation of time is not, therefore, given directly to the mind through sensation from the experience of a succession of sense-impressions, for it is only through the mediation of the mind's own acts of coordination that these sensations come to be *represented* in time *as* a temporal order. The original source of this representation is thus to be found in the innate constitution of the mind, rather than the impressions given by sense.⁵¹⁸ Likewise, the concept of time cannot be originally acquired by *abstraction* from what is sensed. In order to obtain the concept of time through abstraction, the mind would first have to represent the sensations given by affection as a succession, and then conceive of the order in which these sensations appear independently of the sensations that succeed one another. But if the mind cannot even *begin* to represent a succession of sensations *as* a succession without *first* having a concept of time, then obviously the concept of time cannot be acquired by abstraction from what is given by sense. The concept of time cannot,

sensation can appear at any moment of time without changing any of its intrinsic qualities, the time at which a sensation appears cannot be inferred by inspecting its qualitative features.

⁵¹⁸ For both Wolff and Baumgarten, the mind is passive through sense, and sensations are representations of the *present* state of the world: Baumgarten, *Metaphysica*, §534 writes that “The representations of my present state, or SENSATIONS...are representations of the present state of the world”; and Wolff, DM, §823, writes that “Die Empfindungen sind gleichfalls nichts anders als Vorstellungen des gegenwärtigen Zustandes der Welt, wenn ich nemlich alles zusammen nehme, was die Seele auf einmahl empfindet.” If the content represented by sensation is always present, then sensations cannot directly provide the mind with the representation of succession: the representation that A₂ occurred after A₁ could only be given by sensation if the contents of these representations were present together; but obviously since these sensations occur sequentially, A₂ can only be present when A₁ is past, and so, when the mind senses A₂, it is no longer sensing A₁. When the mind has a sequence of sensory representations, of A₁ and then A₂, A₁ is no longer present when the mind begins to represent A₂. But then it follows that the representation of A₂ *after* A₁ cannot be given directly by sensation. Instead, the representation of these sensations as successive requires that the mind actively coordinate them: if A₁ were to drop out of thought entirely when the mind began to sense A₂, it would not recognize that A₂ occurred *after* A₁, but would merely conceive of it as a new experience altogether, unconnected with the previous representation of A₁. And, as the content of this representation is given through a certain *act* of the mind, it cannot be due to sense since the mind is always passive through that faculty.

therefore, be an empirical concept which was originally acquired from the experience of a succession of sensations.

Finally, if this interpretation is correct then it is also easy to understand why Kant rejects the Leibnizian-Wolffian account of the origin of the concept of time. There are two basic problems with this account. The first problem is that the acts of understanding which Wolff appeals to in order to explain how the mind forms a concept of succession presuppose certain other cognitive activities which are more basic. Wolff claims that the mind forms the concept of succession by comparing and contrasting the succession of ideas given directly through affection—that we determine that the ideas given by sense exist at different times by first apprehending them as different. But in order for the mind to be in a position to compare a succession of ideas, of A_1 followed by A_2 , and to determine that the existence of A_2 is distinct from the existence of A_1 , A_1 must be reproduced in thought, for obviously the mind cannot *compare* one idea with another if the first has not been retained in thought at all. And, the mind could never be in a position to compare and contrast these ideas, and recognize that they are different, unless it first apprehends that they exist at different times, and thus coordinates them by representing them at those times. The ideas given by sense cannot, then, be subjected to the kinds of analysis performed by the understanding unless they are first coordinated. But if the application of these acts of the understanding is *posterior* to the coordinating activities of the mind, then one can understand why Kant rejects Wolff's claim that the concept of time is obtained through the logical use of the understanding: since there are certain other cognitive activities which the mind must perform on the sensations given by affection before the understanding can compare and contrast these ideas—acts of *coordination*, rather than the kinds of acts characteristic of the understanding—it follows that Wolff's account is inadequate, since he misidentifies the faculty responsible for generating this concept. Moreover, unlike other interpretations, our reconstruction also explains why Wolff's account is circular, and in the very way that is required, namely, as a genetic account of how the mind obtains a concept of time. Wolff claims that the mind obtains a concept of time by first forming a concept of succession; but, as we have shown, before the mind can have a representation of succession, it must first localize each of the sensations that appear from one moment to the next by representing them in thought at distinct locations in time. The mind cannot, then, form a concept of succession unless it coordinates the sensations given by affection; and, since these acts of coordination presupposes that the mind already has a concept of time, Wolff's claim that the mind forms a concept of time by first forming a concept of succession is thus circular. The mind cannot acquire a concept of time by first obtaining a concept of succession, for the ability to represent a succession of representations as a succession, and thus form a concept of succession, presupposes that the mind already has a concept of time.⁵¹⁹

⁵¹⁹ One might wonder whether the acts of coordination which generate the representation of time are really just the faculty of memory by another name. After all, aren't the representations reproduced in thought just memories? And don't memories require a recognition that the content remembered occurred at a time in the past? If so, then one might begin to wonder whether our reconstruction really does succeed in refuting

§4.6: *Objections & Replies*

In the first section of this chapter, we noted that there are three main objections to the arguments in §14.1 and §15.A. The first major problem we identified in our initial discussion of these arguments is that Kant appears to be confusing at least two distinct notions of priority, specifically psychological and definitional priority, and that it is not clear how these notions are connected. To this point we have devoted our attention almost entirely to the question of how the arguments in §14.1 and §15.A are used to demonstrate the psychological priority of the concepts of time and space, and have left aside the further question of whether these arguments also show that time and space are prior in the order of definition to the concepts of spatiotemporal relations (as Kant himself seems to believe), and if so, then how. But rather than deal with this question in the present section, we will leave it aside until the next chapter. In spite of initial appearances, a careful inspection of this aspect of Kant's argument will reveal that it turns on certain considerations which pertain to his demonstration that time and space are not concepts of the *intellect*. And since the arguments for that thesis are the subject of the next chapter, it is best to hold off on our discussion of this aspect of Kant's argument until then.⁵²⁰ In this section, we will thus restrict our attention to the other main objections identified in §4.1, and show how the interpretation defended in §4.3 and §4.4 provides us with a response to both the triviality objection and the Feder-Maaß objection.

The first standard objection is that Kant's arguments are somehow tautologous, though as we have observed over the course of our discussion, there are really several different variations of this objection, and each version, as well as the standard responses, are based on different interpretations of the arguments. Thus, according to some commentators, Kant's claim that the representation of space is required in order to

Wolff. After all, Wolff, DM, §733-736, recognizes that the mind cannot distinguish the things it perceives unless they are retained in thought from one time to the next, and that this requires, in turn, that the mind also distinguish between the moments of time at which each of these things occur. And both of these cognitive acts are done through the faculty of memory. How then is Wolff's position really any different from Kant's? The answer to these questions is that the acts of coordination responsible for generating the representation of time cannot belong to the faculty of memory since they appear to be even more basic. Thus, we remember events that we have *previously experienced*, such as my memory of having seen the car drive across the street. But we cannot have experiences at all unless we first perceive something *as* an event, and for Kant, the acts of coordination responsible for generating a representation of time are what make this possible: an event is always composed of a number of distinct temporal parts, and it is only when the mind coordinates the representation of each of these parts that it comes to perceive this event *as* an event. And only then can the mind subsequently remember the event *as* a memory. It would be a mistake to claim that these acts of coordination are the same as memories: we do not perceive each of the stages that make up an event *as* memories, for phenomenologically the experience of the event is not the same as remembering it, nor are the stages of that event experienced as memories when they are no longer immediately present. The acts of coordination are thus distinct from memory. And so, even if Wolff recognizes that the mind is capable of reproducing previously experienced ideas in thought through memory, he does not recognize that there are other cognitive acts even more basic which make these memories possible in the first place.

⁵²⁰ Other important issues, such as the problem of coordination, the Mendelssohn-Lambert objection, and the question of whether Kant's theory concerning the origin of the representations of time and space is consistent with his transcendental idealism I leave aside for another time.

represent things “outside me” and “outside and next to one another” is trivial since “outside” and “next to” cannot be understood in any way that does not already make a tacit reference to space, and the same is true for his claim that representing things as simultaneous or successive presupposes a representation of time. The arguments are thus trivial since they allegedly amount to nothing more than the claim that things cannot be represented in space and time unless they are represented in space and time. But the correct response to this objection is that it simply misinterprets Kant’s basic argument. Kant is not arguing that things cannot be represented in space and time without representing space and time, his argument is that the mind cannot represent spatiotemporally related sensible objects unless it first represents them in distinct spatiotemporal locations. Whatever one might make of this claim, it is certainly not trivial.⁵²¹ There are, of course, other versions of the objection which can be raised against this interpretation as well: if, for example, the spatiotemporal locations of sensible objects are defined in terms of their spatiotemporal relations, as the Leibnizians maintained, then representing things in space and time involves nothing more than representing them in spatiotemporal relations, and in that case Kant’s argument ends up being trivial after all. But this objection, like the first, is again based on a misinterpretation. Kant’s argument is that the mind could never even begin to represent sensible objects unless it first localizes the sensations originally given by affection by projecting them onto distinct spatiotemporal locations. It is in that sense alone that the representation of spatiotemporally related sensible objects presupposes that things are first represented in time and space, and this does not necessarily entail that the locations of these appearances are represented as anything other than the relations they have to one another. When properly interpreted, what Kant is asserting is that the sensations originally given by affection cannot provide the mind with any representations of space or time, or of sensible objects standing in spatiotemporal relations, for it is only through the coordinating activity of the mind that sensations come to be represented outside the subject in spatiotemporal locations; these acts of coordination are what generate the representations of time and space, and they presuppose that the concepts of time and space are present in the mind from birth. In the case of space, Kant’s argument rests on the assumption that the sensations originally given through affection are non-spatial, and

⁵²¹ Cf. Falkenstein, *Kant’s Intuitionism*, pp. 169-172, who responds to this charge by noting that Kant’s argument turns on the claim that the mind’s apprehension of spatiotemporal relations is not based on any inspection of the intrinsic qualities of their relata, but instead on the order in which they are presented in experience, and that this is not a trivial claim. Another standard response to this version of the objection is due to Allison, who rejects the assumption that “ausser mir” and “ausser und neben einander” can only be understood through the concept of space. On Allison’s interpretation the reason Kant’s arguments are not tautologous is because the representations of time and space are required to become aware of objects that are numerically distinct from the self and its own inner states, as well as to distinguish those objects from one another; and, as Allison correctly notes, since it is logically possible for there to be some form of non-spatial, non-temporal awareness of numerically distinct objects, “outside of” and “apart from” need not mean “in space”. But since we have already demonstrated that Allison’s interpretation is mistaken, this cannot be the correct response to the triviality objection: Kant’s central concern in the arguments of §14.1 and §15.A is not with the question of how the mind distinguishes between numerically distinct objects, but with localization.

that some explanation is thus required as to how these sensations come to be represented outside the subject in spatial locations; and, in regards to time, while the sensations originally given through affection are temporal, the mind cannot represent them as either successive or simultaneous unless it first reproduces and localizes them in thought by representing in distinct moments of time. In both cases, Kant's central claim is that the mind must have an innate capacity to coordinate the sensations originally given by affection if it is to form the representations of time and space since the presence of these sensations alone cannot explain how the mind comes to form these representations. It is certainly possible that these sensations could exist in the mind without ever being coordinated, and it is a contingent fact about the nature of the human mind that it is innately constituted to project sensations onto distinct spatiotemporal locations. Whatever one might think of the arguments given to establish these conclusions, certainly none of these claims are trivial or tautologous.

As for the Feder-Maaß objection, recall that the basic charge is that even if there is some non-trivial sense in which the representations of spatiotemporally related sensible objects presuppose the representations of time and space, Kant has not provided any persuasive reason to think that the latter must be non-empirical. Indeed, given certain plausible assumptions which Kant himself accepts, it seems that these representations must be empirical. After all, if the representations of time and space are not present in the mind prior to all experience, then the mind can only begin to acquire them upon the occasion of experience; moreover, the representations of time and space are always bound together with the representations of spatiotemporally related sensible objects. But if the mind always represents space and time together with spatiotemporally related appearances, and these representations only enter the mind upon the occasion of experience, then it seems that the mind must have originally obtained these concepts by abstracting them from the representations it has of spatiotemporally related sensible objects. At the very least, the non-empirical origin of these representations certainly does not follow from Kant's claim that the representations of spatiotemporally related sensible objects depends upon the representations of time and space, at least not in any obvious way, for it seems that one can grant this premise and still allow that they are empirical concepts originally acquired by abstraction.

This objection is somewhat more complicated than it may appear to be at first sight, for there are really a couple of distinct issues being raised here all of which are connected in different ways to the central question of whether the representations of time and space are non-empirical. In order to deal with it properly it will be necessary to break it down step by step. To begin, the first reason given by Maaß and Feder as to why the representations of time and space must be empirical turns on the fact that the mind only comes to acquire these representations upon the occasion of experience. The implicit argument here is that (1) every representation is either empirical or innate, and, (2) if some representation is innate, then it must exist in the mind prior to any experience at all. Since Feder and Maaß both claim that it is absurd to suppose that the mind has fully formed representations of time and space before it begins to have any experiences, they

infer that the concept must be empirical. Now, as we have repeatedly observed, Kant *agrees* that the mind only begins to form the representations of time and space upon the occasion of experience: the representations of time and space are not temporally prior to the representations of spatiotemporally related sensible objects, for it certainly isn't the case that the mind *first* forms the representations of time and space and *then* representations of spatiotemporally related sensible objects, and it is certainly not the case that the mind has fully formed representations of time and space before it begins having any experiences at all. But if the mind only comes to acquire these representations when it begins having sensory experiences, why are they not empirical?

The response to the first part of the Feder & Maaß objection is that they fail to distinguish two distinct senses in which a representation might be innate: while it is true that the mind does not possess occurrently innate representations of time and space, it does not follow that these representations are not dispositionally innate. In light of this distinction, it is a mistake to infer that the representations of time and space must be empirical simply because they do not exist in the mind prior to all experience. A representation might still be dispositionally innate even if the mind does not explicitly form that representation until it begins having certain experiences. While Kant certainly agrees that the mind does not possess any representations of time and space before it begins to have any experiences, he nevertheless insists that they are products of an *innate faculty* or “law of the mind according to which it combines in a fixed manner the sense produced in it by the presence of an object” [Ak 2:393]; the representations of time and space are generated “from the very action of the mind, which coordinates what is sensed by it, doing so in accordance with permanent laws” [Ak 2:406; Cf. Ak 2:401-402]. Since the representations of time and space only arise by virtue of certain innate laws that are built-in, or hard-wired, into the mind as a part of its own innate endowment, they are not empirical but innate, albeit dispositionally rather than occurrently. Indeed, this is the very point Kant makes in his response to the Feder-Maaß objection in his *Entdeckung*.

The *Critique* admits absolutely no implanted or innate *representations*. One and all, whether they belong to intuition or to concepts of the understanding, it considers them as *acquired*. But there is also an original acquisition (as the teachers of natural right call it), and thus of that which previously did not yet exist at all, and so did not belong to anything prior to this act. According to the *Critique*, these are, *in the first place*, the form of things in space and time, *second*, the synthetic unity of the manifold in concepts; for neither of these does our cognitive faculty get from objects as given therein in-themselves, rather it brings them about, *a priori*, out of itself. There must indeed be a ground for it in the subject, however, which makes it possible that these representations can arise in this and no other manner, and be related to objects which are not yet given, and this ground at least is *innate*. [Ak 8: 221-222]⁵²²

⁵²² It is worth noting that one must exercise caution in citing this piece since the *Entdeckung* appeared after the *Critique*, and some have thought that Kant's views on the acquisition of the representations of time and

Before we proceed any further, it will be useful to introduce one additional clarification. It is important to distinguish between the mind's *representations of* time and space, where these correspond to the intentional content of the mind's sensory intuitions of the form of sensible appearances, and the *concepts* of time and space, where these are the innate dispositions present in the mind from birth which enable it to coordinate the sensations given by affection in a spatiotemporal order. The representations of time and space are not occurrently innate since the mind does not have representations of these entities prior to experience; it is only when sensations are first given through affection that the mind begins to generate these representations by coordinating sensations. The representations of time and space are nevertheless dispositionally innate since they are generated through an innate capacity present in the mind from birth to form these representations under certain conditions. The acts of coordination which generate these representations are certainly not acquired abilities which the mind learns over the course of experience⁵²³; they are made possible by an innate faculty or disposition which is hard-wired into the mind from birth. And crucially this disposition is not a *bare* disposition, or a mere capacity which is empty of all content; it is a disposition which is circumscribed or structured in highly specific ways, namely, to coordinate sensations by representing them in spatiotemporal locations. As we argued in Ch. 1, Kant identifies the *concepts* of time and space with this innate law or disposition.⁵²⁴ The fact that this disposition is structured so as to enable the mind to coordinate sensations by ordering them in spatiotemporal locations is what entails the presence of a certain latent, conceptual content which is tantamount to the concepts of time and space. The concepts of time and space are what underlie these coordinating activities, and the mind must have some underlying, implicit grasp of these concepts from birth, however latent it might be. The concepts of time and space are thus innate, but only in the sense that they are present in the mind from birth as the conceptual content which underlies the innate disposition which enables the mind to coordinate sensations by projecting them onto spatiotemporal locations.

space in this period have radically changed from the position previously endorsed in ID. Indeed, Falkenstein claims that the passage just cited *undermines* the view defended in ID, for no sooner does Kant claim that the representations of time and space are due to an original acquisition before adding the qualification that this acquisition consists in nothing more than the characteristic receptivity of the subject.

The ground of the possibility of sensible intuition...is the merely particular *receptivity* of the mind, where it receives representations in accordance with its subjective constitution, when affected by something (in sensation). Only this first formal ground, e.g., the possibility of a representation of space, is *innate*, not the spatial representation itself. [Ak 8:222]

Rather than attributing the origin of these representations to an innate *activity*, Kant tells us that they are grounded in the mind's characteristic *receptivity*, a claim which supports Falkenstein's reading that the forms of intuition correspond to the order in which sensations are received, rather than orders that are actively constructed. Falkenstein, *Kant's Intuitionism*, pp. 91-96 further claims that this terminological shift is consistently maintained throughout Kant's later works, that the "innate ground that determines the appearance of space and time is, he tells us, not a mechanism for *producing* spatiotemporal order out of sensory experience; rather, it is a ground for *receiving* sensory experience" (ibid, p. 92).

⁵²³ Indeed, they couldn't be in principle, since the mind could not even *begin* to have experiences unless it first has representations of things in time and space. These abilities must, therefore, be innate rather than acquired (or learned over the course experience).

⁵²⁴ See Ch. 1, pp. 38-41 and Ch 2, pp. 31-39.

This response does not yet fully address the concerns raised by Feder & Maaß. Indeed, as Feder himself notes, it is a standard nativist move to admit that innate representations only arise upon the occasion of experience and that sensations are thus necessary in order to stimulate the mind to first form (and then become conscious of) the representations present in the mind from birth. But although it is true that the mind can only acquire a representation if it has the capacity to do so, this alone does not give us any reason for thinking that a representation is in fact innate if experience can account for the origin of the representation equally well. Merely distinguishing between representations that are dispositionally as opposed to occurrently innate is not sufficient to answer the original objection, for some additional reason is still required for thinking these representations could not have been acquired from experience.⁵²⁵ Many commentators have responded on Kant's behalf by arguing that this response fails to recognize the precise sense in which the representations of time and space are supposed to be non-empirical. While it is true that the mind only forms these representations after it begins having experiences, the reason they are not empirical is because they are not given to the mind by simply observing any of the materials provided by sense. Though certain kinds of sensory experiences may be required to take place before the mind forms these representations, they could never have been derived from those sensory experiences *alone*. But while this response is somewhat standard in the literature,⁵²⁶ it is important to note that it does not yet refute the Maaß-Feder objection unless we are given some *positive reasons* for thinking that these representations are not obtained by observing the sensory materials given through by affection. It is one thing to say that a representation cannot be empirical if it is not given to the mind by directly observing the sensory materials provided by sense, and another thing altogether to explain why the

⁵²⁵ As Feder, *Ueber Raum und Caussalität*, p. 59 puts it

Die gemeine-und alte Antwort der Vertheidiger angeborener Begriffe, daß Empfindungen wohl nöthig sein zum **Aufwachen** oder **Klarwerden** der vorher in der Seele schlummernden, oder ohne Bewußtsein vorhanden gewesenen Vorstellungen, keinesweges aber dieselben erst erzeugten oder gründeten-möchte freilich auch hier wohl benutz werden wollen. Aber diese Antwort ist eine Zuflucht zu einer scholastischen **qualitas occulta**. So lange wenigstens, als noch nicht gezeigt worden ist, daß in den angeboren sein sollenden Vorstellungen das Mindeste enthalten ist, was nicht aus den sinnlichen Eindrücken, und innern Gefühlen erklärbar ist; so lange ist es nicht erlaubt, solche vor aller Empfindung in der Seele vorhandene schlummernde Vorstellungen anzunehmen; denn es hieße etwas ohne Grund annehmen.

⁵²⁶ See Frederick C. Beiser. *The Fate of Reason: German Philosophy from Kant to Fichte* (Cambridge, MA: Harvard University Press, 1987), pp. 182-183; Lorne Falkenstein, *Kant's Intuitionism*, pp. 172-174. Although both Beiser and Falkenstein give this response, Falkenstein is especially notable for his attempt to explain the positive force behind Kant's argument. On his account, Kant's response to the objection turns on the fact that there is nothing about the qualitative properties of our sensations which tell us anything about the spatiotemporal order in which they appear, for one and the same sensation can appear in any part of time or space without changing any of its intrinsic features. Since their qualitative properties remain invariant, it follows that the spatiotemporal order of sensations cannot be inferred by inspecting those properties. Though I agree that this is something that Kant would accept, I do not think this solution will suffice as an answer to Maaß's objection, at least not for the interpretation of Kant's position in ID. On Falkenstein's reading, the spatiotemporal order of sensations is given by affection, even though it is not itself a sensation or derivable by inspecting the qualities of sensation. His general interpretation thus conflicts with the impositionism of the *Dissertation*, for reasons we have already considered, and that means it cannot succeed as a defense of Kant's view in ID.

representations of time and space are one of those concepts. And this appears to be especially difficult in the case of these representations. By comparison, whereas the concepts of substance, number, etc. or any others which belong to the real intellect are assuredly non-empirical, since they are not contained in sensible appearances as their determinations, the representations of time and space are a part of the intentional content of our sensory representations, and are contained or present in the representations we have of sensible appearances. Why, then, are they not empirical?

It is precisely here, I claim, that our reconstruction of Kant's arguments provide us with an explanation which manages to answer the Feder-Maaß objection in a way that competing explanations cannot. For Kant, if a concept is empirical then it must either be given directly by inspecting the contents of a sensation or indirectly by abstraction from what is given by sensation (thus, the concepts of metaphysics are not empirical since they are contain nothing sensual). While it is true that space and time are represented alongside sensible appearances, the mind only comes to generate these representations by coordinating the sensations originally given through affection. But the representation of space cannot be given directly through sensation, for the sensations originally given through affection are intrinsically non-spatial. Sensations only come to be represented outside the mind as the sensible qualities of appearance by virtue of the mind's own activity. The representation of space, is not acquired by anything given directly through affection, it is generated by the mind itself when it coordinates the sensations upon the occasion of experience. And it is certainly not given by abstraction from the representation of spatially related sensible appearances, for the mind could never even begin to represent those objects unless it first coordinates the non-localized sensations given by affection. As for time, what is originally given to the mind through affection is a succession of sensations which appear one after another. So, if the representation of time is given directly by sensation, then it must be acquired from the experience of a succession of sensations. But the mind cannot acquire a representation of time by simply observing the succession of sensations given by affection, or by passively undergoing a succession of states; it is certainly possible, after all, for the mind to experience a succession of sensations without forming any representation of time, for if the mind did not actively reproduce these sensations in thought, and localize each of these sensations by representing them at distinct moments of time, it would never have any consciousness of time, or become aware of the succession of sensations given by affection *as* a temporal order. The representation of time is not, therefore, given directly to the mind through sensation from the experience of a succession of sense-impressions, for it is only through the mediation of the mind's own acts of coordination that these sensations come to be *represented* in time *as* a temporal order. But if the mind cannot even *begin* to represent a succession of sensations *as* a succession without *first* having a concept of time, then the concept of time cannot be acquired by abstraction from what is given by sense. And the concept of time cannot, therefore, be an empirical concept.

Chapter 5

Whereas the first pair of arguments in Sec. 3 are devoted to showing that the concepts of time and space are non-empirical, in the second pair Kant attempts to demonstrate that they are not concepts of the intellect. If successful, what these arguments show is that the concepts of time and space have a rather peculiar status. Like the concepts of the intellect, they are not acquired by abstraction from what is given by sense; but in spite of the fact that all of these concepts originate in the innate activity of the mind, the concepts of time and space are *sensory*. The goal of this final chapter is to complete our discussion by reconstructing the arguments Kant gave to establish this second major thesis about the concepts of time and space.

It should be noted from the outset that my interpretation of Kant's basic argumentative strategy is quite unorthodox. On the standard interpretation, the reason the concepts of time and space are sensory is because they are *singular*, rather than *general* representations. But the problem with this interpretation is that it assumes the distinction between the faculties of sense and intellect is based on whether the intentional content of a representation is singular or general, which cannot be true if the interpretation we defended in Ch. 2 is correct. Recall that in Ch. 2 we argued that for Kant the distinction between sense and intellect is based on certain fundamental differences in the nature of the things the mind represents, in particular, on whether the intentional content of a representation is abstract or concrete. If this is correct, then the question of whether the representations of time and space are intellectual depends on whether their intentional content is abstract or concrete, not on whether they are singular or general. In our earlier discussion, we argued that the difference between the abstract and the concrete is not definable in terms of some other, more basic distinction, but that it is instead grounded on primitive differences that can only be defined through ostension by reflecting on the intentional contents of our representations. What Kant is proposing, in other words, is that if we reflect on the intentional content of those concepts which he designates as 'abstract', and compare them to the intentional content of time and space, we will observe an irreducible difference in kind which cannot be defined in terms of anything more basic, but which depends on our direct apprehension of the fundamental difference between these intentional contents. Whatever it is, then, that makes the concepts of the intellect abstract, and time and space concrete, and thus sensory, is something primitive which can only be defined through ostension.

Given how far this interpretation departs from the standard reading, and how unusual it may appear to many readers, it will be useful to describe it in somewhat more detail before we turn our attention to the specific arguments Kant employs to show that time and space are not concepts of the intellect. In order to shed further light on my interpretation, I would like to approach the issue of whether the concepts of time and space are intellectual or sensory from a slightly different vantage point. Alongside his distinction between the faculties of sense and intellect, Kant draws a further distinction between appearances and things in themselves: the intentional content of a representation is an appearance when it depends upon the subject for its existence, and a

thing in itself when it exists independently of the representing subject. Now, one crucial thing to note about each of these distinctions is that they are drawn *in parallel* to one another: more specifically, Kant maintains that sensory cognitions *only* represent things as they appear, while intellectual cognitions represent things as they are in themselves.⁵²⁷ In light of these connections, it is easy to understand why Kant thinks it is of the utmost importance that the true nature of the distinction between sense and intellect be properly understood if we ever hope to develop a system of metaphysics which is secure. The goal of metaphysics, after all, is to determine what things are like *objectively*, in and of themselves; but if it is true that the intentional content of every sensory cognition is an appearance, and that things in themselves are *only* represented through the intellect, then all metaphysical investigations will be on a tenuous footing until the distinction between sense and intellect is properly understood, for unless we can correctly distinguish that in a representation which belongs to the intellect as opposed to sense, we also will not be in a position to determine what belongs to the things we represent as they are in themselves as opposed to the way they merely appear to us. Now, for Kant the concepts of time and space are the primary examples of representations which do not belong to things as they are in themselves, and he stresses that the failure to recognize this is one of the main sources of error in metaphysics. Given the connection between, on the one hand, sensory cognition and appearance, and intellectual cognitions and things in themselves on the other, the arguments Kant gives to show that the concepts of time and space are not intellectual must be closely related to his reason(s) for denying that they belong to things as they are in themselves. In order, then, to provide some additional clarity as to how my interpretation of the strategy Kant employs to show that time and space are not concepts of the intellect is to be understood, in the remarks that follow I will first try to explain the

⁵²⁷ Thus, when Kant introduces the distinction between sense and intellect in §3, he says the entities cognized through the faculty of sense are phenomena, whereas those cognized through the intellect are noumena [Ak 2:392]. Strictly speaking, the distinction between noumena and phenomena is not exactly equivalent to the distinction between appearances and things in themselves, for an appearance only becomes a phenomenon after it has been subjected to analysis by the logical use of the intellect and is represented through an (empirical) concept. Nevertheless, all phenomena belong to sensibility, and thus to the way things appear, not as they are in themselves [Ak 2:394]. This connection between sensibility and appearance, on the one hand, and intellect and things in themselves, on the other, as well as their bifurcation from one another, is repeated throughout Sec. 5, as in the following passage: “In distinguishing principles which only assert laws of sensitive cognition from those which also say something about the objects themselves, the use of this criterion is fruitful and easy. For, should the predicate be a concept of the understanding, its relation to the subject of the judgement, however much the subject be sensitively thought, always denotes a characteristic mark which applies to the object itself. But *should the predicate be a sensitive concept*, since the laws of sensitive cognition are not conditions of the possibility of things themselves, it will not be valid of the *subject, which is thought by the understanding*, of a judgment, and thus it will not be possible to assert it objectively.” [Ak 2:412*] It is important to note that Kant does not wish to completely bifurcate sensory and intellectual cognition. Although sensory concepts never represent things as they are in themselves, Kant does not believe we are prohibited from applying pure concepts of the intellect to the objects represented in the sensible world. Since intellectual concepts are conditions of objects in general, they also condition sensible objects in particular, and the sensible world is thus subordinate to the intellectual world; consequently, while objects in the intelligible world cannot be cognized through anything peculiar to sense, sensible objects can still be cognized through pure concepts of the intellect, i.e., as substances, grounds, etc.

nature of the connection between sensory cognition and appearance, and intellectual cognition and things in themselves. Once this has been completed, I will then explain how this connection puts us in a better position to understand how the interpretation I am proposing is supposed to work.

To begin, why does Kant believe the intentional content of every sensory cognition is a subjective appearance? Initially, he appears to infer this from his definition of the faculty of sensibility. The faculty of sensibility [*sensualitas*] is defined as “the *receptivity* of a subject in virtue of which it is possible for the subject’s own representative state to be affected in a definite way by the presence of some object” [Ak 2:392]. The important thing to observe about this definition is that sensibility is not only defined as the capacity a subject has to be affected by external objects, but more precisely as the capacity to be *responsive* to the ways it is affected. This is made even more explicit when Kant proceeds to explain why, in light of this definition, the intentional content of every sensory cognition must be an appearance:

In this way, whatever in cognition is sensitive [*sensitivi*] is dependent upon the special character of the subject in so far as the subject is capable of this or that modification by the presence of objects: these modifications may differ in different cases, according to the variations in the subjects. But whatever cognition is exempt from such subjective conditions relates only to the object. It is thus clear that things which are thought sensitively are representations of things *as they appear*, while things which are intellectual are representations of things *as they are*. [Ak 2:392]

The only way the affection of external objects will lead to any cognition is if the mind is receptive to the kinds of effects occasioned by those objects. If the mind were not capable of having its representative states modified through the activity of external objects, or was unresponsive to the kinds of effects they produce, nothing would be *registered* in the subject which could result in any cognition, even if those objects came into contact with the subject in some way or other. From his initial observation that the subject must be receptive to the kind of affection which delivers a certain content, Kant then proceeds to argue that the intentional content of what is given by affection only belongs to the object by virtue of the way it is represented, not the way it is in itself. His argument turns on the claim that whether or not a subject is receptive to the effects produced by external objects is something that depends upon that subject’s constitution; and, since this constitution *may* vary from one subject to the next, so too will the modifications which are produced in those subjects by the affecting objects. In other words, insofar as it is at least possible that different subjects may be constituted differently, and thus receptive to different kinds of modifications to their representative states, the kinds of representations each of these subjects has will depend, at least in part, upon the constitution of those subjects; and, since the intentional content of these cognitions thus depends upon the contingent nature of the subject’s constitution, the representations of sense must be subjective.⁵²⁸

⁵²⁸ When Kant distinguishes between the matter and form of a sensory representation, he writes that the matter, which he identifies with sensation, is partially dependent upon the subject for its *quality* (while a

The first thing to note here is that the only part of sensory cognition which Kant appears to be discussing in these passages is that which is due *exclusively* to sensation. Kant defines sensibility as the subject's capacity to be responsive to the ways it is *affected* by external objects. But what is given through affection is always *sensation*; moreover, that Kant is referring to sensations when he writes of the various modifications which occur in a subject "by the presence of objects" is evident from the fact that he regards sensations as modes of a thinking subject which arise when external objects act upon the sense organs. By only calling attention to that aspect of sensory cognition which is due to affection, what Kant is suggesting is that the reason why the intentional content of a

sensation is "evidence for the presence of something sensible...in respect of its quality it is dependent upon the nature of the subject in so far as the latter is capable of modification by the object in question" [Ak 2:392]). Although Kant does not explain in any further detail as to what exactly he has in mind, it is likely that he is alluding here to the kinds of examples which were commonly cited in this period to demonstrate the perceptual relativity of sensation: thus, manna may taste bitter rather than sweet depending on the state of our palate, the same water may feel warmer to one hand than to another if the first was initially colder than the second, the presence of xanthopsia may cause objects to appear as yellow rather than some other color, etc. What these examples show is that the qualities we represent through the senses vary according to the peculiar state of the sense organs. The reason the intentional content of these representations is an appearance is because the qualitative content of the sensation is not determined solely by the effects produced in the subject by the object, but is instead dependent, at least partially, upon the state of the subject's receiving apparatus *for its content*: when the receptive faculties are in a certain state, they may *modify* whatever is given by affection in such a way that the qualitative content which the mind represents no longer corresponds to the way things are in themselves. But while this is at least part of what Kant has in mind, it is worth noting that there is another sense in which these representations are dependent upon the constitution of the subject which he likely intends. In each of these examples, the state of the subject's sense organs determines whether it has a particular sensation of a certain type (i.e., a bitter or sweet *taste*, a yellow or red *color*). But given the standard distinction between primary and secondary qualities, each of these *types* of sensation (i.e., tastes, colors) are themselves subjective—it isn't that we represent something as bitter when it is *really* sweet, or yellow when it is *actually* red, for as secondary qualities each of these sensations are equally subjective. Although we represent objects as colored or warm, the intentional content of these representations only belong to those objects by virtue of the way we represent them, and not because they resemble any qualities which belong to them as they are in themselves, for no such object is genuinely colored or warm independently of our representations. Consequently, it isn't just that the peculiar state of the subject's sense organs determines whether it has this or that sensation of a certain type (i.e., whether we see something as red or yellow), but also the fact the mind has a certain general constitution which explains the fact that it has sensations of that type (i.e., that we see colors in general). In this case, the intentional content of the representation is something contributed by the subject in the sense that the mind is constituted so as to produce a certain type of content when it is affected by an external object, and although this content is partly dependent upon the object (since the mind would never form this representation unless it were first affected, and which particular sensations it has depend in part on certain objective facts about the objects which cause them), it does not resemble anything which exists in the object; the content of that representation is instead a product of the way the mind is constituted, and it only belongs to objects by virtue of the way the mind represents them, not by virtue of the way they are in themselves. One might say that in the first case the appearance is subjective insofar as it depends upon the peculiar state of a certain type of constitution, whereas in the second it is subjective because it depends upon a peculiar type of constitution; in the first case, there may be variations between members of the same constitution, whereas in the second case there may be different types of constitution which vary from one species to another. Cf. Kant's discussion in A26-30/B42-45, A45-46/B62-63, B69-71, of the Aesthetic, where this distinction is implicit. For a more expansive discussion of these issues which fills in many of the details left implicit by Kant, see Johann Lambert, *Neues Organon* (Leipzig, 1764), Vol. II, Bk. 4, Ch. i-iii, §§1-126. Lambert's account of the distinction between things in themselves and appearances, and the subjectivity of sensory cognition, had a decisive influence on the development of Kant's own views on these matters.

sensory cognition is always an appearance is because it contains sensation. But this cannot be the whole story, for in addition to sensation, all sensory cognitions possess a certain form, and one of Kant's central conclusions is that the spatiotemporal form of sensible objects does not belong to things as they are in themselves, but is also only a subjective appearance. Insofar as that is the case, the content of what is represented through sense is not only dependent upon the nature of the representing subject with respect to its matter, it is also dependent upon the subject for its form. The problem, however, is that this fact makes Kant's initial explanation of why sensory cognition is subjective appear to be inadequate: if sensory cognitions are only subjective *because they contain sensation*, then we have no reason to think that the pure intuitions of time and space, which are defined as sensory cognitions *devoid* of sense, also belong to appearance. Sensory cognitions are not subjective simply because they contain sensations. This problem is compounded by the fact that Kant's initial explanation seems to only apply to that aspect of sensory cognition which is passively received through affection: the only cognitions which are subjective are those which depend upon the subject being receptive to the kinds of modifications produced in it by external objects. But the form of sensory cognition is not dependent upon the subject being modified by external objects, for we are told that it is actively generated by the mind itself, not given by affection. The form of sensory cognition cannot, therefore, be subjective because the content of that representation is dependent upon the subject's capacity to have its states modified by the affection of external objects—not everything in cognition which is sensory is dependent upon the special character of the subject *in this sense*, and the true explanation for why sensory cognition is always subjective must therefore be grounded in considerations which are broader than those initially suggested.⁵²⁹ Indeed, that Kant himself recognizes this is indicated by the remarks he makes in the passage that immediately follows his initial formulation of the distinction between appearances and things in themselves. Having initially asserted that the representations which belong to sensibility are those in which the mind passively receives a certain content through affection, Kant now proceeds to claim that in every representation of sense there is both matter, which belongs to sensation, and form, which is that “aspect of sensible things which arises according as the various things which affect the senses are co-ordinated by a certain natural law of the

⁵²⁹ When Kant writes that “whatever in cognition is *sensitive* is dependent upon the special character of the subject *in so far as* the subject is capable of this or that modification by the presence of objects” [my italics], his use of the term ‘sensitive’ appears to be mistaken. Recall that in every sensory cognition Kant says we must distinguish between the sensual and the sensitive, where the former corresponds to the matter of cognition (sensation), while that which makes a sensory cognition sensitive is form [Ak 2:394]. Since he only appears to be explaining why the *matter* of sensory cognition is subjective, not the form, Kant should have used ‘sensual’ instead of ‘sensitive’. Incidentally, the fact that Kant refers to the faculty of sensibility as *sensualitatis* may suggest that in his initial explanation he is only focusing on that aspect of sensibility which pertains to sensation; Kant also notes that cognition is sensitive not only when it contains sensation, but also when it is subject to the *laws* of sensibility (“Cognition, in so far as it is subject to the laws of sensibility [*legibus sensualitatis*], is *sensitive*” [Ak 2:392]), and these “laws” likely refer to the forms of intuition since these are described as *laws* of sensitive cognition throughout ID.

mind” [Ak 2:393]. And we are then told that the form of sensory cognition, like the matter, is subjective *because* it is dependent upon the constitution of the subject.

...just as the sensation which constitutes the matter of a sensible representation is, indeed, evidence for the presence of something sensible, though in respect of its quality it is dependent upon the nature of the subject in so far as the latter is capable of modification by the object in question, so also form of the same representation is undoubtedly evidence of a certain reference or relation in what is sensed, though properly speaking it is not an outline or any kind of schema of the object, but only a certain law, which is inherent in the mind and by means of which it co-ordinates for itself that which is sensed from the presence of the object. For objects do not strike the senses in virtue of their form or aspect. Accordingly, if the various factors in an object which affect the sense are to coalesce into some representational whole there is needed an internal principle in the mind, in virtue of which those various factors may be clothed with a certain aspect, in accordance with stable and innate laws. [Ak 2:393-394]

It seems, then, that the reason why every sensory cognition is an appearance is because their intentional content is always something which depends upon the subject's constitution *simpliciter*. In every sensory cognition there is both matter and form, and both are equally dependent upon the subject's constitution, albeit in different ways. The matter is dependent upon the subject insofar as the subject must be responsive to the kinds of effects produced in it by external objects: when external objects affect the sense organs, the subject is so constituted that it then has a certain type of sensation (e.g., of smell, color or taste), and the reason these sensations display the particular content which belongs to them is because of the way the subject's receptive faculties are constituted. In contrast, since the form of sensory cognition is not passively received by affection (“objects do not strike the senses in virtue of their form”), it is not dependent upon the subject's constitution in the same way as the matter: the form of sensory cognition is not an *effect* produced in the subject by external objects and, a fortiori, the presence of form in sensory cognition cannot depend on the subject being receptive to the kinds of effects those objects produce.⁵³⁰ But the form is dependent upon the subject insofar as this aspect of sensory cognition only arises by virtue of an innate law of its constitution. When the mind receives sensations, it coordinates them by projecting them outwards so as to represent them in spatiotemporal locations, and in doing so it thereby generates a certain kind of content (i.e., spatiotemporal form) which depends upon the subject's constitution—in particular, it depends upon the subject in the sense that the representations of time and space will never arise unless they are actively generated by the subject. Thus, in regards to both the matter and form of sensory cognition, what the mind represents is something that depends upon the constitution of the subject *in some*

⁵³⁰ Of course, it is true that the mind does not generate a representation of spatiotemporal form unless it is first affected by external objects, but the form of intuition is not a modification *produced by the presence of an object*: the form of intuition is an innate law of the subject which is not *given* by affection, but only *occasioned* into becoming active by the modifications produced by external objects.

way or other, and that is why, it seems, the intentional content of every sensory cognition is always an appearance.⁵³¹

This explanation does, however, present us with a new problem. If Kant is asserting that a representation belongs to sensibility so long as the intentional content depends upon the constitution of the subject in some way or other, then his claim that every sensory cognition represents an appearance is effectively trivial since he *defines* an appearance as a representation whose intentional content depends upon the subject (i.e., as whatever is *not* exempt from the subjective conditions of cognition). But the connection between sensory cognition and appearance is not trivial—and that Kant himself recognizes this is indicated by the fact that he attempts to establish the connection by means of an argument at the start of his discussion. The problem, however, is that the original argument given to show that every sensory cognition is an appearance is based on the assumption that the mind is essentially passive through sensibility. Kant initially appears to define sensibility as that which makes a subject capable of being modified by external objects: as a result, the representations which belong to sensibility are those which are given through affection, and it is precisely because the subject must be responsive to this affection which *explains* why the resulting cognition must depend upon the subject and is thus subjective.⁵³² But passivity cannot, after all, be an essential feature of sensibility since the representations of time and space are not passively received through affection; and yet, if sensory cognitions are now defined as those whose intentional content depends upon the constitution of the subject, then they are only subjective by definition.

⁵³¹ Kant makes this point explicitly in A44/B62 (my emphasis) of the *Critique*:

...through sensibility we do not cognize the constitution of things in themselves...at all, and, as soon as we take away our subjective constitution, the represented object with the properties that sensible intuition attributes to it is nowhere to be encountered, nor can it be encountered, *for it is just this subjective constitution that determines its form as appearance.*

⁵³² That the only aspect of sensory cognition which is subjective is that which corresponds to what is passively received through affection is also suggested by the way Kant contrasts it with the faculty of intellect, which is said to be objective since it represents things which cannot affect the senses because of something having to do with their qualities or content (*“Intelligence (rationality) is the faculty of a subject in virtue of which it has the power to represent things which cannot by their own quality come before the senses of that subject”* [Ak 2:392]). Intellectual cognitions are not mediated by the constitution of the subject’s receptive faculties since their objects cannot touch the senses and, for this very reason it seems, they could never be subject to any possible modification due to the constitution of the subject. See Guyer, *Kant and the Claims of Knowledge*, pp. 14-15 for comments on this puzzling fact. There are, however, other passages where the contrast is not drawn in the same way, such as Ak 15:287, Refl. 650 (1769-79. M231.50):

All of our representations, when they are considered with regard to that which they represent, belong to two main species: sensibility and reason. The former consist in the relation of objects to the capacity of our nature to be stimulated or in a certain way altered by them. The latter, however, applies to all objects as such, insofar as they are considered apart from all relation to the sensitivity of the subject...

Although Kant again defines sensibility as a passive faculty, rational cognitions are now described as those which are *universal* and *necessary* (“applies to all object as such”) rather than active. This leaves it unclear whether the distinction between the two faculties turns on the active/passive dichotomy, or on something having to do with the fact that rational cognitions are universal and necessary (see below).

There is, however, one additional aspect of sensibility which appears to be important for understanding why the intentional content of every sensory cognition is an appearance: namely, that both the subject's constitution, as well as those representations which depend upon it, are *contingent*. Kant is especially keen to stress this aspect of sensibility in regards to the form of sensory cognition: although everything intuited by a subject with a constitution like our own must be represented in time and space, and is necessarily subject to the fundamental laws which govern our intuitions, time and space are not themselves absolutely necessary and universal conditions of being or cognition [Ak 2:398, 401-402, 403, 404-405; 406-407, 412-413, 416]. There is nothing absolutely necessary or universal about our sensory cognitions, or about the laws which govern our faculty of sensibility, for there may be other modes of intuition which are not subject to the same conditions prescribed by our constitution [Ak 2:392, 396-397]. Sensory cognitions thus lack any kind of absolute universality or necessity, and at most only possess a kind of comparative or relative universality. Now, the fact that the laws which govern sensory cognition are merely contingent may help to explain why they always represent subjective appearances. When Kant claims at the start of §4 that every sensory cognition must represent an appearance, his argument turns on the fact that the intentional content of these cognitions can vary from one subject to another, and what this presupposes, he thinks, is that the content of these representations is something contingent. What Kant may be suggesting is that if the intentional content of a representation is something contingent, and can *thus* vary from one subject to another, then that is an indication the representation depends in some way upon the constitution of the representing subjects, and is thus an appearance.⁵³³ This explanation for why a representation belongs to appearance can be easily applied to the representations of time and space. Space and time are not universal and necessary conditions for all beings, they are contingent entities that only condition those things which are intuited by a subject with sensible faculties like our own. It is merely a contingent fact about the laws of our sensibility that we are constituted so as to generate the representations of time and space upon the occasion of experience, and since these cognitions are contingent it is possible there are other beings who are constituted differently and thus never form any such representations. Whether or not a subject forms these representations is thus something that depends upon the constitution of the representing subject, and that is why, it seems, they are appearances. A similar observation can also be used to explain why the matter of sense is subjective. That the mind responds to the affection of external objects by having

⁵³³ In the CPR, Kant also identifies appearances as those representations whose intentional content depends upon the *contingent* constitution of the representing subject.

We have therefore wanted to say that all our intuition is nothing but the representation of appearance; that the things that we intuit are not in themselves what we intuit them to be, nor are their relations so constituted in themselves as they appear to us; and that if we remove our own subject or even only the subjective constitution of the senses in general, then all constitution, all relations of objects in space and time, indeed space and time themselves would disappear, and as appearances they cannot exist in themselves, but only in us...We are acquainted with nothing except our way of perceiving them, *which is peculiar to us, and which therefore does not necessarily pertain to every being, though to be sure it pertains to every human being*. [A42/B59; my italics]

sensations which display the particular kind of qualitative content we are familiar with through experience is a contingent fact about the nature of its sense organs; there is no necessary connection which explains why, for example, the mind has a sensation of a particular color or taste when its visual or gustatory systems receive a certain stimulus from an external object. Since the connection between what is given by affection and the resulting sensation is contingent, it is possible that there are other beings who are constituted differently and who thus have different cognitions when affected in the same way. In this case, the resulting cognitions are based on contingent facts about the way the subject is constituted, specifically, its capacity to respond in particular ways when affected by external objects, and since the resulting cognitions depend upon the constitution of the subject, their intentional content belongs to appearance.⁵³⁴

If this interpretation is correct, then the reason why the intentional content of every sensory cognition is an appearance is not just because it depends upon the constitution of the subject, but more precisely because the constitution of the subject is *contingent*. But this still leaves us with certain difficulties. One especially serious problem is that the sense in which sensory cognitions are said to depend upon the constitution of the subject does not seem to be strong enough to entail the conclusion which Kant is trying to establish. For Kant, any representation whose intentional content depends upon the contingent constitution of the subject cannot belong to things as they are in themselves; the intentional content of these representations only exists by virtue of the subject, so that if the subject were taken away, the content represented would also disappear (an appearance can “only be given through its relation to the sensitive faculty of cognizing” [Ak 2:397]). But nothing Kant has said seems to justify this conclusion. It may be true that the intentional content of a sensory cognition is something contingent, and is dependent upon the special character of the subject in the sense that, if the subject were constituted differently it would never have this representation, but this does not yet rule out the possibility that the representation *also* agrees, by means of some fortunate coincidence, with the way things are in themselves. In other words, Kant appears to assume that if the intentional content of a representation can vary from one subject to the next according to differences in their constitutions, then that alone entails that it is subjective; but the fact that representations can vary from one subject to the next only indicates that their content is something *relative*, and certainly it is a mistake to assume that the *relativity* of these cognitions also entails their *subjectivity*.⁵³⁵

⁵³⁴ Both the secondary qualities and the spatiotemporal form are thus subjective for the same basic reason, namely, they only exist by virtue of the subject’s constitution. Nevertheless, in the Aesthetic Kant also insists that this does not mean they are *equally* subjective, or that they cannot be distinguished in other ways. See A26-30/B42-45, A45-46/B62-63, B69-71. Cf. Lambert, *Neues Organon*, Vol. I, Bk. 1, Ch. ix, §§599-692.

⁵³⁵ This objection is especially well-suited to Kant’s initial presentation of the argument for the subjectivity of sensory cognition. It is surely true that if the mind were not responsive to the kinds of effects which external objects are capable of producing, nothing would be registered in the subject which could result in any cognition, even if those objects came into contact with the subject in some way or other; and Kant is also right to say that whether or not a subject is receptive to these modifications is something that depends upon its constitution. But why should this imply that the resulting cognitions do not belong to things as they are in themselves? The kind of examples which are *suggested* by these remarks—even if they are not

Before we try to deal with this objection, or discuss sensory cognition any further, it will be better to first turn our attention to what Kant has to say about intellectual cognition. Whereas the intentional content of what is represented through sense always depends, in part, upon the constitution of the subject, and is thus a subjective appearance, the concepts generated by the intellect are not dependent on any contingent facts of the subject's constitution. Instead, for Kant the intentional content of an intellectual cognition is always *objective* since it corresponds to something which belongs to the thing represented as it is in and of itself. In accordance with the foregoing analysis, where the contingency of sensory cognition is supposed to be the key factor which explains why the content of these representations is always an appearance, the reason Kant is so confident that intellectual cognitions represent things as they are in themselves is because he assumes the intellect in its real use is a source of concepts and principles which are *absolutely necessary* and *universal*. This connection is brought out when Kant identifies the concepts which belong to the real use of the intellect as the very ones studied in metaphysics ("...the organon of everything which belongs to the understanding, *metaphysics*" [Ak 2:395]),⁵³⁶ and takes considerable pains to distinguish this science

the ones Kant intended—seem to include cases like the inability of the deaf to hear sounds even though sound waves produce vibrations in their ears, or perhaps the inability of humans to hear ultrasonic whistles. This kind of dependence was often noted by Kant's contemporaries. For example, Martin Knutzen *Elementa philosophiae rationalis seu logicae cum generalis tum specialioris mathematica methodo demonstrata*, 1747 (reprint: Hildesheim: Georg Olms, 1991), §28 observes,

Da unsere Sinne begrenzt sind, und unsere Organe der sinnlichen Erkenntnis, deren Zahl ja nur sehr klein ist, nicht allein möglichen Qualitäten der Dinge angepasst sind, so ist natürlich, dass auch unsere ganze Erkenntnis nur eine beschränkte ist. Daher ist sicher, dass, wenn jemand neue Sinne erlangen könnte, den anderen diejenige Kenntnis der Dinge unverständlich bleiben würde, die er mit Hilfe dieser neuen Sinne erlangt hätte.

But why should the fact that certain perceivers who do *not* have any defects in their sense organs, unlike the deaf, and can thus hear sounds since they are receptive to the kinds of effects external objects produce in them, imply that these representations are subjective? Similarly, why should the fact that ultrasonic whistles cannot be registered by the human ear tell us anything about whether these cognitions are subjective or objective? By themselves, these examples only imply that the kinds of things we can represent depend upon the nature of our constitution in the sense that we cannot represent them unless we are constituted in a certain way. This, however, does not mean the things we represent depend on our constitution in the sense that what is represented *only exists* by virtue of our constitution, and does not correspond to the way things are independently of those perceivers. When Kant asserts that the matter of sensory cognition is dependent upon the subject for its qualitative content, he appears to be assuming that the subject must have modified the effect produced in it by the affecting object in such a way that the resulting cognition no longer corresponds to the way things are in themselves. The matter of sensory cognition is not only dependent upon the subject in the sense that the subject must be capable of being modified in certain ways, but also that the resulting modifications are dependent upon the subject's constitution for their qualitative content. And what this means is that the mind is not only responsive to the affection of external objects in the sense that it is capable of receiving a certain content--which is somehow directly transmitted to the subject from the object without being modified in any way—but also that when the mind is affected the resulting content must be different from what was originally given by affection. But though he assumes that if the mind passively receives some content through affection, whatever it receives must be different from the thing as it is in itself, nothing Kant has said explains *why* this must be so.

⁵³⁶ As Kant puts it at Ak 2:395

Now the philosophy which contains the *first principles* of the use of the *pure understanding* is METAPHYSICS...its propaedeutic science is that science which teaches the distinction between sensitive cognition and the cognition which derives from the understanding...Since, then, empirical

from those in which the fundamental concepts and axioms can *only* be given intuitively through sensory cognition. The reason the latter can only be given through intuition is because the intentional content of these cognitions depends upon the constitution of the mind, which is itself *contingent*; these concepts and principles cannot, therefore, be inferred by means of any rational inference, they can only be revealed when given through intuition.⁵³⁷ In contrast, the reason why the concepts and principles studied in metaphysics do not in any way depend upon the subjective constitution of the subject is precisely because they are assumed to be absolutely necessary and universal principles of reason.

But in pure philosophy, such as metaphysics, the *use of the understanding* in dealing with principles is *real* that is to say, the fundamental concepts of things and of relations, and the axioms themselves, are given in a fundamental fashion by the pure understanding itself ...[it is] the right use of reason which here [in metaphysics] sets up the very principles themselves, and since it is in virtue of the natural character of reason alone that objects and also the axioms, which are to be thought with respect to objects, first become known, the exposition of the laws of pure reason is the very genesis of science.⁵³⁸

principles are not found in metaphysics, the concepts met with in metaphysics are not to be found in the senses but in the very nature of the pure understanding...

Note that “empirical principles are not found in metaphysics”; the propositions which belong to this science are instead generated a priori by the intellect in its real use, and are absolutely necessary and universal.

⁵³⁷ As Kant notes, it is precisely because the basic concepts and principles can only be given through intuition, that the use of the understanding in these sciences is always merely logical, amounting to nothing more than subordinating the cognitions given by sense according to their generality. Although these sciences lack the *kind* of universality and necessity characteristic of metaphysics, and are thus only sciences of phenomena, Kant insists that this does not mean the judgments of sensory cognition are any less true, or cannot be the subject matter of a genuine science. See below for further discussion. On the contrast between metaphysics and the “*science of sensory things*” [Ak 2:398] see Ak 2:410-411 and esp. Ak 2:395-398.

⁵³⁸ Ak 2:411. Throughout ID (esp. Sec. 1 & 5), Kant contrasts the *objective* laws of the understanding—which are said to apply necessarily to all possible beings—with the subjective laws of sensory cognition, which only apply to things by virtue of the way they are cognized by beings with a constitution like our own. Since the laws of sensory cognition are only *contingent* laws of our constitution, we cannot be justified in applying them to things as they are in themselves which, at the very least, *may* be exempt from those conditions. It is for precisely this reason that Kant feels justified in insisting that the laws which govern sensory cognition only impose a limit on what can be represented through the senses by a being with a constitution like our own, not on things as they are in themselves. What cannot be represented through sensory cognition is not for that reason impossible, for the laws which govern our sensibility are not absolutely universal and necessary conditions of being or thought; they are merely contingent facts about the nature of our constitution which are peculiar to us. This is what allows Kant to argue that one of the major sources of error in metaphysics is the assumption that whatever cannot be intuited, or is inconsistent with the laws which govern human intuitive cognition, must for that reason be objectively impossible. According to Kant, the reason we cannot intuit certain beings is not because they are absolutely impossible, but only that they are impossible to intuit given the subjective laws of cognition which govern our faculty of sensibility [Ak 2:387-389, 399]. It is simply a mistake to dismiss something as impossible simply because it cannot be intuited, for this is to “confuse the limits, by which the human mind is circumscribed, for the limits within which the very essence of things is contained” [Ak 2:399].

...whatever *conflicts with* the laws of the understanding and the laws of reason is undoubtedly impossible. But that which, being an object of pure reason, simply *does not come under* the laws of intuitive cognition, is not in the same position. For this lack of accord between the *sensitive* faculty

Thus, Kant assumes that it is a *necessary* law of reason that, for example, anything self-contradictory is not a possible being, that underlying every determination there is always a substance, that every finite being must have a ground, that every composite being must be composed of simples, and so on. Through the intellect we know a priori that these principles are necessary. And, since they are necessary they must also apply *universally*, and the same must also be true, in turn, for the concepts which are contained in these principles (e.g., possible being, substance, composition).⁵³⁹ It is precisely because the concepts and principles generated by the intellect are necessary and universal conditions for all possible beings which ensures that they must apply *objectively* to things as they are in themselves.⁵⁴⁰ Since they are universal and necessary, they must be exempt from the subjective conditions of cognition which contingently belong to the subject's constitution.

What we have established thus far is that intellectual cognitions represent things as they are in themselves *because* they are universal and necessary, whereas sensory cognitions only represent appearances *because* they depend upon the contingent constitution of the subject. In light of these results, the answer to the question of whether or not space and time are concepts of the intellect will thus depend, in part, on whether they can be cognized through concepts which are necessary and universal. In order to understand precisely how one might think this would work, it is important to recall at this point just what we learned in Chapters 2 and 3 about the Leibnizian-Wolffian account of the concepts of time and space, as well as the status these concepts were supposed to have in the systems of metaphysics developed by Wolff and his followers in particular. General metaphysics is the science of being qua being, and its task is thus to investigate the most fundamental concepts and principles of being in general. As a science, metaphysics must be organized as a deductive system: one begins by identifying certain fundamental concepts and principles and then uses these to systematically define or deductively infer

and the faculty of the *understanding*...points only to the fact that *the abstract ideas which the mind entertains when they have been received from the understanding very often cannot be followed up in the concrete and converted into intuitions*. But this *subjective* resistance often creates the false impression of an *objective* inconsistency. And the incautious are easily misled by this false impression into taking the limits, by which the human mind is circumscribed, for the limits within which the very essence of things is contained. [Ak 2:388-389].

Only the intellect in its real use "relates to the possible or the impossible" [Ak 2:416], and the reason is because it is a source of cognitions which are absolutely universal and necessary, so that anything which conflicts with it must be absolutely impossible. Whereas the concepts of the understanding relate to what is absolutely possible or impossible, the cognitions of sensory cognition cannot "in any way be conceded objectively and generally" [Ak 2:416].

⁵³⁹ To clarify, this does not mean that every being is a substance, composite, etc. Baumgarten, *Metaphysica*, §6 helpfully distinguishes the internal predicates of a being into those which are *universal*, and are thus contained "in each and every single thing," and those which are disjunctive, "of which only one of a pair is in each and every single thing." Thus, every being is *possible* since possibility is a predicate common to every being; but not every possible being is a substance or composite, for these predicates are instead one member of a disjunction which is true of every being, viz., every possible being is *either* a substance or an accident, *either* simple or composite, etc. These disjunctions are, however, universally true of all beings.

⁵⁴⁰ Of course, in the *Critique* Kant has completely given up on the belief that the concepts and principles generated through the intellect alone can provide the mind with any knowledge of things as they are in themselves (since they are purely formal and do not by themselves enable us to cognize any object), but in ID he still retains his earlier confidence in the powers of reason.

every other concept and proposition step by step, so that the final result is a system of concepts and principles which are organized hierarchically according to their generality. For the Wolffians, the most basic principles and general concepts of being are logical in nature. Thus, Wolff identifies the Principle of Non-Contradiction as the most fundamental principle of being, and this principle, which is necessary and universal, is then used to define the most basic ontological category, namely, the concept of a possible being. From this starting point, Wolff then proceeds to show how one can obtain other, less basic principles of metaphysics, such as the PSR, LEM, etc., by deriving them from the PNC, and how these principles, together with the concepts used to formulate them, can be used to synthetically define the other fundamental concepts of being through logical division. Now, for the Wolffians the concepts of time and space were regarded as among those which could be derived in this way from the fundamental categories of being. The crucial thing to note about the standard definition of space as an order of coexistence, and the concept of time as an order of succession, is that time and space are being defined by means of certain concepts which were thought to be obtainable from the fundamental categories of being by means of logical division. Thus, an order of coexistence is defined as a plurality of compossible beings which are external to one another, where the concept of compossibility is defined through the PNC (i.e., two things are compossible if they do not contradict one another), and the concept of externality is defined through the concept of difference, which is itself defined through the law of identity; an order of succession is defined, in turn, as a plurality of impossible beings which are connected as ground and consequent (where these latter notions are defined through the PSR, which is itself derived from the PNC). What these analyzes were designed to show is that the concepts of time and space can be derived from the fundamental principles and categories of being. And, crucially, since each of these fundamental concepts and principles are themselves derived from others which are *purely logical* in nature, if these definitions of time and space are correct, it follows that time and space are among the most fundamental categories of being, and must therefore be universal and necessary conditions which apply to things as they are in themselves. In other words, *if* the concepts of time and space can be derived from the most basic concepts and principles of being, and the latter are the most universal and necessary conditions of all possible beings, and thus necessarily apply to things as they are in themselves, then time and space must also be universal and necessary conditions of being which also apply to things as they are in themselves.

Kant of course absolutely opposes any such attempt to derive the concepts of time and space from the laws of logic, or conceive of them through those concepts proper to the intellect, and in doing so he consciously takes himself to be opposing the efforts of Wolff and his followers to do just that. The concepts of space and time “are not *rational* at all” [Ak 2:391]; they “lie beyond the limits of reason, and, thus, they cannot in any way be explained by the understanding.”⁵⁴¹ Contrary to Wolff’s claim to derive these concepts from the basic principles of logic, Kant insists on the very opposite: “these concepts

⁵⁴¹ Ak 2:405; Cf. Ak 2:393 396, 397, 398, 410, 414* & Wolff, *Theologia Naturalis*, §454 “*Supra rationem esse dicitur, quod ex principiis rationis indemonstrabile.*”

constitute the *underlying foundations upon which the understanding rests*, when, in accordance with the laws of logic and with the greatest possible certainty, it draws conclusions from the primary data of intuition” [Ak 2:405]; “Indeed, far from its being the case that anyone has ever yet deduced the concept of time from some other source [viz., other than the mind’s innate law of coordination], or explained it with the help of reason, the very principle of contradiction itself presupposes the concept of time and bases itself on it as its condition” [Ak 2:401; Cf. Ak 2:406]. For Kant, time and space are not derivable from reason or the laws of logic, and it is impossible that either could be grasped through abstract concepts of the intellect; instead, time and space are simple concepts of sensibility whose content can only be grasped through intuition. It is for this very reason that Kant refers to time and space as *primitive* concepts of sensibility [Ak 2:398, 402, 403; Cf. Ak 2:383]: as primitive concepts, time and space can only be understood directly through acquaintance, they can never be grasped by means of anything else which is more basic.⁵⁴²

With these results in hand, we are now finally in a position to better understand the interpretation proposed at the outset of this chapter. We have argued that the distinction between sense and intellect is grounded on certain fundamental differences in the nature of the things the mind represents, that the intentional content of any concept represented through the intellect is always *abstract*, whereas everything represented through sense is *concrete*. We have also maintained that the difference between the abstract and the concrete is not definable in terms of some other, more basic distinction, but is instead based on primitive differences that can only be defined through ostension by reflecting on the intentional contents of our representations. If this interpretation is correct then in order to show that the concepts of time and space belong to sensory rather than intellectual cognition, what Kant needs to demonstrate is that the intentional content of these concepts is *not abstract*; and, one would expect that the arguments Kant employs to demonstrate this will turn on the fact that when we reflect on the intentional content of those concepts which he designates as ‘pure’, and compare them to the intentional content of our pure intuitions, we will observe an irreducible difference in kind which can only be grasped through an intuitive apprehension of the fundamental difference between these intentional contents. Now, the main result we have obtained in the course of our present discussion which can help supplement this basic outline of Kant’s argumentative strategy, is that whether or not the concepts of time and space are intellectual depends on whether they are definable in terms of the most general concepts of being; and, in particular, the Leibnizian attempt to answer this question in the affirmative helps to bring into better focus the arguments Kant employs to demonstrate that time and space are not intellectual. The Leibnizians claim that the concepts of time

⁵⁴² They are primitive both because they cannot be conceived of through pure concepts of the intellect, and because they are conceptually prior to any other sensory concept. The other representations which Kant designates as ‘concrete’ (i.e., an appearance, an abstracted sensible quality) are those which include, as part of their content, something that depends on time and space. Since time and space are the conditions which make any other representation concrete, whatever exists in time and space is concrete by virtue of inheriting whatever primitive property belongs to time and space themselves which makes *them* concrete.

and space can be defined through the most fundamental concepts of being, and are derivable from principles which are absolutely universal and necessary. Accordingly, there are two basic sets of arguments which Kant advances in order to refute the Leibnizians. In the first set of arguments, which we will discuss in section §5.1, Kant tries to show that the Leibnizian-Wolffian attempts to define time and space through the concepts of order, impossibility, ground (etc.,) are necessarily inadequate. What Kant argues is that *if* the Leibnizian-Wolffian definitions of these concepts were correct, then they should enable us to cognize time and space when we reflect on their content. But, as he attempts to show, the mind could *never* apprehend time and space by means of these concepts: when the mind conceives of an order of coexistence or an order of succession, it does not thereby conceive of either time or space, for the intentional contents of the former representations omit some crucial element contained in those of the latter, and this additional element is something that can only be understood by means of acquaintance. For Kant, the intentional content of the concepts which the Leibnizians use to define time and space is *abstract*, and the reason why time and space cannot be concepts of the intellect is because they cannot be conceived of through the concepts of order, ground, impossibility or any other concepts of this sort. And, once it has been recognized that the concepts of time and space cannot be conceived of through abstract concepts of the intellect, it follows that they must be fundamentally different in kind from the concepts which belong to the understanding, and to mark this difference Kant designates them as *sensory*. The distinction between the representations of time and space and the pure concepts of the intellect is thus based on some primitive difference which can only be indicated or defined ostensively by reflecting on the intentional contents of these representations.

In §5.2 we then turn to the next set of arguments, which are closely connected to the first and are intended to provide additional confirmation of Kant's basic claim that time and space are not intellectual. All of these arguments turn on the claim that the fundamental determinations of time and space cannot be inferred from the principles which belong to logic or metaphysics. As we have noted, Wolff and his followers attempt to derive the concepts of time and space from certain concepts and principles which are purely logical in nature. But if these derivations are genuinely successful, one would expect to be able to infer the fundamental determinations of time and space from the basic laws of logic and metaphysics—no definition can be adequate, after all, unless it identifies the essential determinations of the thing defined. Accordingly, in his second set of arguments, Kant claims that if the concepts of time and space were intellectual, then their fundamental determinations should be derivable a priori through universal principles prescribed by reason. But, contrary to the Leibnizians, Kant insists that the fundamental properties of time and space (e.g., that it “does not have more than three dimensions, that between two points there is only a straight line, that from a given point on a plane surface a circle can be described with a given straight line, etc.,”) cannot be “derived from some universal concept” but “can only be apprehended concretely” [Ak 2:402-403]. Kant focuses in particular upon the science of geometry, which studies the fundamental

properties of space, but which “does not demonstrate its own universal propositions by thinking an object through a universal concept, as happens in the case of what is rational”, but does so instead “by placing it before the eyes by means of a singular intuition, as happens in the case of what is sensitive” [Ak 2:403]. And, along much the same lines, the argument from incongruent counterparts is used to show that the difference between right and left cannot be understood through abstract concepts of the intellect, or “expressed by means of characteristic marks intelligible to the mind”, but “can only be apprehended by a certain pure intuition” [ibid]. The basic idea behind each of these arguments is that the fundamental determinations of time and space cannot be derived from the principles of logic or metaphysics, for there are no absolutely necessary, universally valid principles which govern these entities. Instead, Kant insists that their fundamental determinations can only be determined through intuition, never by means of the laws of logic or rational reflection.

When put together, these arguments provide Kant with a key premise for his central claim that time and space do not belong to things as they are in themselves. Through the intellect the mind represents things with concepts whose intentional content is abstract; and, having demonstrated that the mind cannot form representations of time and space through such abstract concepts, Kant infers that the representations of time and space are not concepts of the intellect. But, since Kant also maintains that things as they are in themselves are *only* represented through concepts which belong to the real intellect, it follows that the representations of time and space do not apply to things as they are in themselves.

Now, as we noted at the end of our discussion of sensory cognition, Kant appears to illegitimately assume that the only cognitions which can be objective are those which are universal and necessary, and that, consequently, any cognitions which are contingent cannot apply to things as they are in themselves. There is, however, one additional argument which Kant appeals to in order to show that time and space cannot be objectively real, and this argument, if successful, helps to address this apparent gap. The argument, which we discuss in §5.3, turns on the assumption that the mereological structure of time and space conflicts with certain necessary principles of reason. For Kant, the concepts of part, whole and composition, are pure concepts of the intellect; and, in addition, Kant maintains that it is a necessary law of reason that whatever is composite, or a kind of whole, must be composed of simples, and that the simple parts are what ground the existence of the whole. But, as Kant proceeds to show, these principles are in conflict with what we observe when we intuit time and space: time and space are not grounded in simple parts, since space is not composed of points and time is not composed of moments—instead, these parts are grounded in the whole, since they only exist as limits of time and space as a whole. The recognition that certain concepts and principles of the intellect *conflict* with what we observe when we intuit time and space is used to establish two closely related conclusions. First, since the mereological structure of space and time cannot be inferred by reflecting on the pure concepts of the intellect, but can only be revealed through intuition, it follows that space and time cannot be concepts of the

intellect. Second, if there are certain objectively necessary laws of reason which not only fail to apply to time and space but, in fact, even *conflict* with them, then these representations cannot be objective. And thus, having demonstrated with his first pair of arguments in §15.1 and §14.A that the representations of time and space are generated through concepts which are part of our innate constitution, and then combining this with his further claim that they cannot be objectively real since they contradict certain universal and necessary principles of being, Kant comes to his conclusion that time and space (as well as every other representation which depends upon them) are nothing more than subjective appearances which only exist by virtue of our constitution.

§5.1: Kant's Refutation of the Leibnizian-Wolffian Definitions of Time & Space

In our discussion of the arguments in §14.1 and §15.A from the previous chapter, we noted that Kant appears to confuse at least two distinct notions of priority, namely, psychological and definitional priority. In our reconstruction of these arguments we focused almost entirely on the question of how they are used to show that the concepts of time and space are non-empirical. Having now explained how these arguments are used to demonstrate the psychological priority of time and space, I would now like to discuss the question of what relation there is, if any, between this aspect of Kant's argument and his further claim that time and space are prior in the order of definition to the concepts of certain kinds of spatiotemporal relations. While it is certainly true that Kant appears to be simply conflating two distinct issues here—namely, the genetic question of how the mind originally acquires these concepts with the further question of how they ought to be defined—it is clear from the text that Kant seems to think there is some connection between these two aspects of the argument. In §14.1, Kant begins by arguing that the concept of time cannot be acquired by abstraction from experience, specifically from the succession of sensations given by affection, since the ability to represent things *as* successive (or simultaneous) presupposes the concept of time; and from this conclusion, he then infers that the Leibnizian-Wolffian definition of time is circular: the “concept of time...is very badly defined, if it is defined in terms of the series of actual things which exist one *after* the other. For I only understand the meaning of the little word *after* by means of the antecedent concept of time. For those things come *after* one another which exist at *different times*, just as those things are *simultaneous which exist at the same time*” [Ak 2:398-399; Cf. Ak 2:401]. And although no such objection explicitly appears in the corresponding argument for space in §15.A, it is alluded to in §15.D [Ak 2:404]: against the Leibnizian view that space is “the *relation* itself which obtains between existing things, and which vanishes entirely when the things are taken away” [Ak 2:403-404], Kant objects that there is an “obvious circle in the definition of space in which they are necessarily entangled” [Ak 2:404]. Although no explanation is given as to why the definition is circular, presumably the reason why space cannot be defined as the order in

which things coexist outside of one another is because the mind could never conceive of one thing existing outside another unless it first has a concept of space.⁵⁴³

As we observed throughout the course of our discussion, there are different possible explanations as to why these definitions are circular. One possibility, noted by both Mendelssohn and Vaihinger, is that the definitions are circular since the *meaning* of “after” can only be explained by appealing to the concept of time, and “outside of” can only be explained through the concept of space. As we have already noted, the problem with this interpretation is that it leaves Kant open to the charge that his objection to the Leibnizian definitions is merely verbal, or one having to do with how the meaning of certain words is to be explained (viz., one cannot understand succession without first explaining “the meaning of the little word *after*”). But the alleged circularity cannot be merely verbal, for Kant, as well as his interlocutors, all agreed that words are merely outer signs or symbols that we use to publicly express our thoughts, and that means the issue here has to do with the relationship between our concepts. One interpretation which avoids this objection is the one proposed by those who claim that the kind of priority at issue in §14.1 and §15.A is logical. On this interpretation, the reason the concept of time cannot be defined as an order of succession, and space cannot be defined as an order of coexistence, is because space and time are not identical to the spatiotemporal relations that obtain between sensible appearances. Instead, the concepts of time and space refer to independently existing entities which are ontologically prior to their occupants, and all spatiotemporal relations of appearances are grounded in a prior relation to the parts of time and space. The Leibnizian-Wolffian definitions are thus circular, on this interpretation, since space and time are themselves logically prior to the spatiotemporal relations that obtain between objects, and one cannot, therefore, define the former in terms of the latter without circularity. But the problem with this reconstruction is that is based on an interpretation of the arguments in §14.1 and §15.A which we have already shown to be untenable.

In order to understand why Kant thinks these definitions are circular, the place to start is with certain remarks from Johann-Heinrich Lambert’s *Neues Organon*. As we will see momentarily, the objection that the Leibnizian-Wolffian definitions of time and space are circular is not at all *unique* to Kant, but appears to have been derived from certain observations made by Lambert and Crusius—though it is Lambert’s discussion which is especially important since it not only helps us understand the exact way in which the Leibnizian-Wolffian definitions are supposed to be circular, but also sheds light on a number of other important aspects of Kant’s theory of time and space. Lambert’s version of the objection appears in the course of his discussion of what he calls “transcendent” concepts. Like Kant, Lambert draws a distinction between the intelligible world and the corporeal world. The intelligible world contains immaterial entities, including minds and their states, whereas the corporeal world is comprised of the extended bodies which exist

⁵⁴³ The same objections appear in many of Kant’s lecture notes. See *Metaphysik Vigilantius* K₃, Ak 29:976 & 982; *Metaphysik L*, Ak 28:177-178 & 180; *Metaphysik Mrongovius*, Ak 29:830-831; *Metaphysik Volckmann*, Ak 28:437.

in space. As Lambert notes, since these entities differ in kind, the concepts which apply to things in the material world are often incompatible with those which are applicable to immaterial beings. There are, however, certain concepts which seem to apply to the entities in both worlds, and these are what Lambert calls “transcendent.”

Now it is in this way that most words in language are given a double and occasionally a multiplicity of meaning, and in these meanings something similar and common yet remains, so that these similarities can be used in many cases, since it is a more universal concept, which we can call **transcendent**, insofar as it represents similar things in the corporeal world [*Körperwelt*] and intellectual world [*Intellectualwelt*]. Thus, e.g., the concept of force [*Kraft*] is transcendent, since we represent to ourselves powers of cognition [*Erkenntnisskräfte*], powers of desire [*Begehrungskräfte*], and moving forces [*bewegende Kräfte*]. If one defines such a transcendent concept, one must absolutely not forget that they still obtain special determinations, whenever they are applied in the corporeal world or also in the intellectual world. The definition therefore becomes more specific, and the Definitum, which now also becomes a particular species, is not common as before.⁵⁴⁴

As Lambert notes, although a transcendent concept refers to something which is shared in common by both material and immaterial entities, when such a concept is applied to the entities belonging to the members of one of these classes, certain “special determinations” may have to be added to it which are not applicable to any members of the other. For this reason, it is necessary to exercise caution when trying to define a transcendent concept: often there are certain determinations which are only contingently associated with it by virtue of the way it is always applied to *one* class of entity, but this determination is not a defining mark of the concept since there is another class of entities it does not apply to. Unless one recognizes this, it is easy to mistake this determination

⁵⁴⁴ Lambert, *Neues Organon*, Alethiology, §48. All translations from Lambert are my own. Lambert’s allusion at the beginning of this passage to the “multiplicity of meaning” which many *words* have is a reference to his earlier observation that there are certain terms in our language (which are themselves symbols for concepts) that are seemingly used to apply to *both* immaterial and material entities, even though their referents appear to be incommensurable. The example Lambert cites is the way “light” is used in the statements “There is light in the room” and “There is light shining in our thoughts” [ibid., §45]. Although Lambert cautions that often such terms have a two-fold meaning, since the things they refer to are different in kind, he also notes that this does not mean there are no *connections* between their referents. On the contrary, in such cases there is often some similarity or analogy between the way the term is applied to material and immaterial entities which *explains* why it is applicable to both. Thus, the concept of light derived from the senses only applies to things in the material world, for nothing immaterial can be illuminated in the way physical objects are. But the presence of light is also recognized as a condition required for seeing things clearly, and it is in this sense that the term is being used when we say “There is light shining in our thoughts”—in other words, what “light” refers to here is just whatever enables the mind to clearly grasp its thoughts, and whatever this is is analogous to the clarity provided by light when perceiving bodies in an illuminated area [§46-47]. Although here a single term refers to things which are different in kind, there is still something which Lambert thinks is common to both referents—a universal concept which equally applies to immaterial and material entities.

for one of the defining marks of that concept, and in doing so, one would then run the risk of confusing the difference between material and immaterial beings.

The example Lambert uses to illustrate this point is the concept of externality. We apply this concept to immaterial substances when we say that one mind exists outside of (or is external to) another immaterial substance, and the same concept is also applied to material bodies when we differentiate them from one another. The concept of externality is thus transcendent, since it applies equally to minds and bodies. But Lambert also insists that the concept obtains different connotations when applied to each of these classes:

Thus, e.g., we distinguish thoughts and corporeal things from one another. The concept **externality** [*auseinander*] is therefore transcendent, and in this case it refers to nothing more than **difference** [*verschieden*]. But one would be mistaken if one wanted to believe that the existence of one body outside another is given by the difference of concepts, because here necessarily the clear and simple concept of space must still be added to it, though this concept is not found in it when we, e.g., divide the faculties of cognition [*erkenntnisskraft*] of the soul from one another, that is, simply distinguish them from one another.⁵⁴⁵

The transcendent concept of externality, or what it refers to when it is applied to both minds and bodies, is just the concept of difference, and this concept is defined through the notion of impossibility: the concept of A is different from the concept of B iff they contain impossible marks, or, if P is contained in A but not in B (which thus contains not-P). But while the presence of incompatible marks is sufficient for having different concepts, and is also the notion we appeal to in order to distinguish immaterial substances in the intelligible world, this concept of difference does *not* define externality for material entities. In order for one body to be external to another, having different marks is sufficient, but not necessary. It is possible, after all, to have qualitatively identical bodies, or to form a concept of two bodies which have identical marks, but which are nevertheless external to one another insofar as they occupy distinct locations in space. What this example demonstrates for Lambert is that one cannot explain what makes these bodies external to one another by appealing to any difference in their marks, and that is why he insists the concept of externality can only be defined for material objects through the concept of space: one body is external to, or exists outside of, another so long as the first occupies a location in space which is distinct from the place occupied by the second. This, however, is certainly not the way in which externality is defined for immaterial entities, since minds do not exist in space and cannot, therefore, be distinguished from one another by occupying different spatial locations. The transcendent concept of externality which is common to minds, bodies or any other possible being cannot contain any notion of space, since immaterial beings are non-spatial. The concept of externality, as applied to entities in the physical world, thus contains certain determinations which are not contained in the concept when it is applied to entities in the immaterial world.⁵⁴⁶

⁵⁴⁵ Ibid, §49

⁵⁴⁶ Cf. A263-264/B319-320

What this example is supposed to show is that the greatest care must be taken in defining such concepts, for in much the same way that the fallacies of subreption which Kant identifies in ID—where a condition of sensible objects is surreptitiously predicated of something immaterial—lead to serious metaphysical errors, the failure to take adequate precautions when defining a transcendent concept can, in the same way, easily lead one to mistakenly contravene the fundamental differences between entities in the material and intelligible worlds. The example Lambert cites to illustrate the kind of errors one can fall into in this way is Wolff’s attempt to define the concept of space through the transcendent concept of externality:

We cite this example from Wolff’s *Ontologia*. For in order to pave the way for the definition of extension [*Ausdehnung*] and of space, he begins by defining the concept of **outside one another** [*außer einander*] through the concept of **difference** [*Verschiedenheit*], (Ontol. lat. §.544.) and (§.548) he says then: *Si plura diuersa, adeoque extra se inuicem existentia tamquam in uno nobis repraesentamus, notio extensionis oritur: et adeo Extensio sit multorum diuersorum, aut, si mauis, extra se inuicem existentium, coexistentia in uno* etc, here are only the words: *diuersa, adeoque extra se existentia*, which is to say: what is different from another, is outside another. But it would be hard to admit that this sentence is generally true, however, since the concept **outside one another** is then being used transcendentally. But he thereby allows himself to confound the concept **place** together with **outside one another**. Wolf himself also appears to sense this when he says: *diuersorum, aut, si mauis, extra se inuicem* etc. For certainly one would prefer this if one is speaking of corporeal extension, and in the attached §.544 comment, he himself says, that one easily misuses the concept of extension, if one at the same time wants to call extended, what can be distinguished from another, for certainly the mere difference is not sufficient, since the concept of space still must be brought forth, which Wolf initially wanted to derive. We can just occasionally remark here, that the Wolffian definitions of space or time are much too similar to one another, so as to allow it to be deduced that time has only one dimension, while space has three.⁵⁴⁷

In Ch. 3, we discussed Wolff’s attempt to define the concept of space through the synthetic method by deriving it from the most fundamental categories of being, specifically from the concepts of order, difference, and coexistence—concepts which are all “transcendent”. For Lambert, the basic problem with Wolff’s attempt to define space as an *order of things existing outside one another* is that the concept of externality (“ausser einander”) is itself defined through a transcendent concept of difference which applies equally well to both material and immaterial entities. But if externality is defined in terms of impossibility, then Wolff’s definition of space appears to be extensionally inadequate. One immaterial entity exists “outside of” another so long as these entities have impossible marks, but since they are immaterial neither of these entities exists in space. But how, then, can space

⁵⁴⁷ Lambert, *Neues Organon*, Alethiology, §50. Cf. *Ibid*, §684.

be defined through a concept of externality which applies to non-spatial beings? If the concept of difference used to define externality is transcendent, then a collection of numerically distinct, coexisting immaterial entities must also exist in space, for so long as they have impossible marks, they too exist “outside one another.” But this, of course, is obviously unacceptable, and the transcendent notion of externality is thus far too broad to be used in the definition of space. What Lambert then suggests is that the only reason the definition appears to be plausible is because Wolff is illicitly trading on the ambiguity contained in the notion of externality that was identified earlier. The problem, however, is that if “outside of” is defined through the concept of place (viz., one thing exists outside another when they occupy distinct locations) then Wolff’s definition of space is circular, for the concept of place can only be understood through the concept of space. Either way, Wolff’s definition of space is a failure: the definition is either extensionally inadequate since it fails to distinguish between collections of impossible entities which exist *in* space as opposed to those which exist *outside* of space, or the definition is circular since it illicitly appeals to a notion of externality which presupposes, and thus cannot be used to define, the concept of space.⁵⁴⁸

This objection to the Wolffian definition of space is also raised by Crusius in his *Entwurf der nothwendigen Vernunft Wahrheiten*

If one says that space is the order, or the manner and way in which many things are simultaneously next to one another [*neben einander zugleich sind*], then one defines a possible thing, but not that which we call ‘space’ or ‘ubi’ on account of the nature of the thing itself. This has not been explained at all. And if one had no other concept of space by means of nature, scarcely anything could be thought of with these words. For the true concept of space already lies behind the word “next to one another” [*neben einander*]; at the same time the concept must already be present if the plurality of things whose order or manner of coexistence is to constitute space, where these things can only be regarded as substances if one does not want to be ridiculous. For otherwise some music, or meditation, or definition, would also be space, since within [them] many things are simultaneously next to one another. The preestablished harmony would likewise be space, since it is the manner of simultaneous being between body and soul.⁵⁴⁹

⁵⁴⁸ Cf. Kant’s remarks on the ambiguity of “ausser uns” in the A-Paralogism of the CPR at A373.

⁵⁴⁹ Crusius, *Entwurf*, §49. All translations of Crusius are my own. There are a number of striking parallels between Sec. 4 of ID and Crusius’ discussion of time and space in §50-54. Crusius’ discussion lends some credence to the logical priority interpretation discussed in Ch. 4: like Kant, Crusius argues that these concepts refer to concrete entities which are not substances, but which contain substances, and this conclusion is established by appealing to the fact that the mind can conceive of time and space independently of their occupants, though not vice versa. From this, Crusius infers that time and space are not systems of relations, and indeed, that the Leibnizian-Wolffian definitions of these concepts are circular since space and time are what ground the possibility of spatiotemporal relations. This objection is distinct, however, from the one just identified above. On the other hand, there are also important differences between Kant and Crusius: in particular, Crusius maintains that space and time are concepts of the intellect which are originally acquired through abstraction when we conceive of these entities independently of their occupants.

Like Lambert, Crusius objects that the Leibnizian-Wolffian definition is *too broad*, so much so that unless one already had a concept of space “scarcely anything could be thought of with these words” [ibid]. If space is defined as an order of coexistence, then the different notes in a melody, the marks of a concept, or even the relation between mind and body would constitute space.⁵⁵⁰ But this is obviously absurd: although the mind and the body are distinct substances which coexist with one another, and stand in an ordered connection by virtue of the pre-established harmony, their order of coexistence is certainly not a kind of space; though the mind and body are related insofar as their mutual states are connected, this relation certainly cannot be a *spatial* relation since the mind exists outside of space. Like Lambert, Crusius notes that Wolff’s definition is only plausible if “next to one another” is conceived of through the concept of space (“the true concept of space already lies behind the word *neben einander*” [ibid]); but then the Wolffian definition is of course circular, since the concept of space is the *definiens*, rather than the *definiendum*.

On my interpretation, Kant’s objection to the Leibnizian definition of space has nothing to do with substantivalism and relationalism, but is instead designed to show that space cannot be conceived of through abstract concepts of the understanding. In his attempt to demonstrate this, Kant takes as his starting point the same considerations which were already raised by Lambert and Crusius against the Leibnizians’ definition of space. Wolff claims that space is given when there is a multitude of beings existing outside one another. The concept of externality which Wolff uses to define space is obviously transcendent, for since externality is defined through the PNC, and this principle is universal and necessary, the concept of externality must be common to every possible being. But, according to Kant, the problem is that space is not given by the mere existence of a plurality of beings with impossible determinations, for we can conceive of beings coexisting independently of one another, and thus as different and outside one another (in the transcendent sense), without also conceiving of them in space—as when, for example, we conceive of immaterial substances coexisting alongside one another in the intelligible world.⁵⁵¹ Since we can conceive of an order of coexistence without conceiving

⁵⁵⁰ Note that the examples Crusius gives are all of things which are mental: a piece of music consists in a series of sounds (which are sensations), meditation is an act of thinking, definitions are concepts, etc.

⁵⁵¹ That Kant believes we can conceive an order of coexistence without conceiving of space is evident from his discussion of the form of the intelligible world in Sec. 4 of ID, Ak 2:407-410. There, Kant claims that the intelligible world is to be conceived of as a world whose members consist in a multitude of impossible substances, and that these substances coexist (or are connected) with one another by virtue of the fact that they have a common cause, namely God. This form of the intelligible world is elsewhere referred to as the “Principle of Coexistence”. Kant originally introduced and demonstrated this principle in Ak 1:413-416 of *Nova Dilucidatio*, though, in contrast to ID, in *Nova* Kant still endorsed the Leibnizian view of space, and thus maintained that an order of coexistence constitutes a space. The form of the intelligible world is also outlined in more detail in Ak 2:329-341 of *Dreams of a Spirit-Seer*, though Kant deliberately attempts to deal with this matter in a facetious way. For further discussion of the form of the intelligible world and the principle of coexistence, as well as the accompanying principle of succession, see below. As an aside, note that Kant need not have appealed to our ability to conceive of immaterial substances coexisting outside one another as his only counterexample to the Wolffian definition of space; he could have also cited the example of other abstract entities, like numbers, which are also distinct from one another by virtue of having different determinations (and thus exist “outside” one another), but are clearly not spatial.

of space, Wolff's definition must be extensionally inadequate, at least if externality is defined transcendently. Now, as Lambert notes, Wolff appears to be somewhat sensitive to this problem, and attempts to deal with it, albeit surreptitiously, by implicitly defining space through a concept of externality which is less generic—indeed, the only reason the definition appears to be plausible is because Wolff exploits this ambiguity. Intuitively, space is only given when a plurality of beings exist *outside* one another by occupying *distinct locations*—that, it seems, is the *kind* of order of coexistence required to constitute a space. But this presents us with a new problem, for if we say that one thing exists outside another when they occupy distinct locations, then the definition is now circular, for this concept of place (regardless as to whether it is substantival or relational) can only be understood through the concept of space, viz., one thing exists outside another when they occupy different parts, or locations, *in space*. And thus, like Crusius and Lambert, Kant's objection is that the Wolffian definition of space is either extensionally inadequate, since it does not distinguish between impossible beings which exist in space from those which do not, or circular, since it illicitly appeals to a notion of externality which presupposes the concept of space.⁵⁵²

Having demonstrated the inadequacy of the Leibnizian definition of space, Kant then takes these reflections one step further than either Crusius or Lambert by using them to show that space is not a concept of the understanding. For Kant, the defining mark of the concepts which the Leibnizians use to define space, or any other concept which may be attributed to the intellect for that matter, is that their intentional content is abstract;

⁵⁵² Aside from his acquaintance with the writings of Lambert and Crusius, there is also some direct textual evidence which supports this interpretation. In the version of the objection which appears in *Metaphysik Mrongovius*, Ak 29:830-831, Kant first notes that the Wolffian definition of space must be extensionally inadequate since we can conceive of numerically distinct substances existing outside one another without conceiving of them in space.

...space is the order of simultaneous things posited outside each other <*ordo simultaneorum extra se positorum*> - that things can be outside another, space is needed for that. One says things can be represented outside one another without being in space, e.g., I say one substance is other than another -yes, but the positive outside <*extra*> also presupposes a space, the author says that as well: of simultaneous things posited outside and within each other <*simultaneorum extra et intra se posita*>, otherwise I cannot see what sort of relations the different things have to each other.)

Admittedly, Kant does acknowledge that we cannot *positively* conceive of any relation or connection which unites these substances together—that our cognition of these substances is merely negative. This is not surprising, given that this passage was written after the CPR, where Kant no longer allows any cognition of things as they are in themselves, and now requires that we can only positively conceive of things existing outside one another by representing them in space. But there were no such restrictions in place in ID, and the passage does at the very least indicate that Kant recognized the extensional inadequacy of the Wolffian definition, and for the very same reason as Lambert and Crusius. In the very next part of this passage, Kant then proceeds to argue that the only way of conceiving a connection between different substances in a *positive* sense is by representing them in distinct locations of space, and from here, Kant argues that the Wolffian definition of space must be circular since the positive notion of *externality* presupposes space:

The author explains space through the order of things posited outside each other <*ordo extra se positorum*>. Things in different locations are posited outside each other <*extra se positorum*>. The concept of location presupposes the concept of space...

Likewise, in the versions which appear in *Metaphysik Volckmann*, Ak 28:437-438 & *Metaphysik L1*, Ak 28:177 Kant claims the definition is circular since Wolff attempts to define space through a notion of *externality* which presupposes space.

but in refuting the Leibnizian definition, Kant takes himself to have shown that space cannot be apprehended through any abstract concepts of this sort. His basic argument, in other words, is that if space were a concept of the intellect, then we should be able to conceive of it by reflecting on the abstract concept of an order of coexistence; but, when the mind conceives of an order of coexistence, it does not thereby conceive of space. Consequently, space cannot be a concept of the intellect.⁵⁵³ Kant's claim that space is not a concept of the intellect is thus based on an appeal to introspection: the difference between the representation of space and the pure concepts of the intellect is based on the fact that when we reflect on the intentional content of our abstract concepts, introspection reveals that space cannot ever be apprehended by means them. The intentional content of our abstract concepts omit some element contained in the representation of space and, according to Kant, this element can only be understood through acquaintance—the concept of space is, in other words, a primitive concept whose content can only be indicated or defined ostensively. The representation of space is thus different in kind from those which belong to the intellect, and to mark this difference, Kant designates this concept as *sensory*.

One additional consideration which Kant very likely had in mind to provide further support for these conclusions is based on Lambert's observation that many transcendent concepts, like externality, often require certain special determinations if they are to be fully suitable to beings in the material world. Thus, bodies in the material world exist outside one another by occupying distinct locations in space, but this notion of externality is not reducible to the transcendent concept which is common to every possible being. The irreducibility of the more specific concept of externality is demonstrated by certain phenomena which can *only* be encountered through intuition. We know through intuition, for example, that two qualitatively identical beings *could* exist outside one another so long as they occupy distinct locations in space; but since the difference between these entities obviously cannot be explained by appealing to any differences in their determinations, the transcendent concept of externality cannot be used to define the kind of externality which obtains between bodies in the material world. Indeed, if the Identity of Indiscernibles is, as the Leibnizians maintain, a principle of reason, then it is simply impossible for beings to be different if they share all their determinations in common with one another. And yet, we know through intuition that two qualitatively identical beings *could* exist outside one another so long as they occupy distinct locations. Insofar as that is the case, this notion of externality cannot be inferred from abstract concepts of the intellect or derived from so-called principles of reason. But if the kind of externality which obtains between material beings cannot be derived from the transcendent concept given by the intellect, then neither can the concept of space, since space is the very concept that explains the kind of externality that obtains between

⁵⁵³ In the version of the objection from *Metaphysik Vigilantius*, Ak 29:982, Kant explicitly notes that part of the reason why Wolff's definition is circular is because he attempts to define space through a concept of the understanding (“...if Wolff thinks things in space, and posits space in the order of simultaneous things <*ordine simultaneorum*>, then space is *cognized through a concept of the understanding*” [my italics]).

material bodies. That is, if the concept of space could be derived from the transcendent notion of externality, then the kind of externality that obtains among qualitatively identical beings should also be derivable from the transcendent concept of externality; but since this is impossible, it follows that the concept of space is not derivable from any transcendent concept of externality. What is indicated, then, by phenomena such as qualitatively identical beings which are nevertheless numerically distinct is that the concept of space provides a notion of externality, or way of distinguishing and individuating beings, which cannot be explained through reason (and indeed may even *conflict* with it—see below), but can only be indicated ostensively through intuition.⁵⁵⁴

⁵⁵⁴ While Kant does not explicitly articulate this argument in ID, he does appeal to something like it in the Amphiboly, a section of the CPR devoted to exposing the errors of Leibnizian metaphysics by tracing them back to the fundamental principles which give rise to them. Kant identifies the Identity of Indiscernibles as one of these core Leibnizian principles, and attempts to show that it cannot be *universally applicable* since it conflicts with certain features of space which are revealed through intuition. Interestingly enough, Kant acknowledges that the Identity of Indiscernibles is *true* (indeed *analytic*), but only insofar as its scope is restricted to what the mind represents through *concepts* of the understanding; what he denies is that the principle can be extended to appearances, or the *objects* we intuit through our senses. Thus, instead of rejecting the Identity of Indiscernibles altogether, Kant merely objects to the way in which the Leibnizians apply that principle: whereas the Leibnizians apply it to *both* appearances and things in themselves—unsurprisingly, Kant notes, since they assume that appearances just are confused representations of things in themselves—Kant insists that this principle does not apply universally to appearances, and that its scope must accordingly be restricted. According to Kant, the reason this principle cannot apply universally to appearances is because it is possible for qualitatively identical beings to nevertheless differ from one another insofar as they occupy distinct locations in space. What Kant suggests is that this demonstrates that space has a unique structure which provides appearances with certain principles of individuation that cannot be derived or explained through reason; and, consequently, that the difference between appearances and things in themselves is not based on how confusedly some entity is represented, but is rather a difference in *kind*. In somewhat more detail, Kant’s explanation as to why space provides a unique way of distinguishing beings is based on two distinctive features of space. First, space is unique insofar as all of its parts are qualitatively identical, and only differ from one another by virtue of their relative locations to one another: “The concept of a cubic foot of space, wherever and however often I think it, is in itself always completely the same. Yet two cubic feet are nevertheless distinguished in space merely through their locations (*numero diversa*); these are conditions of the intuition in which the object of this concept is given, which do not belong to the concept but to the entire sensibility” [A281-282/B337-338]). It is precisely because the parts of space are qualitatively identical, and yet numerically distinct, which explains how qualitatively identical appearances may also differ simply by virtue of occupying these locations: the distinctness of each place in space is conferred upon the appearances which occupy those places: “For a part of space, even though it might be completely similar and equal to another, is nevertheless outside of it, and is on that account a different part from that which is added to it in order to constitute a larger space; and this must therefore hold of everything that exists simultaneously in the various positions in space, no matter how similar and equal they might otherwise be” [A264/B320]. Second, at different times, one and the same appearance can occupy different locations, and different appearances can occupy the same location, and what this implies is that the identity of each location of space is indifferent to its occupants: “since the physical places are entirely indifferent with regard to the inner determinations of the things, a place = b can just as readily accept a thing that is fully similar and equal to another in a place = a as it could if the former were ever so internally different from the latter. Without further conditions, the difference in place already makes the multiplicity and distinction of objects as appearances not only possible in itself but also necessary” [A272/B328]). When taken together, these two factors explain why “the difference in place already makes the multiplicity and distinction of objects as appearances not only possible in itself but also necessary” [ibid]. For discussion, see A263-264/B319-320, A271-272/B327-328 & A281-282/B337-338. We discuss another version of this argument in §5.3 below.

Having reconstructed Kant's objection to the Leibnizian definition of space, let us now turn our attention to the corresponding objection to the Leibnizian definition of time. Like the definition of space, Kant claims that the Leibnizian definition of time is circular: time cannot be defined as an order of succession, we are told, since we cannot conceive of one thing existing *after* another without already conceiving of time. Now, if the interpretation we have defended to this point is correct, one would expect that Kant's objections to the Leibnizian definitions of time and space are structurally parallel. If so, then the initial problem with the Leibnizian definition is that time is defined through certain concepts which are transcendent. This, as we observed in Ch. 3, is precisely what Wolff and his followers attempted to do. Thus, time is defined as an order of succession; the concept of an order is partly defined through the concept of impossibility, which is itself defined through the PNC; and the concept of succession is defined through the transcendent concepts of ground and consequent, which are themselves given by the PSR, a principle that the Wolffians regard as logical in nature. An order of succession is thus defined as a plurality of impossible beings which are connected to one another as ground and consequent; and the concept of time is thus defined through abstract concepts of being which are themselves given by the principles of logic. Interestingly enough this Leibnizian definition was noted by Mendelssohn in a letter written to Kant outlining his various objections to the latter's *Dissertation*. While acknowledging that the word "after" is often used to signify the idea of a *temporal* succession, Mendelssohn insists that the alleged circularity identified by Kant only indicates the poverty of our language. Kant's objection to the Leibnizian definition of time does not indicate any genuine problem with

It is unclear whether Kant's objections to the Leibnizian's use of the Identity of Indiscernibles are really persuasive. The main problem is that his argument appears to rest on certain assumptions about the nature of space which would not have been acceptable to any Leibnizian: as we noted in the course of our discussion in 4.1, it is the *Newtonians* who assume that the parts of space are qualitatively identical, that the identity of each part must therefore consist in its relation to the other parts, and that the identity of each part of space is indifferent to its occupants. But to the extent that Kant's objections to the Identity of Indiscernibles assume a Newtonian conception of space, the Leibnizians will remain unmoved by his arguments since they are free to reject that theory. Thus, in response to Kant's claim that it is at least possible for qualitatively identical beings to exist in different parts of space, Leibniz would have argued that, as a system of relations, the existence of space must be parasitic upon its occupants, in the same way as any other relation is always ontologically dependent upon its relata; but then, Leibniz would have denied that qualitatively identical beings could be individuated by existing in different parts of space, for these beings, as relata, are ontologically prior to their relations, and must first exist (and therefore, by assumption, already be individuated from one another), before they can be related to one another in space. And so, despite Kant's claim to the contrary, Leibniz would have simply denied that any qualitatively identical beings could ever be encountered in space. What is indicated by these remarks is that whether or not space can individuate appearances is something that appears to depend upon further assumptions which may not be dialectically neutral (such as whether space is substantial or relational). As for the claim that the parts of space are qualitatively identical, and yet numerically distinct, Leibniz himself appeals to this very fact to demonstrate that Newtonian space is impossible: "For the different parts of empty space would be perfectly similar and congruent with each other and could not by themselves be distinguished. So they would differ in number alone, which is absurd" [Leibniz, "Primary Truths", p. 269; Cf. Leibniz to Clarke, iv. 6-7 & v. 26-27]. Of course, this objection to the Newtonian view *assumes* the Identity of Indiscernibles, but that doesn't mean Leibniz is begging the question. On the contrary, what this indicates is that unless Kant's objections to the Identity of Indiscernibles are based on assumptions which are dialectically neutral, the dispute between him and the Leibnizians will amount to little more than a stalemate.

the underlying concepts, but only with the words we use to express those concepts, and so long as one is careful in defining the concept of succession the alleged circularity can easily be avoided.

This difficulty seems to demonstrate the poverty of language rather than the incorrectness of the concept. The little word “after” [*post*] originally signifies a temporal succession; but it is possible to use it to indicate any order in general where A is possible only when or in case B does not exist, where A and B are actual things. In short, the order in which two absolutely (or even hypothetically) contradictory things can yet be present.

You will object that my unavoidable words “when or in case” presuppose once more the idea of time. Very well, then, let us shun those little words, too, if you like. I begin with the following explication:

If A and B are both real and are the immediate (or even the remote) consequences (*rationata*) of a single ground, C, I call them hypothetically compatible things (*compossibilia secundum quid*); if they are unequally remote consequences or *rationata* I call them hypothetically incompatible. I continue:

Hypothetically compatible things (things that also in this world are *compossibilia*) are simultaneous [*simultanea*]; hypothetically incompatible real things [*actualia*], however, are successive, to wit, the nearer consequence or *rationatum* precedes, and the more remote one follows.

Here, I hope, there occurs no word presupposing the idea of time. In any case, it will rest more in the language than in the thoughts.⁵⁵⁵

According to Mendelssohn, Kant’s objection to the Wolffian definition is merely verbal. The Leibnizian definition of time is indeed circular if the concept of succession is defined using the word “after”, for this word is commonly used to denote a kind of succession that can only be defined through the concept of time (viz., one thing exists after another when they exist at different times). But Mendelssohn also insists that it is possible to define the concept of succession without presupposing the concept of time, for “after” may be used “to indicate any order in general”. In the most general sense, an order is given when there are at least two impossible beings which are connected to one another as ground to consequent. Suppose two entities, A and B, are both consequences of a single ground C, and that B exists after A. According to Mendelssohn, the relation between A and B is generated by the relative proximity they have to their common ground C, and it is this which determines the order of succession. The relation between A and B may then be defined as follows: B exists after A if, and only if, A and B are impossible and A is a nearer consequence of C than B; A *precedes* B since A is closer to C than B in the order of reasons. Given this definition of the concept of succession, the Leibnizian definition of

⁵⁵⁵ Moses Mendelssohn to Immanuel Kant, December 25, 1770, *Correspondence*, Ak 10:115, pp. 123-124.

time is not circular since the relation that obtains between A and B when B exists *after* A is the logical relation of ground and consequent.

But while Mendelssohn may be right to say that his reformulated definition of succession helps evade the charge of circularity, the problem is that it is no longer clear whether this concept of succession can be used to define the concept of time. As in the case of the Leibnizian definition of the concept of space, the first problem with this definition of time is that it appears to be extensionally inadequate. Surely there can be a plurality of impossible beings which are ordered as ground to consequent which are not temporal, for even if one thing is prior to another in the *order of explanation*, that does not imply that the ground must also be *temporally* prior to its consequent. To assume otherwise is to confuse an order of explanation with a temporal order. Thus, the axioms of geometry or arithmetic, or any axiomatized system of formal logic, are prior in the order of explanation to the theorems which are derived from those axioms, but that does not mean the axioms of a deductive system are also *temporally* prior to the theorems. While there is certainly a *kind* of succession which is present when one proposition grounds another, it is assuredly not a *temporal* succession. Or, to take another example, the terms in an arithmetical series may be ordered in a kind of succession in which each number is generated from the numbers that precede it by means of a rule; but even if the position of each number in the series is grounded in those that come before it, this series does not define a temporal sequence—one number may come *after* another, but the order of succession here is not a succession in time, and it could not be a temporal succession, even in principle, since numbers are not in time.

What is indicated by these examples is that the Leibnizian definition is extensionally inadequate. The basic problem is that the Leibnizians do not distinguish between what we might call a *temporal* succession, where this consists in distinct beings coming into and passing out of existence one *after* another in time, as opposed to what we might call a *logical* succession, where this is an ordered series of entities occupying distinct positions in a static series. By failing to draw this distinction, the Leibnizian definition of time as a kind of logical order is extensionally inadequate: in positing a series of impossible beings whose elements are ordered as grounds to consequent, one has not yet posited a temporal order, for the elements in this series need not exist at different times or undergo any temporal passage. Time cannot then be defined as a series of impossible beings ordered as grounds and consequents since this definition applies to beings which do not exist in time.⁵⁵⁶

In order to fix this definition, one would have to identify the further condition(s) which must be added to the general concept of an order of succession before a plurality of impossible beings can be said to exist in time; or, to define the marks of the *kind* of succession which is characteristic of things in time. But Kant claims that any attempt to do so will end up being circular. If one says, following Wolff, that one thing succeeds

⁵⁵⁶ As simple as it may appear, this claim, I believe, is the key to understanding Kant's mysterious views on the relation between non-temporal things in themselves and temporal appearances.

another when the first exists *after* the second (viz., “the series of actual things which exist one *after* the other”), then the definition is circular, for one thing can only exist after another *in this sense* when they exist at different times (“...those things come *after* one another which exist at *different times*” [Ak 2:399]). The definition of succession which Wolff appeals to here to define the concept of time is only adequate insofar as it surreptitiously appeals to the very concept which he is trying to define. And so, as in the case of space, Kant’s objection to the Leibnizian definition of time is that it is either extensionally inadequate, since it applies equally well to both temporal and non-temporal beings, or circular, since it presupposes the very concept the Leibnizians are trying to define. If one defines “B succeeds A” by saying that A occupies a position in a series which is immediately prior to B, where the “priority” in question is that of “immediate ground”, or a kind of logical priority, then one has not defined a temporal relation since one thing can be the ground of another without those things existing at different times. On the other hand, if one defines “B succeeds A” by saying that B exists *after* A, then the definition is circular, for one thing only exists “after” another if they exist at different times, in which case the definition of succession presupposes the concept of time.

As before, in refuting the Leibnizian definition of time, Kant takes himself to have shown that time cannot be apprehended through abstract concepts of the understanding. Once again, the defining mark of the concepts the Leibnizians use to define time is that their intentional content is abstract. Kant’s argument is that if time were a concept of the intellect, then we should be able to conceive of it by reflecting on the abstract concept of an order of succession, where succession is defined through the transcendent concepts of impossibility, ground and consequent. But, when the mind conceives of an order of succession, it does not thereby conceive of time. Time, cannot then, be a concept of the intellect. The intentional content of our abstract concepts omit some element contained in the representation of time and, according to Kant, this element can only be understood through acquaintance: “...among different times, the time which is *earlier* and the time which is *later* cannot be defined in any way by any characteristic marks which can be conceived by the understanding, unless you are willing to involve yourself in a vicious circle. The mind can only discern the distinction between them by a singular intuition” [Ak 2:399]. Notice Kant’s allusion in this passage to the very same charge of circularity which he raises against the Leibnizians in §14.1. The concept of time is thus a primitive concept whose content can only be indicated or defined ostensively, and the representation of time is thus different in kind from any of those which belong to the intellect. It is, in Kant’s words, fundamentally *sensory*, not intellectual.

§5.2: *The Argument from Geometry*

To this point, the arguments given to show that the concepts of time and space do not belong to the intellect all turn on the fact that the intentional content of these concepts is not *abstract*. This of course runs counter to the interpretation defended by most commentators, who maintain that Kant’s main argument for the claim that these concepts are sensory rather than intellectual is based on the fact that they are not general, discursive concepts. Kant does of course present such an argument in §14.2 and §15.B of

ID, and he also appeals to the fact that the concepts of time and space are singular rather than general to support his claim that they are sensory. But in spite of this, it is necessary to exercise some caution in determining just what the relevance of these arguments is supposed to be. As we argued in Ch. 2, Kant's distinction between the faculties of sense and intellect is grounded in the difference between the abstract and the concrete, not on whether a representation refers to something general or singular; and, insofar as that is the case, his demonstration that time and space are not general concepts will not by itself show that they are not intellectual, at least not by Kant's own lights.

Why, then, does Kant even bother with the question of whether the intentional content of the concepts of time and space is singular or general? It seems to me that the answer to this question is twofold. First, Kant does claim that there are two *forms* of intellectual cognition, namely, a *real* use of the intellect and a merely *logical* use. Insofar as that is the case, if Kant's demonstration that time and space are not intellectual is to be complete, he must show that these concepts do not belong to either form of the intellect. To this point, however, Kant has only demonstrated that the concepts of time and space do not represent anything abstract, which only shows that they do not belong to the intellect in its real use. What is still needed, then, is a demonstration that these concepts do not belong to the intellect in its logical use. But since the logical form of the intellect is responsible for generating discursive concepts through acts of reflection, comparison and abstraction, it must be that the arguments in §14.2 and §15.B are primarily designed to show that time and space are not concepts of the intellect in its logical use. Secondly, these arguments are not only necessary in light of Kant's distinction between the two forms of the intellect, they are also dialectically necessary insofar as Kant is interested in refuting the Leibnizian account of the concepts of time and space. As we saw in Ch. 3, the Leibnizians maintain that the concepts of time and space are *intellectual*, at least in part, since they are generated through the acts of reflection, comparison and abstraction characteristic of the logical use of the intellect. The arguments in §14.2 and §15.B thus appear to be designed to refute the Leibnizian account as to why these concepts are intellectual. Although *Kant's* distinction between sense and intellect is based on whether a representation is abstract or concrete, the Wolffians only recognize a logical use of the intellect, and thus distinguish between these faculties according to whether a representation is general or singular.⁵⁵⁷ To the extent then that Kant is interested in

⁵⁵⁷ I mention the Wolffians here in order to distinguish Leibniz's followers from Leibniz himself. Like the Wolffians, Leibniz claims the mind originally acquires these concepts through the kinds of operations characteristic of the logical use of the intellect. But as we saw in Ch. 2, Leibniz, like Kant, maintains that a concept is intellectual when the intentional content of that representation is abstract, and that, consequently, when the concepts of time and space are cognized through the fundamental categories of being, the intentional content of these concepts is abstract. This, of course, marks an important difference between Leibniz and his followers: while Leibniz and the Wolffians alike agree that the concepts of time and space are definable through the fundamental categories of being, Leibniz maintains that the intentional content of these concepts is abstract, whereas the Wolffians, who only recognize a logical use of the intellect, maintain that the intentional content of these concepts is something general, and not different in kind from our sensory representations. On the nature of the distinction between sense and intellect, Leibniz thus has more in common with Kant, even if they disagree as to whether the concepts of time and space can be cognized through abstract concepts of the intellect.

refuting this account, he must show that the concepts of time and space are singular rather than general, even if this cannot be Kant's main reason for believing that these concepts are sensory.

There are two basic reasons why Kant thinks the concepts of time and space cannot be given by the understanding in its logical use. The first turns on the fact that the cognitive activities responsible for generating the representations of time and space are different in kind from those which are characteristic of the intellect in its logical use. The representations of time and space are not given through the acts of reflection, comparison and abstraction, they are generated through the *coordination* of our sensations. Through coordination the mind projects the sensations given through affection by representing them in spatiotemporal locations, and this act of coordination is not a kind of reflection, comparison or abstraction, it is an act of *localization* which is different in kind from the activities characteristic of the intellect. Indeed, Kant claims that the intellect cannot even *begin* to analyze the materials given by sense unless the mind *first* coordinates these sensations by localizing them in time and space: no concept can be acquired through abstraction until the mind has first coordinated the sensations originally given by affection, and these acts of coordination must therefore be prior to the acts of reflection, comparison and abstraction. This last point indicates a further contrast between these cognitive activities. Kant stresses that the mind cannot even begin to carry out the kinds of analysis characteristic of the intellect in its logical use so as to generate a concept unless some other representation, whether it be pure or empirical, is first *given* to the mind in some way or other. The function of the intellect in its logical use consists in separating out some content which is contained in another as a part to a whole, and what this presupposes is that the mind always begin with some previously given cognition which it then proceeds to analyze into its component parts. But the mind does not generate the representations of time and space on the basis of some *other* representation which is first given to it; instead, the acts of coordination responsible for generating these representations *produce* a certain content which was not present in anything originally *given* to the mind. Whereas abstraction always involves eliminating in thought some part of a given whole, the sensual materials originally given by affection do not contain spatiotemporal form, and that is precisely why spatiotemporal form cannot be abstracted from sensations—namely, it is not present in them to begin with. The acts of coordination which generate the representations of time and space thus *produce* a certain content which does not correspond to anything that was originally given to the mind in any way.

Whereas the first argument appeals to the fact that the kinds of cognitive acts responsible for generating the representations of time and space are different in kind from those characteristic of the intellect in its logical use, Kant's second argument is based on the assumption that the intentional content of any concept generated through reflection, comparison and abstraction is always something general. From this assumption, Kant then attempts to show, in §14.2 and §15.B, that time and space cannot be concepts of the intellect since the intentional content of these representations is something singular.

2. *The idea of time is singular* and not general. For no time is thought of except as a part of the same one boundless time. If you think of two years, you can only represent them to yourself as being in a determinate position in relation to each other; and if they should not immediately succeed each other, you can only represent them to yourself as joined to one another by some intermediate time...Moreover, you conceive all actual things as situated *in* time, and not as contained *under* the general concept of time, as under a common characteristic mark. [Ak 2:399]

B. *The concept of space is a singular representation* embracing all things *within itself*; it is not an abstract common concept containing them *under itself*. For what you speak of as *several places* are only parts of the same boundless space related to one another by a fixed position. And you can only conceive to yourself a cubic foot if it be bounded in all directions by the space which surrounds it. [Ak 2:402]

The basic idea here is that space and time are not general concepts which refer to some feature or set of features that particular things share in common with one another. If space and time were concepts belonging to the logical use of the intellect, then the intentional content of these concepts would refer to something general; particular spaces and times would then be related to space and time as a whole in the way that the instances of a concept are subordinated to the general concept they fall under. But particular spaces and times are related to space and time as *parts to a whole*, not as instances to some general concept. Different spaces and times are nothing more than parts of a single space and time, not particulars which fall under some general concept that refers to whatever these spaces and times share in common with one another. The concepts of time and space are thus singular representations, not general concepts of the intellect.⁵⁵⁸

As we noted in our opening remarks, the arguments which are designed to show that the concepts of time and space are singular rather than general do not by themselves establish that these concepts are not intellectual in the real sense. Accordingly, even if Kant has shown that these concepts are not generated through the intellect in its logical use, one would still expect him to provide further arguments to show that they do not belong to the intellect in its real use—at least, that is, if our interpretation of Kant's distinction between the faculties of intellect and sense is correct. This, however, is precisely what Kant proceeds to do in the sections that follow: no sooner does he conclude that the concepts of time and space are singular before he then proceeds to advance a further series of arguments designed to show that time and space are not intellectual in

⁵⁵⁸ Since these arguments have already been adequately discussed in the literature, I will not bother to discuss them in any further detail. As usual one can do no better than Falkenstein, *Kant's Intuitionism*, pp. 217-252. One additional point worth noting, however, which is not frequently mentioned in the literature, is that there is another aspect of these arguments which bears on the question of whether time and space are abstract concepts belonging to the intellect in its *real use*. The arguments §14.2 and §15.B turn on the claim that space and time have a certain mereological structure (viz., space and time as a whole are prior to particular spaces and times, etc.), and Kant will later appeal to this fact to show they cannot be abstract concepts of the intellect, and also that they must therefore be transcendently ideal. We will return to this aspect of the arguments and discuss it in much more detail in §5.3 below.

the real sense. This is telling, for what it indicates is that Kant does not appear to believe that he has established that the concepts of time and space are not intellectual simply because they are not discursive concepts. What is still required is a demonstration that they are not abstract concepts of the real intellect.

The next set of arguments are distinct from those we considered in §5.1, though they are in keeping with the interpretation we proposed at this outset of this chapter. These arguments all turn on the claim that the fundamental determinations of space and time cannot be inferred from abstract *principles* of the intellect. Once again, these arguments are directed against the Leibnizians. The Leibnizians attempt to define the concepts of time and space synthetically by deriving them from certain concepts and principles which are logical in nature. But if any such derivation is to succeed, one would expect to be able to infer the fundamental determinations of time and space from the logical principles which are used to define them. Indeed, insofar as no definition can be adequate unless it identifies the essential determinations of the thing defined, the Leibnizian definitions of time and space cannot be accepted as adequate unless they enable us to infer the fundamental determinations of these concepts. But what Kant attempts to show is that the fundamental determinations of time and space cannot be derived a priori through universal principles prescribed by reason. In other words, Kant claims that if the concepts of time and space were intellectual in the real sense, then their fundamental determinations should be derivable a priori through universal principles prescribed by reason; but, contrary to the Leibnizians, Kant insists that the fundamental determinations of time and space cannot be derived a priori from *reason alone*, they can only be apprehended through intuition.

The first version of this argument turns on the assumption that the propositions of geometry which describe space cannot be justified through any principles of reason generated by the real use of the intellect. That the concept of space is fundamentally sensory is something that

...can easily be seen in the axioms of geometry, and in any mental construction of postulates, even of problems. That space does not have more than three dimensions, that between two points there is only one straight line, that from a given point on a plane surface a circle can be described with a given straight line, etc.—none of these things can be derived from some universal concept of space; they can only be *apprehended* concretely, so to speak, in space itself.⁵⁵⁹

⁵⁵⁹ Ak 2:402. Versions of this argument appear in Kant's lecture notes and Nachlass. Thus, in *Metaphysik Vigilantius K3*, Ak 29: 976-978, Kant writes that:

Properties of space and of time are of the kind that they must be derived not from any concepts but rather immediately from intuition. Wolff, e.g., derives space and its properties from objective concepts—he says it is the order of simultaneous things insofar as, being supposed to be outside each other, they exist at the same time <*ordo simultaneorum quatenus extra se positae existunt simul*>. But then it cannot be explained why space has three dimensions, namely: length, breadth, and height. These cannot be derived from experience, rather one must already have space with its three dimensions in thought before a body in experience can be represented. They thus lie already as a condition of representation in inner intuition; consciousness is forced to assume them,

In opposition to the Leibnizians, Kant claims that the fundamental determinations of space—specifically that it only has three dimensions and obeys Euclid’s “axioms of geometry”—cannot be deduced a priori from the abstract principles of reason. For the Leibnizians, the principles of mathematics are, in principle, reducible to the laws of logic prescribed by reason.⁵⁶⁰ But, at least in regards to geometry, Kant claims that other, non-Euclidean geometries are logically possible: there is no discernible contradiction, for example, in the concept of a plane figure enclosed by two straight lines, or any contradiction involved in the claim that between any two points only a single straight line can be drawn, or even in the assumption that space has four dimensions rather than three.⁵⁶¹ But if the propositions of geometry are supposed to describe the fundamental determinations of space, and there are other, non-Euclidean axiomatizations of geometry which are at least logically possible, then the propositions which describe space are not logically necessary. And, if the fundamental determinations of space are not logically necessary, then they cannot be derived from the kinds of principles which belong to the intellect in its real use.⁵⁶² Instead, what Kant claims is that the fundamental determinations of space can only be apprehended ostensively through intuition: geometry, which studies the fundamental properties of space, “does not demonstrate its own universal propositions by thinking an object through a universal concept, as happens

therefore they exist a priori as necessary and abstracted from things, they still cannot be attributed necessarily to things if they did not preexist, built upon this higher intuition. Through this, the order of things becomes distinct which Wolff in his definition of space determines as obscure when he says that space is a confused representation of the order of things insofar as they occur outside each other.

Similarly, in Ak 17:639

Spatium Absolutum, this riddle of philosophers, is certainly something correct (but not *reale*, rather *ideale*), otherwise one could not assert anything about it a priori, not, to be sure, through general concepts, but rather through properties that can be perceived in it through an immediate grasp. It is, however, nothing external, rather it is the condition of the form of all outer representation subsisting in the mind itself. **It is nothing imagined (ens imaginarium)**. For it is the sole real condition of the representation of real outer things. The **order of things that are next to on another** is not space, rather **space is that which makes such an order or better coordination** in accordance with determination possible. *If it were a merely general concept of order, then one would attempt to see how much one could derive and how one would arrive a priori at the necessity of such an order; for to derive it a posteriori is, first, contrary to what is self-evident, and then it would have only the consequences of an observation, but not of a fundamental observation (my italics).*

⁵⁶⁰ For discussion of Leibniz’s project of reducing mathematics to the principles of logic see De Risi, *Geometry and Monadology: Leibniz’s Analysis Situs and Philosophy of Space*, pp. ix-100 & Gottfried Martin, *Arithmetic and Combinatorics: Kant and His Contemporaries*, pp. vii-33; Lanier Anderson, *The Poverty of Conceptual Truth*, pp. 75-130 argues that Wolff pursued a similar project.

⁵⁶¹ Although Kant already recognized the possibility of non-Euclidean geometries in his first publication, *Living Forces* [Ak 1:24-25], it is unlikely that his argument for this claim in ID is based on the same considerations which he appealed to in *Living Forces*. In the later, Kant still endorsed the Leibnizian view that space is nothing more than a system of relations, and his argument that non-Euclidean geometries are possible is based, in part, on this very assumption. But since Kant had abandoned relationalism in ID, his assumption that non-Euclidean geometries are possible could not be based on the argument which appears in *Living Forces*.

⁵⁶² I put this point in terms of logical possibility, rather than metaphysical possibility, since the Leibnizians seem to try and reduce the latter to the former. The exact sense in which the determinations of space are metaphysically necessary or contingent is a thorny issue, which I leave aside for reasons of space.

in the case of what is rational”, it does so “by placing it before the eyes by means of a singular intuition, as happens in the case of what is sensitive” [Ak 2:403].⁵⁶³ Since there is no way to determine what the determinations of space must be like by means of the intellect alone, Kant concludes that the concept of space cannot be defined synthetically through the abstract principles of the intellect.⁵⁶⁴

It is important to note that although Kant allows that there is more than one logically consistent set of axioms which may describe the space we intuit, this does not mean that these propositions are *empirical*. To the contrary, although Euclid’s axioms are not *logically* necessary, Kant claims that there is a certain *kind* of necessity they have which enables them to be justified a priori. Although the concept of a figure bounded by two straight lines is logically possible, intuition reveals that we are incapable of constructing any such figures in the phenomenal space we represent; and while there may be no discernible contradiction contained in the concept of a four-dimensional space, we find that it is impossible to form any intuition of such a space. What Kant thinks this suggests is that there are certain constraints as to what the mind can and cannot intuit. Crucially, however, Kant does not think these constraints are imposed by any conditions which determine what things must be like in and of themselves. Only the concepts and principles of the intellect in its real use, such as those which belong to logic (or general metaphysics), determine what things must be like in themselves, since they alone are genuinely necessary and universal; but since the determinations of space cannot be derived a priori from these purely rational cognitions, the necessity which belongs to the axioms of geometry is not of the same sort. Instead, what Kant claims is that these constraints are grounded in certain facts pertaining to our innate constitution. Kant thinks he has shown that the representation of space is generated through a concept which is given to the mind as part of its innate constitution. And, insofar as the mind is innately constituted in such a way that the representations it forms of outer objects are all generated according to *this* concept of space, there will be certain constraints as to what kinds of spatial determinations the objects we intuit can and cannot have—specifically, since the representation of space generated by this concept is Euclidean, it follows that the spatial determinations of the objects we intuit must all obey Euclid’s axioms. In light of this, Kant claims that the reason why we cannot intuit other spaces is not because they are logically impossible, it is rather because the concept of space which is given to the mind as part of its innate constitution is Euclidean, and this concept imposes certain

⁵⁶³ As early as the *Prize Essay* of 1764 [Ak 2:279-281], Kant had argued that space is a primitive concept of sensibility whose fundamental determinations can only be given through intuition, and not derived from the universal principles of logic. Propositions such as “there can only be one straight line between two points” [Ak 2:281] or “that space can only have three dimensions” [Ak 2:281] can only be “explained if they are examined *in concreto* so that they come to be cognized intuitively; but they can never be proved. For on what basis could such a proof be constructed, granted that these propositions constitute the first and the simplest thoughts I can have of my object, when I first call it to mind” [Ak 2:281].

⁵⁶⁴ Kant suggests that a similar argument can be made for the concept of time in Ak 2:401. Cf. Ak 2:402 & 397-398. Like the principles of geometry, the laws of motion cannot be derived a priori from the concepts and principles given by the real use of the intellect; instead, these laws, which are based on the concept of time, can only be determined through intuition.

constraints as to what determinations the objects we intuit outside us can and cannot have—where these constraints are certain structural features of space, such as that it is three-dimensional. In turn, Kant thinks this fact provides us with a way to explain how the propositions of geometry can be justified independently of experience. If the innate constitution of the subject imposes certain constraints which necessarily apply to any possible object we can sense, then we can anticipate in advance of experience that every sensible object we intuit will be subject to these constraints. But insofar as the innate constitution of the subject imposes certain structural constraints on every possible object we can sense, we can anticipate in advance what the spatial determinations of sensible objects will be, at least in these respects, prior to actually perceiving them and inspecting their sensible qualities through experience.

Although the *concept of space* as some objective and real being or property be imaginary, nonetheless, *relatively to all sensible things whatsoever*, it is not only a concept which is in the highest degree true, it is also the foundation of all truth in outer sensibility. For things cannot appear to the senses under any aspect at all except by the mediation of the power of the mind which co-ordinates all sensations according to a law which is stable and which is inherent in the nature of the mind. Since, then, nothing at all can be given to the senses unless it conforms with the fundamental axioms of space and its corollaries (as geometry teaches), whatever can be given to the senses will necessarily accord with these axioms even though their principle is only subjective. For it will only accord with itself, and the laws of sensibility will only be the laws of nature, *in so far as nature can come before the senses*. Accordingly, nature is completely subject to the prescriptions of geometry, in respect of all the properties of space which are demonstrated in geometry. And this is so, not on the basis of an invented hypothesis but on the basis of one which has been intuitively given, as the subjective condition of all phenomena, in virtue of which condition alone nature can be revealed to the senses. Assuredly, had not the concept of space been given originally by the nature of the mind (and so given that anyone trying to imagine any relations other than those prescribed by this concept would be striving in vain, for such a person would have been forced to employ this self-same concept to support his own fiction), then the use of geometry in natural philosophy would be far from safe. For one might then doubt whether this very concept of space, which had been derived from experience, would agree sufficiently with nature, since the determinations from which it had been abstracted might perhaps be denied. And, indeed, a suspicion of this kind has even entered the minds of some.⁵⁶⁵

The only aspect of sensory cognition which cannot be anticipated in advance of experience are the qualities of the matter of intuition and appearance; but the spatiotemporal form of appearances can be known prior to experience, since it is grounded in the innate constitution of the representing subject. Certain spatial determinations must therefore

⁵⁶⁵ Ak 2:404-405. Cf. Ak 2:397 & 401-402, where Kant provides a similar explanation for how certain principles of pure mechanics can be justified a priori.

belong to the objects we intuit outside us regardless as to what is given through affection. And, insofar as that is the case, we can anticipate in advance of experience that the sensible objects we represent will be Euclidean, and thus obey axioms of Euclidean geometry. There is, of course, still a certain kind of contingency which belongs to the propositions of geometry, since the marks of the concept of space which belongs to our innate constitution are not logically necessary, and it is possible that we may have been constituted differently. But for Kant, all this means is that the propositions of geometry are not *absolutely* necessary; they are, nevertheless, *hypothetically* necessary—they are necessary, that is, *given* the innate constitution of the mind.

No doubt the dialectic here is really quite strange, even by Kant's standards, and also rather unsatisfying. On the one hand, that space is Euclidean is something that can only be discovered through intuition by observing the properties of the space we inhabit. But although this is something that can only be revealed by intuition, Kant still thinks we can know a priori that the bodies we haven't yet perceived will obey the principles of geometry so long as we know that the innate constitution of the subject remains invariant. Of course, what is far from clear is why this latter claim is any more certain than the former. If the constitution of the subject is contingent, then nothing seems to rule out the possibility that our constitution may change over the course of experience. And if that is possible, then how can we really be so sure that the bodies we have not yet perceived will indeed obey the principles of geometry? Presumably, Kant is assuming (not unreasonably) that the nature or constitution of the subject is something that possesses a certain kind of stability. But whether he is really entitled to this assumption is less than clear.

There is one final aspect of Kant's discussion which is also quite bizarre, but which needs to be discussed. To begin, although Kant recognizes that the Leibnizians attempt to derive the axioms of geometry from the laws of logic (broadly construed), he also objects that one key problem with the Leibnizian view is that it makes the science of geometry *empirical*. The Leibnizian view is

...in headlong conflict with the phenomena themselves, and with the most faithful interpreter or all phenomena, geometry. For...they cast geometry down from the summit of certainty, and thrust it back into the rank of those sciences of which the principles are empirical. For if all the properties of space are merely borrowed by experience from outer relations, then there would only be a comparative universality to be found in the axioms of geometry, a universality such as is obtained by induction, that is to say, such as extends no further than observation. Nor would the axioms of geometry possess any necessity apart from that which was in accordance with the established laws of nature, nor any precision apart from that which was arbitrarily constructed. And we might hope, as happens in empirical matters, one day to discover a space endowed with different fundamental properties, perhaps even a rectilinear figure bounded by two straight lines. [Ak 2:404]

But how can this be? If the Leibnizians maintain that the propositions of geometry can be derived a priori from the abstract concepts and principles of reason, then they are assuredly not empirical. But then how can Kant claim otherwise? The dialectic here between Kant and the Leibnizians over the evidentiary status of geometry is quite bizarre, since it is the opposite of what one might expect: thus, on the one hand, it is *Kant* who denies that the principles of geometry can be derived a priori from the laws of reason, even though he maintains, in spite of this, that these principles can be justified independently of experience; and on the other hand, it is the Leibnizians who maintain that the axioms of geometry are logical in nature, but who, nevertheless, are allegedly forced to concede that these principles can only be justified through experience. Although it is not clear how best to explain this tension away, it seems to me that the following is one possible explanation. To begin, before Kant raises this objection, he thinks he has *already* shown that the principles of geometry cannot be derived from abstract principles of the understanding. Assuming this has been granted, Kant thinks we are left with only two alternatives as to the evidentiary status of the principles of geometry. The first possibility is that the fundamental propositions of geometry are empirical. The other possibility is that they are not empirical, but the *only* possible explanation for this is that the concept of space is generated through an innate law of the mind. Kant, of course, opts for the second option—that the only way we can anticipate, prior to experience, what an object in space must be like, is *if* the representation of space is generated through an innate law of the mind's own constitution. What Kant seems to be arguing, then, is that since the Leibnizians deny that the concept of space is innate, they are forced to accept that the fundamental properties which describe space can only be determined through experience—namely, by first having perceptual experiences of spatially related bodies, and then inferring certain general principles about their spatial determinations through induction. At least, that is, so long as it has first been shown that these principles cannot be justified through reason. Put somewhat differently, what Kant thinks he has shown is that the Leibnizians cannot derive the concept of space synthetically from the concepts and principles of reason. And, as a result, Kant thinks the Leibnizians can only determine the propositions of geometry analytically, by analyzing the bodies perceived through sense, and that this entails that geometry must be empirical for the Leibnizians.

The basic idea behind Kant's argument is that the fundamental determinations of time and space cannot be derived from the principles of logic or metaphysics precisely because there are no absolutely necessary, universally valid principles which govern these entities. Instead, Kant insists that the fundamental determinations of time and space can only be determined through intuition, never by means of the laws of logic or rational reflection.⁵⁶⁶

§5.3: The Argument from Composition

⁵⁶⁶ The argument from incongruent counterparts proceeds along much the same lines [Ak 2:403]. But for reasons of space, I will omit any discussion of this argument.

In the Corollary to Sec. 3, Kant presents one final argument designed to show that the concepts of time and space are not intellectual. This argument turns on the claim that the fundamental properties of time and space are inconsistent with certain principles of the understanding.

These, then, are the two principles of sensitive cognition. They are not, as is the case with the representations of the understanding, general concepts but singular intuitions which are nonetheless pure. In these intuitions, the parts and, in particular, the simple parts do not, as the laws of reason prescribe, contain the ground of the possibility of a compound. But, following the paradigm of sensitive intuition, it is rather the case that *the infinite contains the ground of each part* which can be thought, and, ultimately, the ground of the simple, or, rather, of the *limit*. For it is only when both infinite space and infinite time are given that any definite space and time can be specified by *limiting*. Neither a point nor a moment can be thought in themselves unless they are conceived of as being in an already given space and time as the limits of that same space and time. Therefore, all the fundamental properties of these concepts lie beyond the limits of reason, and, thus, they cannot in any way be explained by the understanding. [Ak 2:405]

According to Kant, the concepts of time and space cannot belong to the understanding since their fundamental marks are inconsistent with certain “laws of reason.” The specific laws of reason which he cites is that every composite must be made up of simple parts, and that these parts are what ground the existence of the whole.⁵⁶⁷ According to Kant, the mereological structure of time and space is inconsistent with this law of reason: time and space are composites which are not made up of anything simple, and are wholes which ground the existence of their parts. Space and time thus violate the principles of reason and cannot for that reason be concepts of the intellect.

Since Kant’s formulation of this argument is rather cursory, it will be useful to go through its various parts step by step, especially since many of the key premises are only explicitly defended elsewhere. To begin, Kant claims that it is a law of reason that everything composite must ultimately be composed of simple parts, and that the existence of these simple parts is what grounds the existence of the whole. Although Kant does not attempt to justify this claim anywhere in ID, the reasons he articulates in other works, both pre-critical and critical, would have been familiar to any reader acquainted with the writings of the Leibnizians. Briefly, a composite being is an entity made up of distinct parts which form a whole when those parts stand in a certain relation to one another. For Kant, *composition* is nothing more than a kind of relation, and, for this reason, Kant

⁵⁶⁷ As we have seen, Kant explicitly endorses this principle in the opening sections of ID when discussing the concept of a substantial compound, Ak 2:389 (“...in the case of substantial compounds...it can easily be shown by an argument, which is based on reasons deriving from the understanding, that...[simples] are given”) and it is implicit throughout Ak 2:387-388. Cf. Ak 2:415, where Kant writes that it is by means of an “*argument of the understanding*, which proves that, if there is a substantial compound, then there are principles of composition, that is to say, simples.” Kant then goes on to suggest that the composition of bodies in the sensible world is not consistent with what is required by the principles of reason.

claims that if we assume there is a composite which does not contain anything simple, then the parts of that entity will consist in nothing more than an endless network of relations: at each stage of analysis what is referred to as the “parts” of that composite are beings which stand in a certain relation to one another, but if there is nothing simple, then each of these parts, when taken separately, will themselves always be revealed through additional analysis to consist in nothing more than *further* relations of composition, so that, ultimately, there is nothing but relations of composition all the way down. As Kant notes, if we were to imagine all the relations of composition between the parts of such an entity to disappear, there would be absolutely nothing left over—not only would there be no simple parts (*ex hypothesi*), there would be no parts whatsoever, at least not in any proper sense of the term. But Kant claims that this is conceptually incoherent. No relation can exist unless there are relata standing in that relation; but if composition is nothing more than a kind of relation, and there is a network of relations between the separate parts of a composite which is not ultimately grounded upon anything non-composite, then what we are left with is a network of relations without any relata that are so related, which Kant claims is impossible. A composite cannot exist, therefore, unless there is something which grounds the relation between the parts of that composite, and since this cannot itself be anything composite, on pain of infinite regress, the only alternative is that the ultimate ground for any composite must be something simple.⁵⁶⁸

Now, space and time are composite beings to the extent that they are said to be singular wholes whose parts are just the various regions of time and space taken in delimitation of the whole.⁵⁶⁹ Contrary, however, to the law of reason which requires that

⁵⁶⁸ Versions of this argument appear in Kant’s *Physical Monadology* [Ak 1:477], *Prize Essay* [Ak 2:279], and in the *Critique* [A265-266/B321-322, A274/B330, A283-286/B339-342, and in A434-438/B462-466 as the thesis of the second antinomy]. Cf. Leibniz, *Monadology*, §1-2, p. 643; Wolff, DM, §51-93 & *Ontologia*, §685-687; Baumgarten, *Metaphysica*, §224-235. In many versions of this argument, composition is referred to as an accident (specifically an extrinsic determination), and the existence of simples is inferred from the assumption that every accident requires a substance, not that every relation requires relata. It was also common to then infer, as a corollary, that every substance must be simple.

⁵⁶⁹ Admittedly, in the passages cited earlier Kant applies the principle that everything composite must be made up of simples only to *substantial compounds*. Nevertheless, it is clear he believes the principle is generally true for any possible composite or whole since he applies it to time and space in Ak 2:405. It should be noted here that Kant discusses the sense in which space and time are (or are not) composite entities in his remarks on the thesis of the second antinomy:

When I talk about a whole which necessarily consists of simple parts, I understand thereby a substantial whole only as a proper composite, i.e., as a contingent unity of a manifold that, **given** as **separated** (at least in thought), is posited in a reciprocal combination and therefore constitutes one entity. Properly speaking, one should call space not a *compositum* but a *totum*, because its parts are possible only in the whole, and not the whole through the parts. In any case, it could be called a *compositum ideale* but not a *compositum reale*. Yet this is only a subtlety. For since space is not a composite of substances (not even of real accidents), if I remove all composition from it, then nothing, not even a point, might be left over; for a point is possible only as the boundary of a space (hence of a composite). Thus space and time do not consist of simple parts...Our inference from the composite to the simple is valid only for things subsisting by themselves. But accidents of a state do not subsist by themselves. Thus one can easily ruin the proof for the necessity of simples as a constituent parts of every substantial composite (and thus also the whole thesis), if one extends the proof too far and tries to make it valid for all composites without distinction, as has sometimes actually happened. [A438-440/B466-B468]

everything composite be composed of simple parts, time and space cannot be made up of anything simple. The reason Kant generally gives in support of this claim is that time and space are infinitely divisible: any region of time or space can always be divided into ever smaller parts, so that at no point will we ever come upon anything simple, or a part which cannot be divided into further parts.⁵⁷⁰ But if time and space are not composed of simple parts, then the only alternative is that they consist in an endless network of relations; and in that case, space and time must be composite wholes whose mereological structure consists in nothing more than relations of composition. This, however, is precisely what leads to a conflict with reason. As before, composition is nothing more than a relation that obtains between the parts of a composite and no relation can exist unless there are relata that stand in those relations. If space and time consist in nothing more than a network of relations, and there are no simple parts which ground those relations, then both space and time are, in effect, composites which are not composed of anything; if we were to imagine all these relations of composition to be eliminated, there would be nothing left over to ground these relations—no relata to be originally placed in spatiotemporal relations—and for Kant, that is metaphysically absurd, since it violates the principle that no relation can exist without the existence of relata which ground that relation. The fundamental properties of time and space are thus in conflict with the laws prescribed by reason, which require that whenever something composite exists, there must be simple parts which compose and ground the existence of the composite.⁵⁷¹

Kant distinguishes between a *compositum reale* and a *compositum ideale*, and claims that a *genuine* composite is an entity in which the parts precede, and make possible the whole, whereas an ideal composite, or *totum*, is an entity in which the whole precedes, and makes possible the parts. Space and time are cited as examples of ideal composites. The reason a *totum* is an *ideal* composite is because it is a kind of whole which is not genuinely composed of any parts. Kant's distinction between a *compositum reale* and *compositum ideale* corresponds to the distinction he draws in Ak 17:293, Refl. 3789 between a *totum syntheticum* (which is a whole made possible by its parts) and a *totum analyticum* (a composite whose parts are made possible through the whole), and space and time are cited as examples of *tota analytica*. Interestingly enough, Kant's distinction between ideal and real composites is also found in Leibniz, who bases the distinction on the same grounds. A typical example is found in Leibniz's letter to De Volder from October 11th, 1705, p. 327: "Yet space, like time, is not something substantial but something ideal, and consists in possibilities, i.e., the order of possible coexistents at any given time. And so there are no divisions in it, except those that the mind makes, and the part is posterior to the whole. In real things it is the opposite: unities are prior to the multitude, and multitudes do not exist except through unities." Cf. Leibniz to De Volder, January 19, 1706, p. 333. For further discussion and citations, see Vailati, *Leibniz and Clarke*, pp. 33-34, 112-113, 115& Futch, *Leibniz's Metaphysics of Time and Space*, pp. 52-56.

⁵⁷⁰ Kant most often mentions the infinite divisibility of space and claims that this has been demonstrated by mathematics. See Ak 1:478-479, Ak 2:278-279, 4:505-508, 8:202-203, A439/B467, and A524-7/B552-5. In ID, the infinite divisibility of time and space is endorsed in Ak 2:388, 399, 403*, 415-416.

⁵⁷¹ A closely related, albeit slightly different, reason which Kant gives is based on the observation that space and time are composites in which the parts do not ground the whole, but where it is instead the whole which grounds the existence of the parts. Each region, or part, of time and space can only be *conceived of* as a delimited portion of a wider whole. The parts of time and space are nothing more than abstractions, and space and time must therefore be given as a whole before any division into different regions or parts is possible. As for the simple parts of time and space, namely points and moments, these are nothing more than *limits* or boundaries which are only given by delimiting some region of time and space; time and space are certainly not composed of points or moments, for no combination of these parts could result in even the smallest region of time or space. And thus, in the case of time and space, it is the whole which grounds the parts, rather than vice versa. This of course is the argument Kant appeals to in §14.2 [Ak 2:399] & §15.B [Ak

Admittedly, the argument we have just attributed to Kant is not explicitly stated in the form in which we have just presented it anywhere in ID—though it does appear in many of his other writings.⁵⁷² Nevertheless, it is clear that this is indeed the very argument that Kant is alluding to both in the passage cited at the start of this section, as well as in a number of other places in ID. Kant explicitly endorses the central premises of the argument throughout ID—albeit sometimes in slightly different contexts—and it is clear he recognizes their implications, even if he does not put them all together in any one place. Thus, space and time are referred to as composite entities in Ak 2:392, 399, 403, 405; composition is said to consist in the relation between the parts of a composite [Ak 2:387,

2:402], as well as in the 3rd and 4th arguments of the metaphysical exposition [A24-25/B39 & A31-32/B46-48], to show that space and time are not concepts of the intellect. Kant appeals to this argument in Ak 29:980-982 to establish that space and time cannot be conceived of through concepts of the understanding (and thus cannot apply to things as they are in themselves). Unlike the argument discussed in the text, which appeals to the infinite divisibility of time and space, in this version of the argument, Kant appeals to the infinite extent of time and space.

⁵⁷² Amongst which, perhaps the most notable versions are those which appear in “On a Discovery” [Ak 8:202-203], *Metaphysical Foundations of Natural Science* [Ak 2:504-508], B66-69 of the Transcendental Aesthetic (where Kant claims to establish transcendental idealism by arguing that space and time, as well as everything represented therein, consists in nothing but relations which are not grounded in anything non-relational), A265-266/B321-322, A274/B330 & A283-286/B339-342, as well as the series of *Reflexionen* in Ak 18:374-376, Refl. 5876-5889 (variously dated from 1778-1784). It is also hinted at in Ak 2:278-279 of the *Prize Essay*. The version one finds in Ak 28:437-438 of *Metaphysik Volckmann*, 1784/5 is typical. Here Kant argues that every composite entity conceived of through the intellect must be made up of simples; but, since time and space are continuous (and therefore infinitely divisible), they cannot have simple parts, even though they are composite. Kant then identifies the simple substances (or “monads”) conceived of through the intellect as things in themselves, and argues that these cannot ever be cognized through sense since space and time are the conditions of sensibility, and nothing simple can ever be encountered therein. Interestingly enough, no sooner does Kant come to this conclusion before he then proceeds to argue that the Leibnizian-Wolffian definitions of time and space are circular and extensionally inadequate, which suggests that the argument from composition is connected to his rejection of those definitions. This connection is also expressly indicated by Kant in the concluding remarks of his presentation of the argument in *Metaphysical Foundations* [Ak 4:507-508], which should be compared with what was established in §5.1 above.

The ground of this aberration lies in a poorly understood *monadology*, which has nothing at all to do with the explanation of natural appearances, but is rather an intrinsically correct *platonist* concept of the world devised by *Leibniz*, insofar as it is considered, not at all as object of the senses, but as thing in itself, and is merely an object of the understanding, which, however, does indeed underlie the appearances of the senses. Now the *composite of things in themselves* must certainly consist of the simple, for the parts must here be given prior to all composition. But the *composite in the appearance* does not consist of the simple, because in the appearance, which can never be given otherwise than as composed (extended), the parts can only be given through division, and thus not prior to the composite, but only in it. Therefore, Leibniz’s idea, so far as I comprehend it, *was not to explicate space through the order of simple beings next to one another, but was rather to set this order alongside space as corresponding to it, but as belonging to a merely intelligible world* (unknown to us) [my italics]. Thus he asserts nothing but what has been shown elsewhere: namely, that space, together with the matter of which it is the form, does not contain the world of things in themselves, but only their appearance...

It should be noted that the different versions of this argument are often used to establish a number of different conclusions. There have also been many different interpretations of these arguments. Thus, Rae Langton, *Kantian Humility*, pp. 210-218 interprets the argument in B66-69 as having nothing to do with space and time; and Falkenstein, *Kant’s Intuitionism*, pp. 293-300 claims that Kant primarily uses the argument to refute the Newtonian view by showing that space and time are not substantial, or independently existing entities, though he acknowledges that Kant uses it for other purposes as well.

viz., composition is given when a number of things stand “in reciprocal relations to each other”]; space and time are said to be infinitely divisible in Ak 2:388, 399, 403*, 415-416, and from this Kant infers that they are not composed of simple parts [Ak 2:399, 403*, 405, 415]; Kant also explicitly recognizes that if they do not have simple parts, then they must instead consist of nothing but a network of relations (or at least that nothing remains if there is nothing simple in a composite) [Ak 2:387, 399] and that this is absurd since no relation can exist without its relata [Ak 2:399, 400, 403-404].⁵⁷³

In ID, the closest Kant ever comes to explicitly articulating this argument is in §14.4, in the course of a proof designed to show that time is a continuous magnitude:

Time is a continuous magnitude, and it is the principle of the laws of what is continuous in the changes of the universe. For the continuous is a magnitude which is not composed of simples. But by means of time it is nothing but relations to each other. Thus, in time as a magnitude there is composition; and should this composition be conceived as wholly cancelled, it would leave nothing at all behind it. But if nothing at all is left of a compound when all composition has been cancelled, then this compound is not composed of simple parts. Therefore, etc.⁵⁷⁴

But although the argument in this passage is similar to the one we identified above, they are nevertheless different. Kant begins by defining a continuous magnitude as a composite entity which is not composed of simple parts; he then argues that, since time consists of nothing but relations of composition, nothing would remain if these relations were wholly cancelled, and from this it is supposed to follow that time does not consist of simple parts, and is thus a *continuous* magnitude. But then Kant is not arguing that time cannot be composed of simples, and is thus a composite entity which consists in nothing but relations, *because* it is infinitely divisible; instead, he *assumes* that time consists in nothing but a network of relations, and is thus not composed of simples, in order to *demonstrate* that it is a continuous magnitude (and hence infinitely divisible).⁵⁷⁵ Still, what is indicated by this passage is that Kant believes that time and space are composite entities which consist in nothing but relations, and that if all composition were cancelled, nothing would be left behind. And Kant indicates that he believes this to be absurd in his

⁵⁷³ In his copy of the first edition of the CPR, Kant writes “In space there are solely outer relations, in time purely inner ones; the absolute is absent” [Ak 23:37, Refl. CXLVIII E 45-A 265]. This note appears in the margins alongside a version of the argument from composition, A265-266/B321-322.

⁵⁷⁴ Ak 2:399. Kant notes that the same argument also applies to space, but does not explicitly discuss it (“It is easy to demonstrate that space must necessarily be conceived of as a continuous magnitude, and I shall pass over it here” [Ak 2:403*]). Cf. Ak 1:478. Note that Kant never distinguishes between continuity and infinite divisibility, and assumes that a magnitude is continuous if and only if it is infinitely divisible.

⁵⁷⁵ I am indebted to Falkenstein, *Kant’s Intuitionism*, p. 294 for this observation. Kant does, however, infer from the fact that time and space are continuous that neither can consist of simple parts, such as points or moments, but that these are merely limits, which he defines as that which grounds the boundaries of a thing (“Accordingly, any part whatever of time is itself a time...the things which are in time, simple things, namely *moments*, are not parts of time, but *limits* with time between them [Ak 2:399]; “the result of this [that space is continuous] is that the simple in space is not a part but a limit” [Ak 2:403*]). But since anything continuous is also infinitely divisible for Kant, this indicates that Kant does infer that time and space are not composed of simples from the fact that they are infinitely divisible.

concluding remarks in §15.D: those “who defend the reality of space”, and “conceive of it as an *absolute* and boundless *receptacle* of possible things”, are guilty of hypostasizing an “empty fabrication of reason...[for] since it invents an infinite number of true relations without there being any beings which are related to one another, it belongs to the world of fable” [Ak 2:403-404]. Likewise, in §14.5 Kant denies the objective reality of time by arguing that this would require “some continuous flux within existence, and yet independently of any existent thing”, which is “a most absurd fabrication” [Ak 2:400].⁵⁷⁶ Thus, although in ID Kant does not explicitly argue that time and space are composite entities which are not composed of simples because they are infinitely divisible, it is clear that he accepts both of these claims and recognizes their connection and implications.

Now, although this argument has a number of different applications, in Ak 2:405 Kant appeals to it to show that time and space cannot be cognized through concepts which belong to the intellect. The basic idea, it seems, is that the mereological structure of time and space, or any other composite whole represented through sense, is incompatible with the marks belonging to the composite wholes which are conceived of through the intellect. The concept of composition which belongs to the intellect requires that every composite be composed of simples. Consequently, if space and time were concepts of the intellect, then they should be subordinate to the abstract concept of composition, and thus be composed of simples, since they too are composite wholes. But the representations of time and space given through intuition cannot be composed of simple parts. Space and time are thus composite wholes which are different in kind from the composite wholes represented through the intellect; their mereological structure is unique, and cannot be derived from the understanding, or conceived of through the abstract concept of composition given by the intellect. From this, Kant infers that the representations of time and space must be different in kind from the concepts belonging to the intellect.

This lack of correspondence between the way the concept of composition is understood through the intellect, and the kind of composition which is intuited in time and space, is what underlies Kant’s opening remarks in ID. Recall that the basic problem introduced in the opening sections of ID, which Kant’s distinction between sense and intellect is designed to solve, is that there are certain concepts which are originally generated through the intellect which cannot, in principle, ever be represented through sensory intuition. And, one of the examples Kant cites to illustrate this phenomenon is of course the concept of a simple substance.⁵⁷⁷ Starting with the concept of a substantial

⁵⁷⁶ Admittedly, in these passages Kant appeals to these claims in order to refute substantialism, as Falkenstein has noted. But this does not mean that Kant does not also appeal to these premises to show that time and space are fundamentally sensory.

⁵⁷⁷ His other example, the concept of a world, also turns on the incompatibility between the abstract concept of composition and what the mind can intuit in time and space. In regards to the concept of a world, Kant says we represent such a whole “by means of the concept of *composition* in general...and thus by means of ideas of the understanding which are universal” [Ak 2:387]. But Kant also claims that it is impossible to represent a world, or a whole which is not itself part of anything else, through the senses, and the reason is because space is infinite in extent: the mind could never form the representation of a complete whole which was infinite in extent through the successive addition of its parts, for an infinite number of parts could never be synthesized in a finite time. As with the concept of a simple substance, Kant insists that our inability to

compound—which, he notes, can either be given by sense or understanding—the mind arrives at the concept of a simple by means of analysis, namely, when it forms the concept of a part which is not itself a whole composed of other parts [Ak 2:387]. The problem, however, is that although Kant maintains that the existence of simple substances is guaranteed by universal and necessary principles of reason, the conditions required for sensory cognition entail that these simple substances cannot ever be encountered through the senses. Thus, on the one hand, through the understanding the mind forms the “idea of things which are simple by taking away generally the concept of *composition*, which derives from the understanding. For the things which remain when every element of conjunction has been removed are *simple* things” [Ak 2:387]. On the other hand, if we wish to represent the simple parts of some compound which we encounter through sense, we have to break it down into all its possible parts (“...under the laws of cognitive intuition, this only happens, that is to say, all composition is only cancelled, by means of a regress from the given whole to all its *possible parts whatsoever*, that is to say, by means of analysis,* which in its turn rests upon the condition of time” [Ak 2:387-388]). In any compound there is always a multiplicity of parts, and simples will only emerge if the analysis of that compound can be completed in a finite period of time. But this will be impossible when these magnitudes are continuous, such as the extended substances which appear in space: “in the case of a *continuous magnitude*, the *regression* from the whole to the parts, which are able to be given...[have] *no limit*” [Ak 2:388]. The problem, in other words, is that since every substantial compound we intuit in space is infinitely divisible, and thus consists of an infinite number of parts, one will never be able to completely break down such a compound in a finite amount of time. Indeed, as we have seen, the infinite divisibility of space *entails* that simple substances will never be encountered by sense: if simple substances exist in space, then they are either spatially extended or not; but if they are extended, then they are not genuine simples, since everything extended is something composite; and, if they are not extended, then they must be mathematical points, but that too is impossible since un-extended points could never be combined in a way that would result in something extended. What we have, then, is a conflict between what the mind can coherently represent through the intellect and what can be represented through sense. Kant’s proposal is that this conflict can be resolved as soon as we recognize that the conditions proper to sensory cognition are distinct from those which determine the use of the intellect. In this particular case, Kant’s explanation turns on the fact that the marks which belong to the rational concept of

represent a world in the concrete does not entail that this concept is incoherent, and his explanation as to why this is so turns on the fact that a world is conceived of by means of an abstract concept of composition which comes from the intellect: “Let him who is to extricate himself from this thorny question note that neither the successive nor the simultaneous co-ordination of several things (since both co-ordinations depend on concepts of time) belongs to the concept of a whole which derives from the *understanding* but only to the conditions of *sensitive intuition*. Accordingly, even if these co-ordinations could not be sensitively conceived, they would not, for that reason, cease to belong to the understanding. It is sufficient for this concept that co-ordinates should be given in some way or other, and that they should all be thought as constituting a unity” [Ak 2:392]. As Kant notes, the concept of a whole which *derives from the understanding* is distinct from the kinds of composite wholes represented through sense.

composition are inconsistent with the marks of the wholes represented by sense. Thus, on the one hand, the concept of composition given by the understanding is abstract, and according to this concept, every composite must be made up of simples; on the other hand, the composite wholes represented through sense are all subject to the conditions of time and space, since these are the forms of sensory intuition, and thus cannot be composed of simples. The reason, then, why simple substances cannot be represented through sense is because the mereological structure of time and space is inconsistent with the rational concepts of composition which are conceived of by means of the intellect. But although it is impossible to represent simple substances in the concrete, this does not mean they are incoherent, but only that the entities cognized through the intellect are not subject to the same conditions which govern sensory cognition. Any demonstration which purports to show that simple substances are incoherent will always rest on the assumption that if these substances exist, then they must exist in space; but any such demonstration can be rejected so long as we allow that simple substances exist outside of space, and that these substances may still be coherently represented through pure concepts of the intellect.⁵⁷⁸

As we observed in the introduction to this chapter, Kant maintains that the only cognitions which can be objective are those which are universal and necessary, and that, consequently, any cognitions which are merely contingent must also be subjective. But this, as we noted, appears to be an illegitimate inference, for the fact that some cognition is contingent does not seem to imply that it must also be subjective. Nevertheless, Kant's use of the argument from composition goes some way in resolving this problem, for not only is the argument used to show that space and time are not concepts of the understanding, but also that they cannot apply to things as they are in themselves.⁵⁷⁹ For Kant, the concepts and principles of reason are absolutely necessary and universal, and included among these principles is that every composite must be composed of simples. If the concepts and principles of the intellect conflict with what we observe when we intuit time and space, then either these principles are not universal and necessary, or, space and time cannot be posited absolutely as real beings—if they were, we would then face a conflict between these concepts and the a priori principles given by reason. In contrast to the CPR, in the *Dissertation* Kant endorses a very robust version of epistemological rationalism. Not only is the faculty of reason capable of providing us with a priori

⁵⁷⁸ This is how Kant explains the lack of agreement between the marks belonging to the abstract concept of composition derived from the intellect and the kind of composition we intuit in time and space in Ak 2:415. At the end of “On Directions”, Ak 2:382, Kant notes that the concept of space is a fundamental concept of sensory cognition, and then claims that philosophical difficulties only arise when we try to cognize space through concepts of the understanding.

A reflective reader will not, therefore, dismiss the concept of space, as it is construed by geometers and as it is has also been incorporated into the system of natural science by penetrating philosophers, as a mere figment of the imagination, though the concept is not without its difficulties. Such difficulties reveal themselves when the attempt is made, employing the ideas of reason, to understand the reality of space, which is intuitive enough for inner sense.

⁵⁷⁹ In his letter to Herz from 1772 [Ak 10:133-134] Kant claims that the argument from composition is the very argument in ID which demonstrates that space (and time) are subjective and ideal.

knowledge of things as they are in themselves, Kant goes even further by denying that what we intuit through sense is ultimately real; much like Leibniz, Kant maintains that the only things which can be regarded as ultimately real are those things which are known through reason. Consequently, since the principles of reason are universal and necessary, and space and time conflict with these principles, the only remaining possibility is that space and time, as well as everything represented therein, are not genuinely real, but must instead be nothing more than subjective appearances. And so, it is not simply because time and space are *contingent* beings which explains why they are subjective; more importantly, the reason why time and space cannot apply to things as they are in themselves is because they *conflict* with universal and necessary laws of reason.⁵⁸⁰

⁵⁸⁰ In §5.1, we noted that in the Amphiboly Kant identifies the Identity of Indiscernibles as one of the fundamental principles of reason which apply to things as they are in themselves, and argues that, since this principle does not apply to sensible objects in space, it follows that they must be appearances. Among the other principles of reason which conflict with space, Kant also identifies the principle that everything composite must be made up of simples. As in ID, from this Kant infers that sensible objects cannot be things in themselves since they violate the principles of reason.

The **inner** and the **outer**. In an object of the pure understanding only that is internal that has no relation (as far as the existence is concerned) to anything that is different from it. The inner determinations of a *substantia phaenomenon* in space, on the contrary, are nothing but relations, and it is itself entirely a sum total of mere relations. We know substance in space only through forces that are efficacious in it, whether in drawing others to it (attraction) or in preventing penetration of it (repulsion and impenetrability); we are not acquainted with other properties constituting the concept of substance that appears in space and which we call matter. As object of the pure understanding, on the contrary, every substance must have inner determinations and forces that pertain to its inner reality. Yet what can I think of as inner accidents except for those which my inner sense offers me?—namely that which is either itself **thinking** or which is analogous to one. Thus because we represented them as *noumena*, taking away in thought everything that might signify outer relation, thus even **composition**, Leibniz made out of all substances, even the constituents of matter, simple subjects gifted with powers of representation, in a word, **monads**.

A265-266/B321-322. Cf. A274/B330 & A283-286/B339-342. In his copy of the first edition, Kant makes the following remark about each of the four propositions which he attributes to the Leibnizians: “These propositions obviously teach that space and time hold only of things, and among them also of ourselves, as appearances; for otherwise they would not yield entirely opposed propositions, like those we assert of things in themselves” [Ak 23:37, Refl. CXLVI E 45-A 265]. In other words, the propositions we assert of things in themselves are necessary and universal propositions of reason; but, since many of these are not applicable to space and time, it follows that time and space, as well as everything represented therein, are appearances.

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Dante Dauksz

Department of Philosophy
Syracuse University
541 Hall of Languages
Syracuse, NY 13244

1828 E. Genesee St.
Syracuse, NY 13210
414-467-4945 (cell)
Email: ddauksz@syr.edu

Education

- 2013-2023 Syracuse University, Ph.D Philosophy, 2023
Ph.D. Dissertation: *Space & Time in Kant's Inaugural Dissertation*
Dissertation Committee: Frederick C. Beiser (chair), Karin Nisenbaum (internal), Lorne Falkenstein (external), Paul Guyer (external), Nick Stang (external)
- 2007-2011 University of Toronto, B.A., Specialist in Philosophy with high distinction, spring 2011

Areas of Specialization

Kant, Early Modern Philosophy

Areas of Competence

Logic, Metaphysics

Presentations & Commentaries

- 2017 “Kant & The Impositionist Thesis”, *Eastern Study Group of the North American Kant Society* (ENAKS), George Washington University, D.C., April 29th, 2017.
- “Kant & The Impositionist Thesis”, *Pacific Division of the American Philosophical Association*, Seattle, Washington, April 14th 2017 Comments by Peter Thielke
- 2014 Comments on Kendall Fischer’s “Aquinas and the Subsistence of the Soul”, Syracuse University, ABD Workshop, October 29, 2014.
- “Kant’s Argument for the A-Priority of Space”, Syracuse University Philosophy Working Papers Group, March 8, 2014.
- Comments on Ivan Hu’s “Generic Vagueness”, Syracuse University Graduate Conference, February 28, 2014.

2013 Comments on Andy Specht's "Kant's Argument for the Exclusive Mind-Dependence of Space", Syracuse Philosophy, ABD Workshop, October 28, 2013.

Teaching Experience

2013-Present [As Primary Instructor]

Syracuse University

PHI 311 The Rationalists, 2x
PHI 313 British Empiricism, 2x
PHI 251 Introduction to Symbolic Logic, 14x
PHI 107 Critical Thinking, 11x
PHI 192 Introduction to Moral Theory
PHI 107 Theories of Knowledge and Reality, 2x
PHI 197 Human Nature, 3x

Ithaca College

Introduction to Logic, 2x
Introduction to Philosophy

Le Moyne College

PHI 210 Moral Philosophy

[As Teaching Assistant]

PHI 293 Ethics and the Media Professions
PHI 107 Theories of Knowledge and Reality, 2x
PHI 251 Introduction to Symbolic Logic, 3x
PHI 171 Critical Thinking

[Additional Teaching Experience]

Volunteer Philosophy Instructor for 8th graders, Southside Academy Charter School, Syracuse NY, 2016
PHI 378 Minds and Machines, Guest Lecturer, April 25 & 27, 2016
PHI 313 British Empiricism, Guest Lecturer, March 17 and March 19, 2014
PHI 251 Introduction to Symbolic Logic, April 1, 2014
PHI 171 Critical Thinking, March 10, 2013

Professional & Departmental Service

2016 Philosophy GSO President, 2016-2017

2015 Co-Organizer of the Syracuse Philosophy Working Papers Group,
2015-2016

Graduate Conference External Speaker Co-Coordinator, 2015

Awards & Distinctions

2018 DAAD Study Scholarship
2018 Max Kade Travel Scholarship
2017 Summer Research Grant, Philosophy GSO, Syracuse University
2017 Outstanding Teaching Award, the Graduate School, Syracuse University (an annual award recognizing approximately the top 4% of all graduate student instructors at Syracuse University)
2017 Certificate of University Teaching—Future Professoriate Program, the Graduate School, Syracuse University

Professional Memberships

2016-Present North American Kant Society
American Philosophical Society

Graduate Coursework (*=audited)

2013-2020 Kant's *Critique of Pure Reason* with Frederick Beiser*
German Political Philosophy 1789-1830 with Frederick Beiser*
Spinoza with Frederick Beiser*
Properties with Mark Heller*
Descartes with Kris McDaniel and Kara Richardson
Concepts and Mental Content with Kevan Edwards
A-Priori Knowledge with Andre Gallois
Independent Study on Kant's Transcendental Aesthetic with Frederick Beiser
Modality with Ted Sider & Karen Bennett
Deontic Modals with Jan Dowell
Freewill with Mark Heller
Modal Logic with Tom McKay
Proseminar in the History of Philosophy with Frederick Beiser
Leibniz with Kara Richardson & Kris McDaniel
Schopenhauer with Frederick Beiser
Proseminar in Metaphysics with Andre Gallois & Michael Caie,
Kant's Critique of Pure Reason with Kris McDaniel
Logic and Language with Michael Caie

Moral and Political Philosophy with Hille Paakkunainen

Languages

English & Polish (fluent), German & Latin (reading proficiency)