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C. L. Hardin

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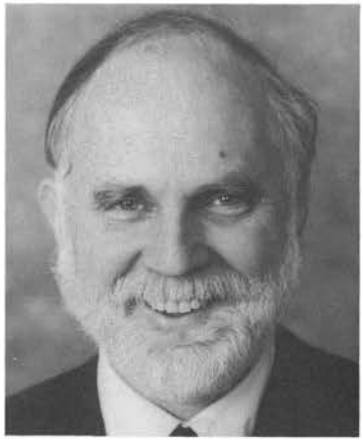
On Curing the Dyslexia of Social Science:

A Response to Robert Wolfson

C. L. Hardin



C.L. Hardin is Associate Professor of Philosophy at Syracuse University. He received his B.A. from Johns Hopkins and his Ph.D. from Princeton. Author of articles on diverse philosophical topics, he is currently interested in the logic of experimental replication.

Next to a good ten-cent cigar, what the world needs is a good theory in social science: perhaps a precise one like classical mechanics, or a very general one like organic evolution, or even a rich and suggestive classification like the periodic table of chemical elements. How shall social scientists occupy their time until the millennium comes? Might they even hasten its arrival? One useful pursuit, Bob Wolfson argues, is to deconfuse the terminology and clean up the concepts. I cannot quarrel with that, for the Augean stables need all of the housekeeping they can get; but I think we should not expect significant theoretical advances through a rigorous formalization of existing theories in a precisely defined lexicon.

The social scientist must not be blamed for looking enviously at the elegant constructions of natural science and for supposing that, if social science is ultimately to be like natural science, it must be as rigorous in statement, with the logical connections from term to term and from sentence to observable fact clearly and unambiguously defined. But the social scientist must beware of engaging in sympathetic magic, imagining that by putting on the glittering mask of natural science he can capture its explanatory power—a hope, as it were, of gilt by association. If we look back at great examples of rigorous formulations of scientific theories—geometry formalized by Euclid and reformalized by Hilbert, or quantum mechanics axiomatized by Von Neumann—we notice that such formalization lies at the end rather than at the beginning of a rich and fruitful period of theory building. Typically, in fact, when a theory is formalized (and by this I do not mean just mathematicized), it is no longer an object of active research. A subject under active development is commonly marked by usefully elastic terminology and sometimes by downright confusion over fundamental concepts. Consider, for example, the seventeenth-century disputes about the proper measure of force (even Newton's statement of the second law uses *force* where we would use *impulse*); or whether it is *quantity of motion* or *living force* that is conserved (we now call the first *linear momentum* and the second *mechanical energy*). Yet mechanics grew rapidly, with terminological clarification proceeding hand in hand with

the mathematical articulation of theory.

There is, however, an important case in which a wholesale reform of terminology occurred at the beginning of the modern development of a science. I have in mind Lavoisier's *Elements of Chemistry*. But even here, the reformulation of vocabulary proceeded in accordance with the fundamental theoretical idea that chemistry must henceforth focus its attention on the conservation of mass. As Lavoisier said, a really satisfying terminology ought to reflect the deeper articulations of the subject. A good theory must, as Plato told us, carve nature at the joints. Premature fixing of vocabulary around the concepts of an immature or superficial theory is likely to have the lasting interest of a meticulous formulation of the possible varieties of phlogiston theories.

I should now like to turn to some more particular difficulties. The first of these concerns how we are to understand Wolfson's *P*5:

> *F-bel-(p)* may be read as *Individuals which have F believe that p*

Wolfson goes on to explain:

> *This sentence scheme is true for a given choice of statement* p *and, say, predicate* G, *just in case the predicate* F *is manifest* [*I take this to mean* nondispositional and observational] *and the fact that an individual satisfies it is accepted by the investigator as a sufficient condition for his believing that* p.
>
> *Suppose the predicate* F *is understood as* genuflects upon entering a Roman Catholic church, *while* p *is the statement,* The pope is the vicar of Christ on earth.
>
> *This is a scheme which serves to define a particular belief (which we usually understand to be a mental state) by associating statements about it with a manifest predicate. That is, in this theoretical language, genuflection upon entering a Roman Catholic church would be seen by the investigator as grounds for saying the individual in question believes the pope is Christ's vicar on earth. In another more complete language there might be several manifest predicates (e.g., in addition to* F, *perhaps* D, dips hand in holy water font upon entering Roman Catholic church; C, carries rosary into church), *any one of which, being satisfied, is taken by the investigator as grounds for saying the belief is held by the subject individual.*

At first we are told that an individual's satisfying *F* is a *sufficient* condition for his believing that *p*. But this cannot, in general, be correct. In the above instance, the individual might be a follower of Ian Paisley wishing to remain incognito, or an enthusiastic Anglican ecumenicist, or an atheist I once heard about who crossed himself once each day, "just in case they're right."

It would be more prudent to take the second reading, that, for example, "genuflection upon entering a Roman Catholic church would be . . . grounds for saying the individual in question believes the pope is Christ's vicar on earth." And so it would, given appropriate background knowledge of the likely *intentions* of the person in question. But this raises three problems for someone who has what I take to be Wolfson's

perspective. The first is that *intention* is not a manifest predicate and, indeed, is supposed to be defined in terms of *P*5. The difficulty is that application of *P*5 seems to presuppose knowledge of either intentions or desires. The second problem is that ascriptions of intention are so context-dependent that it seems very difficult to arrive at laws involving beliefs that will be both precise and general. This casts doubt on the lexicon's ability to contribute to a nomological social science. The third problem is that if no collection of manifest predicates can provide sufficient conditions for individual *x* believing *p*, they cannot properly be used to *define* the expression *x believes that p*. Rather they can, if well chosen, give us only inductive reasons for ascribing a belief in *p* to *x*.

I have a further question concerning the use of *P*5. Earlier we were told:

> *Successful completion of this task* [construction of a formal lexicon] *should allow all formal scientific discourse in the field to be conducted in a lexicon consisting of defined terms and the primitives, plus all of logic and mathematics and other mature sciences, plus the names of individuals (i.e., elementary objects of the field), in place of the natural language.*

The question is this: In what language is *p* in *F-bel-p* to be expressed? If it be a natural language, this aim is thereby foresworn. If it be the artificial language, the lexicon will have to contain expressive resources approaching those of a natural language. In that event, I anxiously await the lexicon's rendering of *Jones believes that God is three persons in one.*

The matter of how the lexicon is to represent serviceable concepts even in its own field is a touchy one, and I am not sure that its authors are fully sensitive to the problems involved. Take, for example, the notion of revolution. We read such sentences as these:

> *If the reorganization takes place without the consent of those whose agreement is required for lawful reorganization, the reorganization is a* revolution. *There are . . . four sorts. . . . If incumbencies and structures of relations change, there is a more sweeping sort of revolution. If these as well as roles change, the revolution is even more substantial. If all these, and goals, change, there is a true* social revolution.

Now *lawful* is a normative notion. It certainly is integral to some uses of *revolution,* but just how does it get into the lexicon? As I survey the primitives, I can find only descriptive notions. Among philosophers there has been a long-standing presumption against the acceptability of arguments whose premises consist only of statements about what *is* the case but whose conclusion states what *ought to be* the case. Similarly, there is a presumption against the claim that a normative concept can be defined adequately by means of descriptive concepts alone. The presumption can, perhaps, be defeated; but we need an argument to do so, and none is in view.

Oddly enough, the concept of social revolution is linked to the concept of lawfulness in the passage I have just quoted. Yet it seems plain enough that *social revolution* has been repeatedly applied to large changes in organization that have occurred without substantial violation of the law, although with considerable perturbation in people's habits. It thus appears that *revolution* was construed too narrowly from the beginning.

An examination of the *Oxford English Dictionary* tells us that revolution, in a relevant nonpolitical sense, is "an instance of great change or alteration in affairs or in some particular thing"; annoyingly vague, that—if one wants to take *revolution* as a term of science. For how extensive must a change be in order to be a *great* change? A bad term for a science-to-be, perhaps. (Geology, however, manages to limp along without an exact distinction between hills and mountains. But then, nobody cares about formalized geology. Does that cast doubt on its status as a science?) We could, of course, *legislate* the scope of *great* in this case and thus establish precise boundaries for *revolution*. On the other hand, why should we? As things stand, it is a distinct advantage to keep the term vague so we can slot it in differently in different circumstances. It may make a poor term for social science but a nice one for social studies.

I could be quite wrong, of course. Perhaps *revolution* could, with a bit of trimming, become a prime lexical item for the World's First Real Social Theory. But for now, I'd rather you asked me about the good ten-cent cigar.