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Bicycle Space and the American Urban Landscape: Re-thinking Distance and Mobility in the City

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Abstract

Since its arrival in the United States, the bicycle's place in public space has influenced, and been influenced by not only road improvements and infrastructure investments but also by the social production of what it *means* to be *mobile* and to circulate throughout the city. Drawing upon the theory of "Time-Space Compression" posited by the geographer David Harvey, I propose that the bicycle *can* compress time and space in urban environments where time-space compression is occurring for motorists and their automobiles. But yet, bicycles (and their riders) have been consistently and systematically excluded from the American urban landscape; keeping them a part of this landscape has been a continuous and necessary battle. This thesis argues that the quest for an inclusive bicycle landscape requires the re-thinking of distance by activists, planners, the producers of popular culture and society at large.

Table of Contents

LIST OF FIGURES

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CHAPTER ONE

THE BICYCLE AND THE PROBLEM OF TIME-SPACE COMPRESSION

1.1 INTRODUCTION

Many Americans have ridden a bicycle at some point in their lives. And yet, the bicycle is not part of either the daily personal geographies of urban dwellers or the urban landscape. Bicycle space – those places where bicycles can safely be ridden and stored – has been socially and physically marginalized, if not excluded from the urban landscape that paradoxically strives to eliminate barriers and reduce the friction of distance for automobiles and pedestrians. The friction that a bicyclist confronts spans beyond infrastructure into the cultural construction of space – popular culture is an important indicator of the success and failures of this integration. Since the arrival of the bicycle in America, its place in public space has been built and fought over through road improvements, infrastructure investments and the social production of what it *means* to be *mobile* and to circulate throughout the city. The bicycle *can* compress time and space in urban environments in ways that the car cannot. But yet, there has been a continuous and necessary fight to incorporate bicycles into the American urban landscape that has systematically excluded cyclists. It has required the re-thinking of distance and what it means to be mobile in the city.

The theory of "time-space compression" posited by the geographer David Harvey (1990), however, has generally been envisioned on the interurban scale. Interstate highways were designed to connect cities and float above a chaotic landscape with elevated, limited-access urban highways, allowing the automobile

to compress time and space between the places by literally decreasing the amount of time it takes to cover a mile. In other words, while the absolute location between places (measured in feet or miles) does not change, their relative location (measured in real or perceived time as well as energy) does; with faster modes of transportation, the relative locations of particular places move closer to one another thus giving rise to a popular notion that the world is shrinking. This is the essence of time-space compression.

Capitalisms' quest to speed up life, overcome physical and social barriers to mobility and capital, and reduce or eliminate perceived sources of friction of distance, has been the over-arching push toward the universal promotion of time-space compression. The spatial argument of time-space compression affects more than just interurban/interstate relations. By impacting *intra*urban mobility in ways that directly influence the current (and future) place of the bicycle within space and culture, the spatial argument of time-space compression is more than just an interurban/interstate relationship.

Although the bicycle cannot effectively overcome long distances like motor vehicles, it can be competitive within the urban scale. The mobilized liberty that it creates is not dependant on any other input (livestock, steam, gasoline) other than its rider. Bicycling in the city can shorten travel time, essentially compressing time and space (at a different scale than cars on highways), making the bicycle an excellent alternative to the automobile and pedestrian lifestyles inside the city. Bicycles can successfully and efficiently navigate a city, but without the physical, social and psychological spaces where it is safe to ride, few

cyclists are willing to do so. Only recently has the bicycle been seriously reconsidered as part of the urban transportation fabric.

The continuing problematic of the urban cyclist stems in part from the bicycle's dependence on the political and social valuation of time and the cultural perception of space and distance. These variables have been etched into every aspect of the landscape: historically, in pop-culture, and in the physical and social reproduction of urban space.

Bicycling has had to confront the issue of time-space compression both physically and culturally. Frequently, the processes that produce and reproduce bicycle space have been categorized into two over lapping binaries: 1) bicycles versus automobiles, and 2) radical cycling versus conservative (recreational) cycling. At one end of the spectrum, planners (who privilege autos and tend to enact relatively conservative solutions to urban transportation problems – partially because of poor funding) have designed the built landscape, creating a top-down design for bicycle space that frequently relegates bicycles to recreational riding on converted railway beds (the "Rails to Trails" movement). Although these are relatively conservative efforts in that they do not require substantial modification of the urban fabric and have not prompted a massive shift in the transportation choices that most American make, they have been successful in attracting new and retaining bicycle enthusiasts—especially families with young children. At the other end of the spectrum, are more radical cultural movements that seek to create bicycle space or at least to take a chunk of automobile space back for their use. The bicycle thus has to transcend competing ideologies that have reduced it

to being, on the one hand, a child's toy or a piece of recreational equipment, or, on the other hand, that have made it into a tool for renegade radicals (radical being interpreted in numerous ways); for example, thousands of slow-riding cyclist convene (in)formally during a rush hour once a month as part of Critical Mass[1] demonstrations that simultaneously claim road space and create a bicycle-oriented community from the grassroots.

In between these competing radical and conservative ideologies are people who ascribe to neither extreme, but yet continue cycling and constitute a separate category of biketivism[2] – the daily cyclist. All of these biketivist movements physically weave themselves into the larger urban transportation landscape, amidst the apparently intractable American obsession with the automobile.

At least for the foreseeable future, the American adoration of automobiles will not fade. Culturally, the car has become intrinsic to the attainment of the "American Dream," the symbol for which is the nice new internal-combustion vehicle parked in the driveway of an owner-occupied single-family home in the suburbs. Public policy toward infrastructure development has only encouraged this scenario, including the expansion and sprawl of an auto-exclusive transportation landscape where—at the urban periphery and in the countryside—Americans think of distance mainly in terms of the equation of one-minute equals

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[1] Critical Mass is a monthly bicycle demonstration, originating in San Francisco that unites bicyclists to occupy city streets and claim the space as their own. It is based on the premise that the more bicyclists there are on a day-to-day basis, the safe the ride.

[2] Biketivism is a term used by Zack Furness (2005) to describe bicycle activism. It is a "contemporary form of social activism that politicizes the bicycle as a powerful weapon against the homogenizing impetus of the automobile industry and 'car-culture'" (401). Furness breaks it down into five groups: 1. Direct action groups 2. Anti-automobile/public space-oriented organizations 3. Community bicycle collectives 4. Various forms of bicycle-oriented media 5. Individuals who make a conscious decision to ride a bike rather than drive a car (2005, 402).

one-mile. On the local urban scale, however, the automobile looses its competitive edge, when one considers the hassles associated with traffic jams and parking shortages. Here, bicycles and other alternatives modes of mobility and circulation offer advantages that transcend the temporal concerns that automobilists face. Still, basic components of the natural landscape—like topography, climate, and seasonality—along with cultural beliefs that link bicycles to the human body and the social order in certain (largely negative) ways, nevertheless restrict universal implementations of bicycle plans.

Making a case for the bicycle, the social interactions it promotes, as well as the physical infrastructure it needs, is nevertheless possible. American cities like Portland, Oregon have been singled out for their bicycle infrastructure advancements – so too has San Francisco been recognized for its cycling activism. Furthermore, the United States can learn valuable lessons from European bicycle models and policy. But none of these examples provide a generic model that can easily be applied to all American cities, due to profound differences in urban site, situation and culture as well as to a uniquely American idea of mobility, circulation and sustainability that places a high premium on time-space compression and the expected experienced it creates. European models for bicycle mobility are particularly difficult to apply, given that urban form and urban life in the United States reflect unique demands for democratic rights to the city as well as the capitalist tendencies to privatize open space. Different actors and historical variables influence how existing spaces will continue to be transformed to potentially construct, popularize and

psychologically including bicycles. The social processes that have created bicycle space up to this point are multifaceted, lately fostering unexpected synergies between seemingly opposing interests groups within biketivism.

The relation of the bicycle to the perception of time-space compression in the American transportation landscape is full of complex commitments and contingences that have been physically, politically, socially, and culturally etched into the landscape. To confront this problematic, for this thesis I raise two major sets of questions:

1. Throughout history, how has temporality and perception of scale physically impacted bicycle space in America? How have time and space been variably compressed in the urban context of transportation? How have bicycle innovations and policy development allowed a continued, although marginalized, presence of the bicycle in the urban landscape?
2. How has friction of distance and time-space compression been socially constructed and transformed by community engagement and reified by popular culture? How has it, and will continue to, change the nature of bicycle and social spaces.

In this study I will show the evolution of bicycle space in relation to the perception and valuation of time-space compression/expansion and friction of distance. First, I will examine what time-space compression is in relation to transportation and bicycles. Second, I will show how these concepts have affected bicycle innovations, development and urban infrastructure policy. Third,

I will present society and culture's role in the reproduction of bicycle space as legitimate. Popular culture is an important component of the psychological and social landscape of bicycles because of the ways the actors use and construct space – film, in particular, is a quintessential compression of time and space as it condenses the experience into 90-120 minutes onto the film screen. The success of the bicycle in America depends on how these questions of temporality, place and society interact – supporting society and producing space. Re-thinking distance, mobility, and time-space compression within the city is the first step towards creating American urban bicycle space.

Bicycle theory has recently experienced a renaissance of interest. Increasingly, more literature has emerged onto the scene – academically and socially – primarily dealing with infrastructure or counter-cultural aspects. My argument that bicycles efficiently compress time and space both physically and psychologically but it is dependent on the in the urban setting builds upon both arguments for infrastructure and for activism. The construction of temporality is important to both infrastructure and cultural concerns.

My personal involvement with the bicycle has been on both of these levels: infrastructure and culture. I rediscovered cycling while living on Cape Cod next to the Cape Cod Rail Trail. Riding my bike to work each day required less time than driving, even if I was dropped off and did not have to park the car – not to mention that riding made me healthier, happier, and less dependent on gasoline. Although Cape Cod is by no means an urban environment, the Rail Trail experience and my eventual excursions off of it did make me into a confident

cyclist. When I later moved to Strasbourg, France, I became part of a larger constituency of urban bicycle riders – I was not alone in wearing dresses while riding around town. Now living in Syracuse, New York, I consider myself a biketivist – not only for my participation in promoting bicycle infrastructure improvements in Syracuse and for my choice to cycle and not drive, but also because many friends and acquaintances have taken up cycling to campus and have joined me in psychogeographic experiments that we call "Synchronized Night Bike Riding" during which we share our passion for riding bicycles in urban spaces. Based on this personal history, I have come to believe that more people need to experience the bicycle's ability to compress time and space in the city and more bicycle space should be included in the urban transportation environment.

1.2 PERCEIVING TIME-SPACE COMPRESSION/EXPANSION

> "The objectivity of time and space is given in each case by the material practices of social reproduction, and to the degree that these latter vary geographically and historically, so we find that social time and social space are differentially constructed" (Harvey 1990, 204).

American sensitivity to temporality is inescapably linked with the perception of scale and distance of travel. These relations have valorized the connection of time to capital. Travel time has become an economic liability and the transportation choices individuals make daily represent this valorization. The preference of certain transportation over another is usually based in this *perception* of efficiency. This has caused bicycle use to be contingent on the social experience of time and distance—an experience that is typically motorized

in the quest to compress time and space by reducing friction and number of barriers over a given distance.

Harvey's (1990) theory of time-space compression is intrinsically linked to capitalism and technological advancements, "The history of capitalism has been characterized by speed-up in the pace of life, while so overcoming spatial barriers that the world sometimes seems to collapse inwards upon us" (1990, 240). In many respects we have already learned how to cope with the "*compression* of our spatial and temporal worlds" (Harvey 1990, 240) because it has become normality. As soon as time-space compression ceases to exert its power, however, the physical and social barriers that an individual encounters within cities create an overwhelming experience of *time-space expansion*. As the automobile enters the city, efficiency is rapidly decreased. Harvey suggests that this is result of capitalist modernization, which has accelerated social life but has also created its own obstacles. Cars—while offering freedom at the inter-urban and periurban scales, become their own obstacles upon entry into dense urban areas as they create preventable congestion and traffic.

Hägerstrand's basic theory of the geographic of time brings individuals into the position of "purposeful agents engaged in projects that take up time through movement in space" (Harvey 1990, 211). It is human action that adds value to space and determines what will be planned "in the name of progress." Time-space compression created by cars has come to symbolize social and economic progress – an image embraced by planners like Robert Moses who conquered New York City on behalf of the personal automobile in the middle of

the 20th century. Moses' vision of progress epitomized the push towards time-space compression as "the conquest of space, the tearing down of all spatial barriers, and the ultimate "annihilation of space through time." The reduction of space to a contingent category is implied in the notion of progress itself" (Harvey 1990, 205). Moses' and President Eisenhower's support of highways and interstates pushed the American public to think about travel and efficiency primarily on the scale of long distance motor trips – creating an obsession with the ephemeral speed of the automobile.

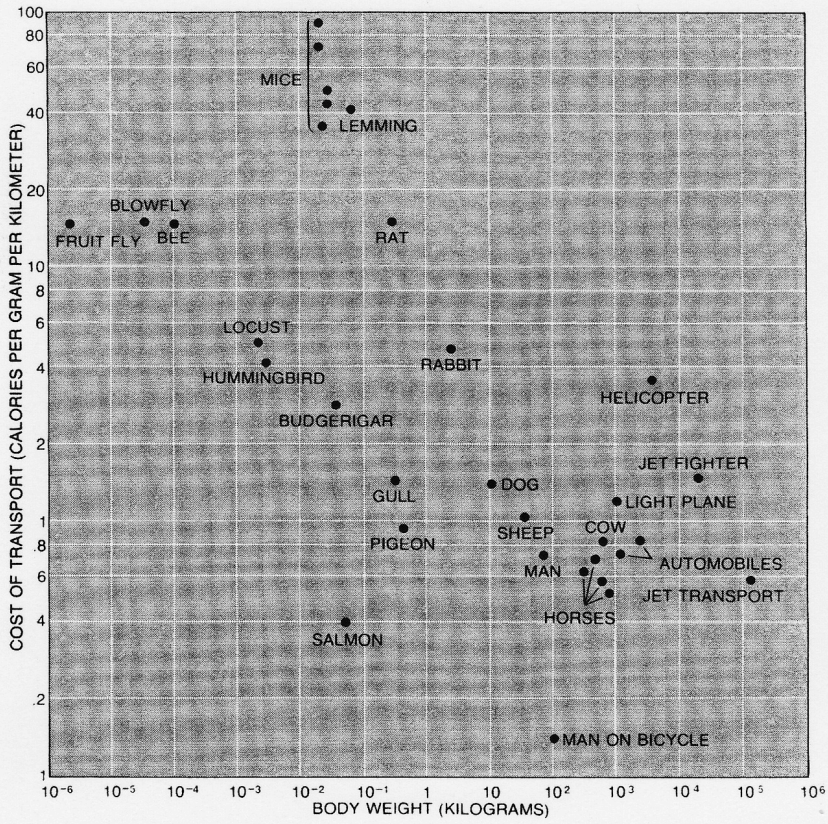
In a car, a driver has an unrealistic perception of distance because of this variable speed. American "car society" has intensified this perception of distance and has caused a change in time-space valuation. Rather than being measured in miles, distance is measured in minutes. The resulting "mile a minute" mentality has been built by the automobile and superhighways, situations where the equation is generally accurate. The problem is that this mentality—and the interstate highway infrastructure upon which it is based— promotes a lifestyle that has negatively affected environmental and social sustainability. The creation of limited-access auto-orientated landscapes re-designed urban space in such a way as to make it only *nominally public*, with "public" being defined as those urban residents who could afford to own and operate cars. It excluded the auto-less public – including bicyclists – from the most linear paths cut across the city. The problem worsens as the auto-only culture bleeds onto the normal city streets, intimidating and eliminating *places to be* for the pedestrian and cyclist – eliminating their right to be mobile.

While interurban connections benefit from this "annihilation of space," it is ineffective upon entry into urban space. Manifested by the reduction of long-distance travel and communication, Harvey's time-space compression does not address *intra*urban mobility. At level of the street "annihilation of space through time" (Harvey 1990) fails and barriers seem to spontaneously appear. The subsequent time-space *expansion* has simultaneously created a greater disconnect, making the world larger for some people (Gregory 2006, 17) even if an increasing majority have become more interconnected by the internet and capitalist ventures, *and* expanded the amount of time that the hegemonic force takes to traverse urban distances. The mobility of some inhibits, or alters, the mobility of others while the dominant force unintentionally reduces their own mobility.

Given that many spatial experiences have been compressed by time, a greater disconnection is now perceived between spaces when compression is impossible or breaks down due to infrastructure failure or traffic slowdown. Time-space expansion, in many regards, could be perceived as a displacement of the barriers that have been removed by compression – often being imposed on isolated rural communities but also on inner cities. Personal automobility becomes inefficient and its economic and social legitimacy questionable. But because more time is required for the automobile to cross a smaller distance, and the mile-a-minute mentality is not removed, the perception of this distance is irrationally augmented; that a distance of 3 miles is perceived as one of 20 miles because of the 20 minutes it takes to get there in the automobile.

The bicycle, however, reacts differently to the urban geographies that have been *expanded* in the eyes of the driver. On flat terrain, this distance of 3 miles can be feasibly biked in 20 minutes – without the unnecessary energy input of automobiles, and without the hassle or cost of parking. While the bicycle cannot compress urban time and space to the same intensity that an automobile on the highway can, it is energy efficient in terms of input and outputs as shown in SS Wilson's (1973, 90) diagram from his article featured in *Scientific American,* "Bicycle Technology." It does not have the economic friction that fossil fuel motors are burdened with. As the world moves into the so-called "post peak-oil" phase, it will be necessary to reduce petroleum-fueled travel and to rethink the infrastructural choices that were made during the automobile era. Barriers to cars, such as decreased city street speed, allow the city to function and enable the bicycle to be competitive in the greater transportation scheme. Unfortunately, bicycles have been historically and systematically excluded from the city as a continued effort to reduce barriers to motorists prevails. Pushing elevated highways through the center of town and creating wide boulevards through the city that promote heavy automobile traffic without allowing space for a bicycle to *be* has continued to be practiced. S.S. Wilson's data does not include the variable of the roadbed and necessary infrastructure to facilitate efficient energy use, but it does emphasize the potential of the bicycle and the reason for its inclusion.

FIGURE A



MAN ON A BICYCLE ranks first in efficiency among traveling animals and machines in terms of energy consumed in moving a certain distance as a function of body weight. The rate of energy consumption for a bicyclist (about .15 calorie per gram per kilometer) is approximately a fifth of that for an unaided walking man (about .75 calorie per gram per kilometer). With the exception of the black point representing the bicyclist (*lower right*), this graph is based on data originally compiled by Vance A. Tucker of Duke University.

(Wilson, S.S. 1973, 90).

Including the bicycle as part of transportation has meant allotting paved areas of roads or paths for cyclists to be. "Retrofitting the road" (Merlo 2008) to include the bicycle can be viewed by those who are wed to the present transportation system as a hostile act toward the automobile - ignoring the fact a motorist is more likely to serious injure a cyclist than the reverse scenario. Far more common are barriers to the bicycle, which include perceived and actual safeties that have been etched into the landscape, psychologically excluding large portions of the population. The bicycle has thus undergone innovations to evolve

into a physically competitive transportation mode, but it has not gained rights to the same amount of space as its competitors –necessary space for creation and support of a bicycle demographic.

CHAPTER TWO

EVOLUTION OF THE BICYCLE: A MECHANISM FOR TIME-SPACE COMPRESSION

The evolution of the bicycle and the space that it occupies has allowed it to become and remain a mechanism for time-space compression. Physically evolving for safety, comfort and practicality, bicycle innovations positively affected the technology that brought the modern motor vehicle, which is, in many respects, the arch nemesis, but not antithesis, of the bicycle – which is also classified as a vehicle. From the invention of the bicycle to the environmental legislation that funds infrastructure investment and research, as the bicycle has evolved, so have the complexities that define its space.

2.1 BICYCLE MOBILITY AND FRICTION: SOURCES AND SOLUTIONS

The invention and innovation of the bicycle has been dependent not only on technological advancements but also on the very road and infrastructure policy that contributed to the (non)existence of bicycle space in America. In the 1700s, people were looking for new types mobility to replace the horse and carriage. As a "human powered" and "self-moving" vehicle, the bicycle would shed society of its dependence on horses, which were prone to disease and early death (Carson 1977). Moreover, it would offer possible liberation from wind, steam and gasoline power (Carson 1977; Mc Shane 1994; Herlihy 2004) as a bicycle was "run on that most abundant and accessible of all resources: willpower" (Herlihy

2004, 15). Unfortunately, this same willpower would pave the way for the sprawl induced automobile infatuation of the future, across the nation.

The earliest bicycles emerged in France. These early cycles where not meant for serious utilitarian use, but rather were a novelty item of leisure for the wealthy, intended mainly for racing. The "Wooden horse" or the *célérifère* first appeared in 1791 in the gardens of Paris' Palais Royal and evolved into the *velocipede* (a precursor to the modern bicycle). Early organized racing of the velocipede began in 1793 with Parisian bicycle clubs along the Champs Elysées (Oliver & Berkebile 1974, 1).[3] During the early 19th century bicycle designers made significant improvements to create and improved steering, which was non-existent in the earliest models (Gaboriau 1991).

In general, bicycle technology was exclusive, and only completely did it experience a "transition from a rich man's toy to a poor man's carriage" (Herlihy 2004, 7) in the early part of the twentieth century. In 1819, the first US patent for the velocipede was granted, permitting further technological evolution on both sides of the Atlantic (Oliver & Berkebile 1974, 3). Although the bicycle did not stay fashionable, it did remain in use and part of the urban landscape. Slowly bicycles transitioned out of a curiosity found in use in the American dance hall (where they were first made popular because of the smooth ride) onto the bumpy roadways of the nation where they would encounter friction on multiple levels (Mc Shane 1994, 54).

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[3] The world-renowned *Tour de France* began in 1903.

Since the greatest use of bicycles was amongst adults, in the late 1800s their political power helped facilitate the early Good Roads Movement, a transportation reform movement that originally emerged with the bicycle in mind (Oliver & Berkebile 1974, 1). Road paving physically would reduce friction and would allow bicyclists to glide on a smooth surface without being shaken as before. But in the end, the Good Roads Movement became an environment-altering and social initiative that not only facilitated new speeds of travel, but also that led to psychological readjustment as well as to pollution. The effect of paved roads drastically changed transportation in the western psyche. It changed the notion of what it meant to be mobile, where to be mobile, as well as who could be independently mobile and the scale of distances they could travel. Nevertheless, at least during the early years of this movement, the bicycle played to the tenets of democracy and questioned the existing division of space by occupying both pedestrian and automobilist's spaces. The bicycle could ride over the natural environment, but it also desired new infrastructure to facilitate circulation by eliminating bumps and barriers.

Without paved streets, bicycle use would have remained stagnant or flat-out declined. But unfortunately, this road infrastructure of convenience and comfort for the bicyclist contributed to the automobilist domination of the landscape. It became a physical, and social, battle of which modality could traverse urban space the most efficiently. Systematically bicycle repair shops, an important component of the social support system, were transformed into gasoline stations (Herlihy 2004, 5). This small part of the transition to the automobile

culture decreased the social viability of the bicycle. By reducing the support, and thus potential, for longer journeys, these changes have made the public dependant on primarily environmentally unsustainable transport options.

The cyclist's basic right to occupy spaces designed for physical mobility has been constantly contested in government and society. Outlawed the street as well as the sidewalk, bicycle space became literally pushed into the gutter, as if it was a waste product of the city. The number of cyclists greatly decreased when bicycles were prohibited from the smooth sidewalks onto the unpaved, uncomfortable main streets where bicycles acquired the nickname "boneshakers" (Oliver & Berkebile 1974, 7). As roads improved there was further political contestation of bicycles' use of space:

> [Starting in 1878] Boston, New York, Newport, Brooklyn, Hartford, Chicago, Buffalo, and Washington all banned bikes for short periods of time. … [local League of American Wheelmen] chapters lobbied successfully to have common councils repeal the bans. Buffalo lifted its ban in 1885, the last major city to do so. These reversals came primarily in the political, not in the legal arena. They did not challenge the abstract right of cities to prohibit certain classes of traffic such as steamers or too heavy wagons, from their streets.
> (Mc Shane 1994, 116).

Although legalized for street travel, bicycle remained marginalized in most American cities especially in the automobile boom era caused the mass of cars like the Ford Model-T flooding the market, popular culture and society.

How planning was viewed in the 1920s onward, reflected the arrival of the automobile. General urban plans included widening city streets and sidewalks to account for motor vehicles and the people that they would be bringing into the city, part of an emerging social movement aimed toward ordering and cleaning up

the urban landscape (Isenberg, 2004). Cities were being marketed with a new sleek appearance. No longer were telephone and electricity poles desired; in fact, visual representations of cities (photographs, postcards, drawings and paintings) were often doctored or composed to eliminate them at least in the imagination, even if they still existed in real life. Often times these same representations made streets appear smoother. Gradually, as the population began to notice these images, the question was raised as to why this imaginary ordering of the city could not be made into a reality. Thus one of the first objectives toward bringing the city into line with the imagery that had been created for it was street paving. Reducing the amount of dust in the air would have a significant effect on the cleanliness of the city. In addition to comfortably moving vehicles, simply put, paved roads would also be easier to clean and keep clean.

The quality of road and sidewalk surfaces thus made the city attractive for business and customers (Isenberg 2004, 54). Between 1870 and 1900 concrete and asphalt paved their way across the city, and in later years, onto the interstate system (Mc Shane 1994, 57). Women were known to partake in the oiling of streets and the filling of mud holes when men refused to act (Isenberg 2004,24). The pavement was simultaneously bonding the city together and creating barriers of exclusion: “Most residents probably felt, as Lewis Mumford has noted, that pavements were for the rich and their horses, not for the average citizen” (Mc Shane 1994, 64). Even with large sidewalks, “sidewalk obstacles” began to infringe upon the desired flow patterns envisioned by planners and women’s groups (Isenberg 2004, 58).

Within this, bicycles were starting to be considered as obstacles, partially because the requirement of parking and their movement was unpredictable (Mc Shane 1994, 117). To return to Harvey's idea of time-space compression, this implies that bicycles were indeed mobility barriers (for the motor vehicle and pedestrian). In the downtown area, sidewalk space was in the process of being designated place for the American consumer. It is important to emphasize this commercial draw and image of the city. Planners argued that the bicycle racks that typically occupied sidewalk space limited the visibility and grandeur of this space for capitalism – and that the cyclist was not the capitalist they sought to attract.

Drastically different needs and opinions about traffic planning prevailed in the residential areas of the city. Here, however, the public still contested the influx of bicycles—lumping them into a category that included motor vehicle traffic, because they disturbed daily life. Whereas planners and town councils advocated for road paving in the central business district as a means of increasing property value, in the residential areas paving was sometimes viewed differently as it might erode their quality of life. Petitions protesting asphalt paving, which greatly increase the speed and quantity of traffic, were not uncommon:

> [Asphalt] … will reduce the value of property from twenty-five to thirty-five per cent on its present market value. We also protest because it will make _____ a thoroughfare from _____ to _____ for carts and vehicles of all kinds, including bicycles…, and the resulting noise will be so intolerable that it will make the street undesirable for private residences. The lives of our children would be in constant danger from reckless riders and drivers, if this private street is to be made a thoroughfare. We would prefer the privacy of the street as a residential street,

> and for the safety of our children who would not be menaced by the additional travel of bicycles and other vehicles.
> (Petition to Nilson P. Lewis, planner, cited in Mc Shane 1994, 80)

Nevertheless, often bicycle interest groups succeeded in creating street policy to improve the quality of cycling much to the dismay of local neighborhood residents (Mc Shane 1994, 57).

As traffic increased, the city streets began to lose this character. The push for independent mobility became counter-intuitive to city planning initiatives to create society. Automobile traffic had caused many downtowns to become inconvenient places to meet socially and even to conduct business, for pedestrians, cyclists, as well as motorists. Robert Moses (1956), nevertheless, pushed for highways and interstates to enter cities:

> Cities must not be forgotten or neglected in our national highway planning. The strategic, military and evacuation aspects of arterial construction are vital in cities… The needs of cities must not be minimized because they require relatively little mileage. This is strategic mileage of vital importance to both interstate and urban systems. It is the hardest to locate, the most difficult to clear, the most expensive to acquire and build and the most controversial from the point of view of selfish and shortsighted opposition" (204-5).

Thus planning for automobiles thus destroyed accessibility and desirability of discovering a city on foot or by bicycle. The cyclist was 'planned-out' of the city, or purely forgotten.

As the social nature of roads was being transformed, as Clay Mc Shane states, "The new suburbanites depended on streets for transportation only. Since their detached lot homes had porches and yards, they lost sight of the older functions of streets as places for recreation and social gatherings" (1994, 57). Iain

Boal argues that what was taking place here was a re-orientation in the perception of streets that made them into *roads* (2008). This is extremely important because the definition of the space determines the processes that are performed. The street allowed for play and community whereas the road became viewed as an uninhabitable place of danger. Following this change, urban street space became a place that was no longer bikeable by all ages – danger became the primary and lasting sources of friction of distance for the bicycle.

The problem is that cycling (and walking) in America *is* extremely dangerous. This is without a doubt one of the primary inhibitors of potential cyclists. Pucher &Dijkstra raise this concern in their essay "Making Walking and Cycling Safer: Lessons from Europe," arguing that "on a per trip basis, walking and cycling [in the United States] are roughly three times as dangerous as riding in a car" (2000, 6). Rather than investing in safer streets for pedestrians and cyclists, the United States government has made no concerted effort to drastically change the built environment to make it usable by *all* citizens. While the U.S. can learn from Northern European bicycle infrastructure and culture, it still needs to create its own bicycle culture that is specific to the both American geography and culture. In part, the problem has been one of funding—it simply has not been available to create a proper infrastructure that is necessary to create a both physically and psychologically perceived "safe bicycle space" (Pucher & Dijkstra 2000). While it can be argued that the investment in arterial urban highways has been aimed at getting cars off the smaller streets to make them safer, this same investment simultaneously increased the number of cars on all streets creating a

hazardous environment for all (Leavitt 1970). Bicycles do not function without the power of the cyclist, but this power is not only created with pedal power, it is created by a sense of security and accessibility to bikeable spaces.

Accessibility is a key factor that is manipulated by socio-political relations to create geographies of exclusion and inclusion for both water and transport networks. David Harvey explores this issue in *Social Justice and the City*. According to Harvey, there is a "social price [that] people are forced to pay for access to certain facilities … which can vary from the simple direct cost involved in transport to the emotional and psychological price imposed upon an individual who has an intense resistance to doing something" (Harvey 1973, 57). This causes "price of accessibility" and the "cost of proximity" to be visibly etch into the transportation landscape (Harvey 1973, 57). In the case of water, proximity and accessibility are controlled by "the mechanisms of exclusion from and access to *unlimited* quantities of potable water [that] were cemented into the water engineering system itself and remain like this until this very day" (Swyngedouw 2004, 35). Unlimited access to transportation is equally exclusive.

At the same time that the bicycle is conquering natural barriers, human-made barriers are constantly being created. Often they have taken forms that significantly limit personal mobility of the greater population. Although America is considered an industrialized country, *unlimited* accessibility to transportation, like water, is frequently unavailable to the poorer demographic. Many smaller cities cannot afford the investment in public transportation and they lack the social support that would result in a larger body of cyclists. In many contexts,

unlimited transportation takes the form of either a 24- hour unlimited metro card (as in New York City) or, more frequently, access to personal automobiles. While a bicycle is accessible at all hours and it is potentially unlimited (depending on the cyclist's capability and disposition), rarely has it been socially included as a possibility for personal travel. This is in part a result of the critical place the automobile holds in the achievement of the American Dream and the American marketing of circulation and mobility that has ironically made the nation inaccessible even to the automobilist.

Bicycle mobility has many obstacles to surmount. Like the automobile, the bicycle has natural existing barriers in the landscape to overcome, such as climate elevation, and natural waterways, which make it difficult to develop new infrastructure for both modalities. Seasonality creates an undesirable environment for cycling during several months of the year, preventing year-round bicycle travel by the masses. Without infrastructure such as showers and changing rooms at work, this physical barrier becomes a social barrier that is difficult to overcome. Cities like Portland, Oregon, with more coastal climates, have the benefit of reasonably good weather as well as a supportive community that has caused their bicycle network to thrive. Conversely, Syracuse, New York, in Lake Ontario's snow belt, is pummeled with significant winter precipitation, cold winds, and salted roadways. Combined, these factors quickly destroy bicycles and decrease the desirability of bicycle mobility. Here, a comparison to motorcycles is important; they suffer from the same problem of seasonality—but yet, they have been embraced as the "quintessential cool." Instead of driving the sports car

or riding a motorcycle to work in good weather, why is it that people will not take a bicycle instead? This question raises the issue of "when to be bicycle-mobile,"—and issue that is only partly contingent on the site of the city. I argue, however, that when to be bicycle mobile is largely a question of choice, and brings into question both the cultural indoctrination of "how to be mobile" as well as the social acceptability of certain types mobility.

Many would consider it the government's social obligation to combat discriminatory trends against pedestrians and cyclists. But theoretical good intentions, or the lust for power, drove planners in the 1950s and 60s to demolish neighborhoods that housed pedestrians in the name of the transportation efficiency, namely the automobile. Robert Moses' shoreline parks projects exhibited how political and economic power could be used to manipulate the temporal experience of space, making both the space *and* experience a commodity. David Harvey references this commodification of time and space as a constant exchange, in that "money can be used to command time (our own or that of others) and space. Conversely, command of time and space can be converted back into command over money" (1990, 226). While Moses was integral to the spread of interstates and major bridges, he actually had not pioneered the idea of streamlined traffic in America. Interestingly, this idea has more of its roots in the work of the great park maker, Frederick Law Olmsted, Sr., who developed in the late nineteenth century the notion of the parkway as a transportation solution for the suburban area in America (Mc Shane 1994, 35). Through creating a strip of city owned park bordering the street, access to the street was designed only for

use by the suburban elite – who would only use the bicycle recreationally (*ibid.*). The parkway was designed to facilitate social intercourse through creating a place of recreation for the middle- and upper class members of society (*ibid*.).

One of the beauties of bicycles is that they traverse class and gender boundaries that have been strengthened by other forms of transportation.

> The bicycle gave working class, individuals new access to people and places, and ultimately, new methods for political mobilization. Given the vast geography of the United States, the effects of the bicycle were especially strong, since it was arguably the first time that non-elites had the ability to utilize personal forms of transportation technology in their daily lives (Furness 2005, 404).

The development of bicycles has taken this into account since the early years with such advents as the "low-mount bicycle [that] encouraged an increasingly sedentary population, including housebound women, to exercise outdoors," which David Herlihy points out in *Bicycles: The History* (2004, 3). Physical mobility is often a key point in creating social and political mobility and activism for minority and women's groups. Affluent women used bicycles as a tool to gain independence at the turn of the century, but only recently have bicycles become affordably to all classes with a large number of used bicycles available. Used bicycles do not merely present a more economical way to access mobility at a personal scale, it also promotes recycling of goods that are still functioning efficiently. While automobiles quickly become out dated and the technology improving their emissions is constantly changing, bicycles can last decades with potentially minimal repair. Socially and physically sustainable they offer economic sustainability with longer use spans and limited depreciation. In a society where time has been commoditized, a "slow moving vehicle" is perceived

as uncompetitive or inefficient, the social processes to combine the bicycle with the image of success has transformed the landscape.

In *The Death and Life of Great American Cities* Jane Jacobs argues, "Good transportation and communication are not only among the most difficult things to achieve; they are also basic necessities" (1993 [1961], 442). Jacobs' argument proposes a pedestrian based city, combating automobile domination. The pedestrian's view of space is often the symbol of the city, but the car has dominated both culture and space – reducing the social value of public spaces of motion and differently constructing the processes that push time-space compression. Moses imagined viewing the city and its natural beauties, such as the river, in terms of the view that the motorist would have, a colleague remarked that Moses was thinking "in terms of the motoring public of automobiles [even if] a motorist spends [only] a few seconds at a spot and maybe he can't even look at it; maybe he has to be looking at the car ahead of him. But the pedestrian spends a long time at a spot. He can sit down and look at it. So it's the pedestrian we should be thinking of," (Exton quoted in Caro 1975, 543). Planning also questions the identity of the *ideal* pedestrian – is this person a car-less city dweller or the suburbanite car driver (Caro 1975, Barbur 2008)? – the latter being preferred in policy and space being planned accordingly.

To level the playing field of access to mobility, Jacobs advocates the widening of sidewalks and encourages social reproduction in the streets. An opponent to Robert Moses' auto-centered design for New York City, Jacobs also refers to bicycles pejoratively, even if she supports small bicycle businesses as a

crucial element to the new economy of cities (Jacobs, ND). Much like Alison Isenberg's analysis of planning in her book of *Downtown America*, bicycles have been viewed negatively because they occupy and clutter the space that pedestrians have successfully sought to claim, the sidewalk. There is thus a psychological battle between automobility and pedestrianism that has been further escalated by cyclists.

This conflict is in part because the bicycle allows an individual to experience a sensation of time-space compression, similar to a car, but without the ceiling and walls of the traditional vehicle that sterilizes the potential for social interaction. As downtown areas have been revitalized starting in the 1980s, local internal mobility has been encouraged – a step towards political and social liberation of marginalized groups. Cycling questions the appropriate speed by which one should compress time and space within the city. The bicycle could be a tool to unlock independent unlimited mobility at the local interurban scale. Yet their potential has been left untapped, even in locations of consistent good weather and little topography.

Urban circulatory networks often are used to evaluate the overall health of the modern city and they are where time-space compression and expansion occurs. In America, the infrastructure for proper circulation is perceived as a civic right by society. Circulation links the organs of the city together with a network of arteries. While the human body's circulatory system emphasizes the role of blood, the urban body incorporates liquid (water) and human (traffic) into its circulatory processes. It is useful to pair these two together because they both

have emphasized flows and fluctuations. The social and political factors that construct these two types of urban circulation strongly mark the built environment and reflect the repartition of social services. Most importantly, in respect to bicycles and transportation, these factors help construct, and destroy, public space and its social acceptance. Personal mobility is a priority and a right of the American body in terms of upward social and economic mobility, but physical mobility is often ignored. Circulation and mobility become firmly bonded to capitalism and accessibility causing an alteration of public space ways that frequently limits the mobility of lower economic ranks or ages, such as children and senior citizens. Choosing to drive a car reifies this process as normal. Many planning notions emphasize the necessity of near infinite mobility for optimal efficiency; supporting plans to capture these qualities in the creation of friction-free pathways. Modern society expects that planners will strive to remove "filth" and "sickness" from the city body by eliminating the possibility of backed up sewage and traffic congestion – if traffic is believed to be caused by bicycle space, it hence be removed. Although strategies to promote the traffic circulation vary, often the creation of new road space takes priority over the reworking of inefficient and older spaces:

> Road-building was used as the main policy tool to tackle traffic congestion, with the justification coming from some of the central tenets of the new right: those of individual freedom (narrowly defined as freedom to drive a car at virtually any point in space or time); and economic competitiveness, translated as the need for efficient road links for business… The policy emphasis was therefore on mobility rather than accessibility, with the benefits biased strongly toward those able to travel by private car (Vigar 2002, 2).

The creation of freeways that attract cars into the city act as funnels into an already clogged system; efficiency for motor vehicles is decreased and the increased traffic congestion makes it dangerous for cyclists and pedestrians. Returning to the metaphor of the body, the city becomes incapable of metabolizing the traffic. Helen Leavitt's (1970) critique of the interstate system, *Superhighway – Superhoax,* emphasizes the problem of using road propagation as a means of appeasing traffic as the number one cause of more traffic congestion. Invariably, different modes of transportation are reinforced through the processes of planning, use and policy, with significant economic and political stakes. Data manipulation has been used to justify cuts in public transportation on numerous occasions (Vigar 2002) that allowed private automotive corporations to systematically eliminate public transit (Carson 1977). The wealthy across America have been granted a symbolic "right of way" as webs of roads and interstates expanded. Whereas the disadvantaged car-less bodies have been channeled along the primary axes of the city and the environment suffer from the polluting car-culture.

2.2 BICYCLE INFRASTRUCTURE AND THE ENVIRONMENT

2.2.1 Bicycle Space Pollution: An Externality of Friction

Bicycle space is not free from the plague that produces pollution – which, as a negative externality, should be considered a source of self imposed friction of distance – but not to the extent of the automobile. The American natural

landscape has been forever scarred by the built expansion of new mobility and paved circulation patterns. Without a doubt, "most methods of transport generate negative environmental effects of some description, broadly summarized, travel by private vehicle and air travel are widely considered to be more damaging to the environment than other modes of travel" (Vigar 2002, 11). While daily operational pollution for a bicycle is minimal, the factors that facilitate a comfortable ride destroy natural habitats where organisms may already be in danger. The bicycle that shares road space, or creates its own separate asphalted artificial environment shares pollution related to road creation and repair for motor vehicle infrastructure. The long-term effects of building new roads include the emission of air pollutants including nitrogen dioxide, hydrocarbons, carbon monoxide, and particulates. Construction and maintenance activities destroy habitats and reduce global biodiversity (Ebert *et al.* 1997, 25). As the natural landscape becomes increasingly manipulated by humans and adorned by their creations, more and more physical barriers to animals, insects and organisms are created:

> It becomes more evident that individual roads and local transport facilities are part of larger infrastructure systems that isolate once-contiguous habitat areas, change the flow of water and nutrients across the land, introduce new species and ecological features, and have numerous other interrelated ecological effects (Ebert et al. 1997, 165).

The effect of infrastructure on the human species *does* alter the network systems and the flows of mobility. Indeed, the barriers of infrastructure have limited pedestrians and cyclists. Moreover, the majority of the problems come from the

pure potential for speed, size, and the weight of motor vehicles. Highway planner Robert Moses (1956) agrees on the danger of motor vehicles, chaptering a section of his book, *Working for the People*: "CARS MORE DANGEROUS THAN WAR" (193, emphasis original). Efforts to balance the effects that transportation has on the environment can easily include bicycles. Innately less intensive on the ecosystem than heavy, fuel consuming automobiles, bicycles do not create the same magnitude of impact while maintaining personal mobility on a local scale.

2.2.2 Environmental Benefits of Cycling

The amount of pollution related to the creation of the infrastructure is by no means creates as much as the pollution resulting from daily petroleum fueled combustion-engines. Transportation sector in the United States is an important producer of wastes and harmful greenhouse gases. In creating an environmental externality, pollution, the automobile essentially creates its own source of friction as it poisons the natural environment. Notoriously high CO_2 emissions in the United State's transport sector stand at an alarming 5% of the CO_2 produced worldwide (Ebert et *al.* 1997,4). Attempts to create international standards to control such emissions continuously fail to be ratified by many heavily industrialized countries, like the US. In the US, the CAFE standards were established by the Environmental Energy Conservation Policy Act of 1978 to eventually require of 27.5 miles per gal for passenger cars in 1985, increased from 18 miles per gal in 1978 (National Highway Traffic Safety Administration Website: 12/3/07). If bicycle-use replaced car-use for 8.3 - 16.5 million miles, as

hoped for by the Secretary of Transportation, the "1985 energy savings would be approximately 55,000 to 77,000 barrels per day. This figure can be compared to the expected savings of 262,00 barrels per day from ride sharing, and 302,000 barrels per day from the 55 mph speed limit" (SOT 1980, 32). Bicycles trips can easily replace shorter trips, which are less energy and time efficient (Moran 1980, 86). There are ecological and economic incentives that make eliminating barriers for the bicycle and promoting bicycle space rational, but the transition is slower than the creation of policy.

The National Energy Conservation Policy Act of 1978, created under the Carter administration (1977-1981) called for increased measures to been taken to promote environmentally and economically sustainable practices in transportation. The gasoline shortages caused by the 1970s oil embargo caused people to rethink the amount of petrol-products they consumed, especially in transportation. When it was feasible to use a bicycle, it was extremely economical. The Secretary of Transportation at the time, Neil Goldschmidt, presented a proposal for "Bicycle Transportation for Energy Conservation" in continuation a requested in the National Energy Conservation Policy Act of 1978:

> *The Congress recognizes that bicycles are the most efficient means of transportation*, represent a viable commuting alternative to many people, offer mobility at speeds as fast as that of cars in urban areas, provide health benefits through daily exercise, reduce noise and air pollution, are relatively inexpensive, and deserve consideration in a comprehensive national energy plan (SOT 1980, 1 [emphasis added]).

Over time, however, this call for increased bike mobility languished as the gasoline crisis seemed to abate, prices per gallon declined, and interstate highway

speed limits that had been lowered to 55 m.p.h. were raised to 65 and above. The utility of bicycles as the "most efficient means of transportation" (*ibid.*) is still clear, but mobilizing and motivating the population to embrace this form of transportation is not easy – creating a psychological and social space cannot be fashioned by a completely top-down initiative. Currently, the United States Department of Transportation has the opportunity to initiate new policies and practices to promote safe bicycle networks that would increase diversity in the bicycle commuter demographic. The Energy Policy Act of 2005, however, focuses on interstate transportation and makes little headway, or reference to bicycles, concentrating mainly on automobile hybridization and other alternative energy sources. The implications of this policy at the urban scale are given short shrift. Even if hybrid cars come to dominate—as the Act deems they should—the market, "the environmental benefits of technological improvement have in many respects [will be] offset by the environmental costs of increased activity" (Gilbert 2002, 64). Moreover, given that America's transportation infrastructure is aging and failing, necessary renovations across the nation will be needed to accommodate these hybrid cars. Such renovations could be used as an opportunity to plan safe bicycle space, allowing bicycles to discover the city.

The Department of Transportation takes a very practical approach to achieving mass integration of bicycles into the national and local landscapes. In their technical report *Bicycle Transportation for Energy Conservation April 1980* (SOT 1980), commission by the National Energy Conservation Policy Act of 1978, the Secretary of Transportation recognizes that creation of separate

bikeways is economically impossible for the United States, but also highlights the obstacles to bicycle use and ways to begin correcting circulation problems on smaller scales. "Personal Constraints" were the first issue acknowledged as inhibitors to potential of daily bicycle commuters. Choosing to bike to work is not a "one-time decision… Rather, that choice is comprised of a series of analyses and micro-decisions concerning the acceptability of bicycling under a specific set of conditions" (SOT 1980, 7). While the goal of increasing the number of bicycle commuters to 1,500,000 – 2,500,000 by 1985 was met, with approximately 1,800,000 commuters in 1987 (Neuffer, 1987), this is only a small proportion of the potential bicyclist population. Even today, additions to the bicycle infrastructure, as simple as well placed bicycle racks, could easily increase this number.

Bicycles are a valid, efficient, environmentally sustainable means of navigating a city, but it has been a constant battle to prove this to American society even though the world is confronted with energy-based transportation concerns that will drastically change individuals' physical mobility. In spite of urban sprawl, 40% of all automobile trips are in a bikeable distance of under 2 miles (Moudon *et al* 2005, 246) but many of these miles are extremely dangerous for non-motorists (Pucher & Dijkstra 2000). The danger makes the distance appear longer, in part because the voyage is more treacherous. An investment in bicycle infrastructure would promote the inclusion of these feasible trips into the daily geographies of many individuals. To create an immediate shift in use patterns from the automobile to the bicycle in the present-day context in America

would be nearly impossible, however, primarily because of the omnipresence of automobiles in the infrastructure and the marginalization of the bicycle. Moreover, polemic statements often set up an anti-automobile vs. pro-pedestrian/mass transit/bicycle binary, making the bicycle, or mass transit, into items of fetish that will presumably repair the transportation deficiencies that have been caused by oil dependency (Boal 2008). But it is not simply the transportation technology that will have to change. The American urban landscape, developed over the past century to optimize automobile movement, will need to be refashioned to include pedestrian and bicyclist, along with the traditional apportionment of urban space between automobiles, pedestrians and bicycles that pushed bicycles off both roadways and sidewalks. What space will bicycles be allowed to occupy? How will this space be created in a society that has long been accustomed to "planning *out"* both bicycles and pedestrians? Bicycles are known to flourish in urban environments except in those of America. Thus not only does America need to make a serious investment in bicycle oriented infrastructure, but a cultural change will also be necessary to change how the built and natural environment is legally apportioned, valued and used. This is and will be a highly contested process, producing at first highly contested spaces as bicycles become rewoven into the fabric of the urban landscape.

CHAPTER THREE

INFRASTRUCTURE CULTURE AND TIME-SPACE COMPRESSION

Daisy, Daisy,
Give me your answer do!
I'm half crazy,
All for the love of you!
It won't be a stylish marriage,
I can't afford a carriage
But you'll look sweet upon the seat
Of a bicycle made for two.

Dacre, *Daisy Bell* (1892)

Bicycle bicycle bicycle
I want to ride my bicycle bicycle bicycle
I want to ride my bicycle
I want to ride my bike
I want to ride my bicycle
I want to ride it where I like

Queen, *Bicycle Race* (1978)

Counter-culture is frequently the place of analysis when it comes to bicycles in urban American society, but how the bicycle interacts with popular culture is also of great importance in the creation of bicycle space and the social acceptance of a bicycle's ability to compress time and space. Zack Furness' (2005; 2007) exploration of bicycles in society studies the counter-culture, culture-jamming aspects of bicycles and the punk movement. Moreover, in recent years biketivism has come to the forefront on the Internet and in literature. Popular/mass culture has reflected these components of bicycle culture in its creation of what may be considered as an imaginary, popular, bicycle space that has been represented in film and has been (or could be) transcribed into

normalized culture. On the one hand, historically, songs like *Daisy Bell* (1892) reflect the idealism of the golden age of the "bicycle built for two," which has been looked back upon nostalgically by many generations, while simultaneously demoting the bicycle as a vehicle for those who cannot afford a car. On the other, there is Queen's *Bicycle Race*[4] (1978), which includes both the radicalism of space claiming and the silliness that made the group popular – allowing it to be digested by the greater public.

Why is popular culture important when it is the biketivists who are the activists and changing the quality of bicycle space? To draw upon Mitchell's (2000) work on culture and Guy Debord, in respect to bicycles Hollywood films are the "*who"* that posses the "power to generalize" and the power to present bicycle space, irrespective of its quality, and its contestation to the general public (72). Popular culture often constitutes the social acceptance of radical movements through internalization of ideas that are central to those movements, which have often been simplified by commodification. Although popular culture has been known to spread like an invasive plant, there is something to be said about the reintroduction of a native species into the cultural mix, to allow it to become sewed into the landscape. The bicycle was part of popular culture when it emerge on the dance floors, recognizing the bicycle as part of current popular-culture is one of the first steps towards reincorporating the bicycle into society. But how has the bicycle and bicycle space been incorporated into pop-culture beyond the realm of "radical chic"? How bicycles have been portrayed in film and the

[4] *Bicycle Race* was ranked number 24 on the Top 100 hits in December 1978.

greater media show not only how bicycles are part of the landscape, but also the way in which they will contribute to the environment of the future.

3.1 BICYCLE SPACE: BEYOND A RADICAL/CONSERVATIVE BINARY

> In cities, where the vast majority of utilitarian cycling takes place, cyclists suffer from a renegade image associated with disobedience of traffic laws, and a pervasive sense of cyclists as an alien presence on roads intended for cars. Indeed, the various images of cycling are so heavily determined in relation to automobiles that utilitarian cyclists are variously seen as too poor to own a car, ``anti-auto," eccentric, or deviant. The perceptions of cycling as lying outside the mainstream of American life discourage bicycle use (Pucher et al. 1999 646).

The production and construction of bicycle space has occurred on many levels: it has been produced into existence by bicycle advocates and ignored into marginalization by opponents. Social movements have diligently produced spaces for people as well as bicycles. In the cycling world this activism has been transformed into biketivism, " a contemporary form of social activism that politicizes the bicycle as a powerful weapon against the homogenizing impetus of the automobile industry and 'car-culture'" (Furness 2005 401) with many categories of involvement. Here is a summery of Furness' groupings within biketivism:

> 1. Direct action groups (e.g. Critical Mass)
> 2. Anti-automobile/public space-oriented organizations (e.g. Car Busters)
> 3. Community bicycle collectives (e.g. Bay Area Bicycle Coalition)
> 4. Various forms of bicycle-oriented media (e.g. Zines and film documentaries)
> 5. Individuals who make a conscious decision to ride a bike rather than drive a car
>
> (Furness 2005, 402).

In some instances, biketivism brings the bicycle and bicycle space into a realm of radical politics. The relationship between bicycles and radicalism goes beyond the mere utilitarian value of the bicycling in presenting it as a critique of the "relationship between commodities, space and technology" (Furness 2005, 402). Attempting to distinguish a change in perception of the bicycle from a child's toy, adult's hobby, or an exercise tool, many biketivists have presented the bicycle as an "empowering, radical alternative to automobile and car culture" (*ibid.*). The lyrics to Queen's *Bicycle Race* (1978), "*I want to ride my bicycle, I want to ride it where I like*," necessitates rebelling against the hegemonic norm. "Where I like" is not limited to, "where I am allowed" – it require claiming space that had been appropriated to others by the processes of capitalism and societal norms. Bicycles had been regarded as neutral forms of technology, but the politicizing of the bicycle "politicizes important aspects of everyday life including transportation, consumer ideology, and the urban landscape" (Furness 2005, 402). While this political critique is essential to the formation and improvement of bicycle landscapes it also creates friction – the potential riders risk being dissuaded. A critical individual is pejoratively defined as one who is "given to adverse or unfavourable criticism"(Oxford English dictionary Online 3/31/08). But the area of greatest concern for the hegemonic class is the potential that a transform will alter the critical into the radical.

The word "radical" is nearly inherently controversial in the vernacular. Although *radical* has been appropriated by popular culture, it originally implies "going to the root or origin; touching or acting upon what is essential and

fundamental; thorough; esp. radical change, cure" (Online Oxford English dictionary 2008). What is more fundamental to the tenets of democracy and the urban landscape than free mobility and circulation through the urban landscape that can be created individually on the bicycle? The American bicycle landscape is frequently critiqued for its radicalism, especially the willingness of some cyclists to confront danger (e.g. dangerous, illegal Alley Cat bicycle messenger races and high traffic cycling), which makes it difficult for the apathetic to engage themselves. On the daily scale, compressing time and space with *one owns'* strength becomes a radical action – the individual posses an enormous amount of power over their (in)ability to control their own temporality.

In Europe, the act of cycling, is not considered radical, utilitarian or a means of commuting but rather as part of the existing social and cultural practices (Copenhagen Cycle Chic 2008). These are practices that have not been established in America, but have the potential to become common practice. Iain Boal (2008) uses the comparison of "free-time" and "vacation time", which were very socialist and radical movement in their inception to the potential for bicycle to become part of normal culture. Leisure time is not only accepted, *but expected* by society. Often popular culture has been viewed negatively, but it succeeds in presenting the bicycle to greater public as part of the American landscape, even if it produces social legitimacy for the bicycle to various degrees.

3.2 BICYLING INTO THE MAINSTREAM: BICYCLE SPACE AND CULTURE IN POPULAR FILM

Undeniably, the number of times bicycles appears in film or music is significantly less than automobiles, but nonetheless they are part of American pop-culture. Cultural references have changed how the bicycle landscape in America is imagined, and hence how urban space itself is imagined and perceived. There are many movies that have scenes with bicycles such as, *The Wizard of Oz* (1939), *Better off Dead* (1985), *The Sandlot* (1993), Disney's live-action film *Blank Check* (1994), *Donnie Darko* (2001), *Napoleon Dynamite* (2004), and *Juno* (2007), to name a few. In this section, however, I will only discuss three films: *Breaking Away* (1979), *Quicksilver* (1986) and *Red Light Go!* (2002). The earlier two are pop-culture films from 1979 and 1986, following moments in policy where the government was promoting bicycling. All three films address the issue of bicycles and the cultural/psychological space they are allowed to occupy in America – allowing them to participate in time-space compression. The Academy Award winning film for Best Picture, *Breaking Away* (1979) is a precursor to the Lance Armstrong phenomenon that has Americanized the competitive cycling world and created a new generation of cyclists that has begun to make the bicycle culturally accessible. *Quicksilver* (1986) an unknown and rightfully unacclaimed film, directly address urban bicycle space in the story it develops about bicycle messenger life. I will critically compare this film to the bicycle messenger documentary *Red Light Go!* (2002) that features New York City bicycle messengers and their passion for Alley Cat Racing.

3.2.1 *Breaking Away* (1979) and the Racing Phenomenon in America

The story of *Breaking Away* follows Dave, a young recent high school graduate from a working-class family who is infatuated with bicycle racing. During a year off to find himself, Dave trains to race against the Italian cyclists he admires. His admiration and Italiaphilia turns to enculturation, as he pretends to shed his class status to present himself as an Italian exchange student to impress a young university student. The young man is obviously a superior athlete, but the scene where he follows a truck on the highway up to 60 mph is significant for the greater question of friction of distance and the myth that bicycles are barriers to cars. Not only could Dave ride with the highway traffic, his speed did not inhibit any of the automobiles – both conquered the distance in equal time – this film essentially supports Forester's (1983) "vehicular principle of cycling" (*see page 64*) that a cyclist does not need separate infrastructure and can compete with large trucks. His father, a used car salesman, is reluctant to accept his son's European ways until he sees his son win in a race at the University against American students. Following the final race of the film, the father embraces his son and the bicycle so much so that he commutes to work by bike – racing opened up urban space for average daily use. Bicycling is no longer a means to put on foreign airs but an American activity that is allowed to occupy the streets and is allowed for daily use, designating the bicycle as a means for empowerment – irrespective of nationality or class.

While *Breaking Away* has not remained part of popular culture (although it is recognized as one of the America's best films), Lance Armstrong has single

handedly revitalized the perception of bicycle racing in America since 1999. Winning the *Tour de France* seven consecutive times (1999-2005), Armstrong has successfully Americanized the sport of cycling while simultaneously increasing cancer awareness because of his battle with testicular cancer that did not prevent him from winning these titles. Cycling fundraising events for cancer existed before Armstrong's rise to fame, such as the Pan-Mass Challenge that was established in 1980 which bikes up to Provincetown, MA from off-Cape locations (PMC 2008).

Racing clumps create a critical mass of people and a sense of security. Indeed, local residents become habituated to the annual races, but often forget the legitimacy of a bicycle to occupy the space at any other time of the year. A race event that is supported by financial contributions, as opposed to illegal Alley Cat races (that I will develop in the next section), expands a space around the cyclist on the road for the day and then relegates them to the bicycle paths the rest of the year, ignoring the urban condition, but perhaps attracting new cyclists who enjoyed the sensation, although ephemeral, of safety.

Yet a problem remains in the discriminating against as to how people cycle, where they cycle, and why they are cycling – which cycling fundraising events like the Pan-Mass Challenge do not rectify. The example Ian Boal has used is the lack of social acceptance of someone who uses a bicycle to get somewhere out of *necessity* versus the recreational cyclist who essentially rides around in a circle – claiming a social status that aligns itself with the automobilist (2008). Round trip, non-competitive, recreational cycling – for example, families

cycling on a "Rails to Trails" route – is not necessarily concerned with the ability to compress time and space. Rather, it seeks to appreciate what the cyclist may consider a relative expansion of time and space because of the different quality of the experience – cycling versus driving or being chauffeured.

3.2.2 Bicycle Messenger Films and Documentaries: *Quicksilver* (1986), *Red Light Go!* (2002)

Bicycle messenger films and documentaries examine the urban condition to a greater extent. Not only is being a bicycle messenger both physically grueling and dangerous, it is associated with failure – even if the messenger likes riding their bike. *Quicksilver* (1986) is about a stockbroker wiz kid in San Francisco. In it, Jack Casey (Kevin Bacon), loses everything and decides to become a bicycle messenger because he is attracted to the physical and psychological freedom the job – which he lacked in his stock broking career. Time after time, Jack's colleagues, friends, both former and current, beg him to leave the unpredictable messenger life to continue his career in the stock market, which he eventually does after racing around the hills of San Francisco, witnessing the manslaughter a fellow bicycle messenger, being assaulted by a drug lord's car, and, of course, falling in love. Unlike *Breaking Away*, *Quicksilver* does not open up bicycling to society in its conclusion. It is unclear if the principle characters choose kept cycling as part of their new lifestyles, as socially, choosing to ride a bicycle for anything but amusement has been associated with failure.

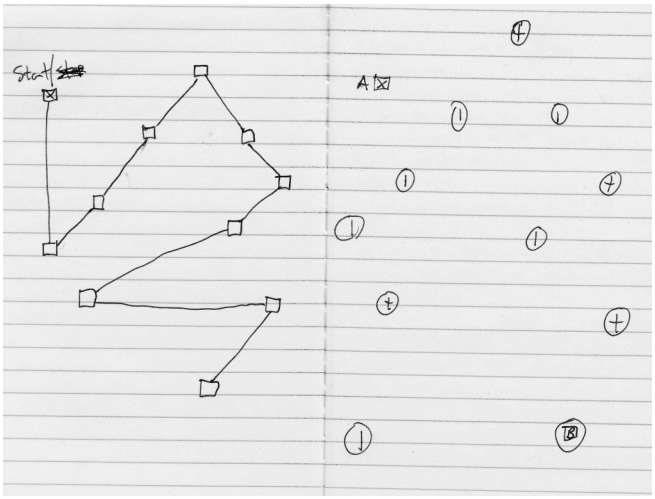
This view of bicycle messengers differs significantly from *Red Light Go!* In this 2002 documentary, filmed by Ben and Toby Barraud, which follows individuals who choose (and are physically able) to pursue a long-term career as bicycle messengers, enjoying the excitement, challenge, and independence (*Red Light Go!* 2002). The film follows several bicycle messengers in New York City who have become legends in their own right, or just love their job. It follows both men and women in the counter-culture exposé that shows both their bicycle messenger day jobs and how their passion for riding bicycles is carried into their social life in illegal Alley Cat Races.

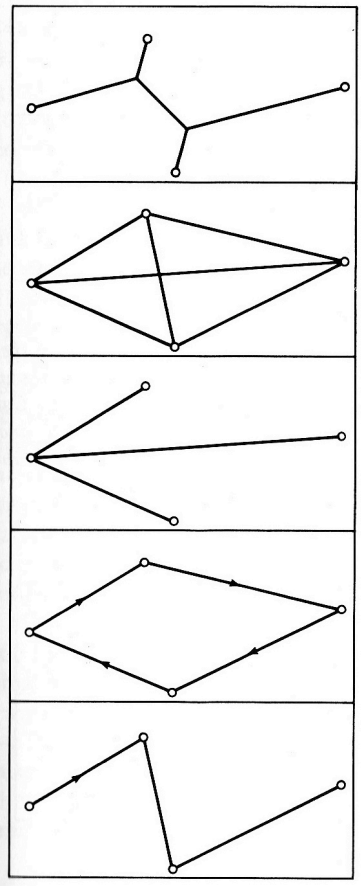
Alley Cat races are unlike no other – some of these urban races prohibit the use of traditional breaks using fixed gear bikes, other confront the reality of drug trade in the field, like the *4:20* race, that requires pretending to traffic drugs. Unlike other bicycle races, this race requires checkpoints within the city that cause maps resemble geometric time-theory diagrams. During the course of the race, cyclists break an infinite traffic laws as they speed through city streets being known to run stoplights especially on fixed gear bicycles, which lack hand breaks. Part of the reason that messenger/racers enjoy the race is the desire to weave through the streets and prove that the automobile is not exclusionary.

Riders are given the destinations and chose their own trajectories to get from place A to place B, each time gaining documentation, usually a signature, for their stop. For some messengers, the race is a way to prove their athletic power, for others, they race less for competition and more for enjoyment. Messengers fundamentally have a different relationship with the urban space

because of their constant immersion in the environment. While New York City messengers have the home advantage, Alley Cat Racing has become internationalized and New York City attracts messengers from around the world – champions of Messengers.

FIGURES B and C





Left (B): Explaining an Alley Cat Race (2007) (read right to left) by Illya Gustav Riske – Syracuse University Graduate Student in Policy Administration and Alley Cat Race enthusiast. The rider is given specific places to check-in at (right section of drawing) by drinking a beer, getting a receipt at a convenience store, or gaining a signature. They can choose any path they wish, generally opting for the most time efficient (left side of drawing).
Right (C): Minimization principles of transportation planning by Abler, Adams and Gould (1971, 279). The Alley Cat racer makes a mental map, like the one above, which employs minimization principles chose paths based on variability in the friction of distance.

Designing the course of the Alley Cat Race depends not only who is creating it, but also what holiday it may be celebrating. One of the special races that the documentary follows is the Halloween Race, which is designed to be the most difficult and "evil" – the highlight holiday. This specific race uses the

cyclist's tracks to draw an inverted pentagram of Satanism while requiring cycling on high traffic avenues during weekday rush hour. Even for a daring bicycle messenger, this space at rush hour excludes bicycles – primarily because of the proximity to cars and large trucks, and greater absence of safety that is increased by early autumnal darkness. The plan of this specific race pushes the cyclist to resist the friction and barriers that automobiles create for the bicycle.

Alley Cat races invite non-messengers, but they are not meant for everyone. Actual and perceived dangers inhibit novices who do not ride aggressively – those who do ride aggressively are classified as radical or out right crazy for taking on busy city streets. The numbers of women participants are few. Few women choose to pursue careers as bicycle messengers because of sexual harassment and extreme disrespect (latter is also a deterrent to male cyclists) (*Red Light Go!* 2002). Bicycle messengers are presented as a unique group of the population who are extremely daring in their weaving through traffic and who feel confident navigating the space between cars and trucks in the absence of separate infrastructure. The messenger lifestyle has resisted and participated in the commoditification of bicycles that has opened up urban bicycling, or the image of the messenger, to non-messengers.

3.3 BICYCLES RESISITNG THE MEDIA: CREATING AND ABATING FRICTION

Of all transportation options, the bicycle is the most removed from the media. Most cars come equipped with radios, some with TVs. A bicycle may have a bell, but that is about the extent of the auditory stimulation[5] and the surrounding environment provides the visual stimulation. It is not the "extended living room" that the family caravan has come to define. But has this detachment allowed bicyclists to be completely removed from media attention? Critical Mass's adamancy not to be branded and not to be marketed is not shared with the entire cyclist community (Klett 2002). Some attendants', however, choose participation in the event because it considered as hip or politically strategic, making Critical Mass a place to be seen, particularly in the case of participating government officials (Klett 2002). While cyclists remove themselves from radio and TV while in bicycle space (Carlsson 2002), certain cyclists, even historically, have embraced the branding of races sponsors – even serving as billboards in the case of Annie Londonderry who funded her 15-month world bicycle tour (starting in 1894) by strapping advertising to her bicycle (Zheutlin 2005). The bicycle in America is part of the consumer culture. How it has been adopted contradicts the anti-capitalist tendencies of many biketivist groups.

People are "consumers of representations of living" (Carlsson 2005) whether it is of the automobile culture or bicycle culture and the space that they occupy. "The commodification that this society injects into any form of enjoyment pervades cycling as thoroughly as anything else. Mountain bikes have

[5] It is illegal to ride a bicycle while listening to headphones in New York State (SMTC 2005).

probably sold more SUVs than anything else. The image of a bicycle riding is everywhere in advertising, promising freedom that comes from one more purchase" (Klett 2002, 93). Bicycling culture has begun to be commoditized like skateboarding. The lifestyle has been marketed to the mainstream and suburban culture. The skateboarding brand *Quicksilver* (unrelated to the film) has been integrated into suburban America and the messenger bag brand *Timbuk2* has begun to makes this transition (Walker 2007). The style of bag was originally only spotted the city on bicycle messenger's backs. Today, it has inundated the fashion market. People ascribe themselves to the cultural identity even if they are not bicycle messengers – they may not even own a bicycle. The "label lovers" consumers of America simultaneous want to show a brand and define themselves with an "anti-fashion statement" (Stimpert 2008). By making bicycle style fashionable, the cyclist is permitted to ride comfortably without being socially excluded for their choice of dress or accessories (e.g. messenger bags). The popularization of bicycle attire changes how the bicycle is viewed in society and reduces the social perception and creation of barriers against cyclists.

Physical appearance is not the only influential factor in promoting the bicycles in transportation, the lifestyle that the bicycle represents attracts American youths and young professions. Josh Wilson explains the lifestyle attraction in "Unleashing Public Imagination," an essay in *Critical Mass, Bicycling's Defiant Celebration*: "Bicycling fit in well with the lifestyle – riding to clubs and concerts was the best way to avoid interminable waits for the MUNI bus after hours in some sketchy armpit of town" (Wilson, J. 2002, 97). Waiting

around has meant conforming to schedules and spatial restrictions of the paths that mass transit take and thus the government that creates them. *Not* having to wait has been integral to the American Capitalist democracy. Waiting for the bus, or waiting in traffic in a car constitutes a significant amount of friction of distance that the bicycle does not feel because of its independent mobility and ability to weave itself through the streets. At the same time that cyclist appearances are being popularization, often as "radical chic," this ability to avoid waiting and succumbing to the schedules of others creates bicycle anarchy that draws many new cyclists – increasing the numbers of people who choose to experience urban travel by bike.

Urban bicycle culture has been accumulating more press and more participants even in the realm of Bicycle Messengers. In a *The New York Times* article, "Blood on the Tracks," a long-term messenger reflects upon the new breed of messengers entering the field:

> It's a cultural phenomenon for young post-college kids getting these yuppie jobs that don't pay them any money, figuring they're going to be paying off student loans the rest of their natural lives, or who can't get a job anywhere but a coffee shop with their art degrees. They're like, "I'll just get this track bike and stick a U-lock in my back pocket and ride around (Bleyer 2008).

Although this rising bicycle messenger culture is not being linked to high power success, it is being tied to a younger culture that has chosen the bicycle as their preference mode of transportation. This population will potentially grow old using a bicycle as transportation, provided there is adequate infrastructure that allows them to occupy. The *New York Times* article addresses bicycle messenger culture in New York City; but in American urban cycling, Portland, Oregon is

often viewed at the center of new American bicycle culture, partially because of the number of cyclists, the presence of bicycle businesses of custom build bikes and gear and the infrastructure that the government has actively creating during the last 30 years.

Bringing bicycle culture, and creating bicycle space that followed, to Portland was a concerted effort that is engaged with the environmental concerns shared by the majority of the population (Yardley 2007). Increasingly, the bicycle is considered an economic asset to the community. While Portland's local government has supported the economic benefits to the community through a dedication to bicycle infrastructure, their primary goal was rooted in environmental and public health (Yardley 2007). A bicycle is something produced– be it by large-scale manufacturing businesses or by small custom bicycle shops. More and more small bicycle businesses are concentrating in Portland, making it a Mecca for custom bicycles, custom bicycle clothing and paraphernalia (Yardley 2007). For the bicycle to thrive it has to be part of the economy, but preferably a localized production economy that would pump the bicycle community by making bicycle culture attractive. Having a significant number of cyclists creates the push for further infrastructural improvements, especially following accidents resulting in injury or death (Yardley 2008).

Popularizing urban bicycling in America will inevitably include commoditizing the bicycle lifestyle and persona. It is difficult to completely discredit popular culture because it allows bicycle space to be socially and psychologically accessible. Increasing the demand for infrastructure by sheer

numbers, the social reproductions of culture and of space have the potential to be positively cyclical. Counter-culture has gotten the wheels turning – bringing the bicycle to become an extension of the human body and part of a complete urban experience.

CHAPTER FOUR

TOWARD A BICYCLE THEORY WITHIN TIME-SPACE COMPRESSION

Creating a bicycle theory requires an imagining of the relationship between the bicycle and the bicyclist, and the rapport between the bicycle and the social landscape that permits the bicycle to occupy a space. *The Third Policeman* (1967), a novel by the relatively unknown Irish fiction author Flann O'Brien, brought me ask how the bicycle acts as an *extension of the human body* and how this affects the cyclist's perception of time-space compression. This theory plays into biketivism and the policing of bicycles in that the bicycle itself is deemed as a dangerous radical object if its rider/biketivist is considered a "radical." Critical Mass has provided a spark that initiated a radical social change that decreed that bicycles were legitimate vehicles–in its inception was extremely policed by exterior forces. Cycling Coalitions, like the Bay Area Bicycle Coalition and the Syracuse Onondaga Cycling Coalition, on the other hand have actively pursued the creation or retrofitting of the landscape as a first step towards social inclusion of the bicycle. Bicycle advocacy and activism, in both of these forms, takes the important and significant steps towards the motivating and mobilization of the public onto bicycles and alternative transportation.

4.1 THE BICYCLE: AN EXTENSION OF THE HUMAN BODY

> – 'How would you know a man has a lot of bicycle in his veins?'
>
> – 'If his number is over fifty you can tell it unmistakable from his walk. He will walk smartly always and never sit down and he will lean against the wall with his elbow out and stay like that all night in his kitchen instead of going to bed. If he walks too slowly or stops in the middle of the road he will fall down in a heap and will have to be lifted and set in motion again by some extraneous party. This is the unfortunate state that the postman has cycled himself into, and I do not think he will ever cycle himself out of it' (O'Brien *The Third Policeman* 1967, 90).

How the bicycle is regarded in relation to the human body and the surrounding environment is a determining factor for its representation in the media and society. *The Third Policeman* (1967) may seem like a cult reference, but it helps understand the relationships of humans to bicycles and bicycles to society. O'Brien's integration of Atomic Theory into the realm of transportation in his novel gives his characters the ability to acquire qualities of transportation modalities – for example – a postman's bicycling leads the postman to become half bicycle, and the bicycle half man. Although this is a fictional story (the physics of the exchange of atoms between the bicycle and is rider has not been proven), it does bring us to question how choices of transportation change how individuals view themselves and are viewed by others. In respect to time-space compression the bicycle asks the individual if they are capable of personally powering the act of compression. Speed of car travel greatly advanced with new technologies. The average bicycle speed has not changed significantly. The power behind the bicycle, the human, does not technologically alter itself like a machine. Being an extension of the body, the bicycle reacts differently toward

the perception of distance and the energy necessary to traverse a space. Unlike the automobile, in compressing time and space the bicycle does not destroy the social quality of the city street. But if we continue the analysis of the bicycle as an extension of the human body, what is the social effect of policing the bicycle?

When the New York Police Department arrested more than 300 biketivists during a protest against the 2004 Republican National Convention, they seized 354 bicycles (Moynihan 2004). Through these seizures, they essentially imprisoned cyclists as well, even if they had not made arrests. Not only did the NYPD deprive people of their primarily form of transportation, the Police confirmed the bicycle as an extension of the protesting body, something they deem worthy of being policed. The bicycle, itself, was considered as imbued with the radicalism of its riders – deeming it equally deviant. It creates a surrounding aura of radically transformed space through the act of cycling. If the bicycle and radical critique become considered as inherently linked, and the space the bicycle occupies is thus radicalized as well: does riding a bicycle make you a radical? Does building a box around yourself make you 'normal'? Sport Utility Vehicles find their roots in military aggression, with the invention of the Jeep and Hummers; does the SUV driver inherit the belligerence and isolationism of the vehicle? Or does the box-like, comfortable qualities of the personal automobile represent an extension of the home? A normal car can become a dwelling (Urry, 1999 in Furness 2007). Cyclists can have boxes around themselves like cars. Offering protection from the elements and occasionally passenger-carrying capabilities, the stable recumbent seating of vélomobiles is completely enclosed

(velomobiling.net). But is it desirable? An enclosed bicycle would change the social nature of bicycle space as well as how the environment is experienced. Time-space compression initiated by a boxed vehicle has a different quality than the compression that enables social interaction.

4.2 CRITICAL MASS

> "There is nothing implicitly political about one who rides their bike in the middle of a city street, blocking traffic during rush hour on Friday afternoon, even if the rider chooses to use a bicycle for exclusively political reasons… However, when a cyclist takes that same ride with a group of likeminded individuals – whether the ride is a celebration, or a protest against the oil industry – they transform the meaning and function of the bicycle inasmuch as they are able to communicate that message to one another, and hopefully, to people in the general public" (Furness 2005, 403).

Bicycle counter-culture in America has gained momentum since the early 1990s, with the introduction of Critical Mass into the San Francisco Bay Area. Many consider Chris Carlsson, the founder of Critical Mass, although he insists on its collective origins. Critical Mass is a bicycle demonstration, celebration, and whatever the riders want it to become – but the uniting theme is the physical, and critical, mass of people on bicycles that makes a statement. In the monthly ride through the Central Business District of San Francisco during Friday's peak rush hour, and then around the world, cyclists claim entire roads arguing that they are not blocking traffic; rather, they are the traffic[6]. It spread through Xerocracy that passed out and glued copied fliers around town, and now has reached into cyberspace to gather interest and promote discussion (Carlsson 2002). The fact

[6]More information about *(We aren't blocking traffic,) We Are Traffic!*, the documentary about Critical Mass, by Ted White can be found at http://www.tedwhitegreenlight.com/cm.htm

that Critical Mass represents everything and anything is a source of confusion and disagreement.

> The Critical Mass is a place to taste the imaginary (but suddenly and briefly real) power of collective spirit, to feel you are alive and aware as you help create a true, uncorrupted sliver of autonomous, self-directed public space. You taste a radically public and directly democratic potential in the euphoric sharing of a freely created convivial space predicated on individual engagement (Carlsson 2002, 76).

Critical Mass is "nothing less than the sudden, breathtaking transformation of public space by a collective act of will and imagination" (Wilson, J. 2002, 94). Critical Mass does not physically produce any space. It is not involved in the legislative lobbying like the San Francisco Bicycle Coalition or Bay Area Bicycle Coalition that promote local and regional infrastructure. Rather than asking for the creation of new space, they claim the space that already exists, a space that is already public and that bicycle have the right to: "Critical Mass does not ask the question of whether bicyclists should have "equal rights" to the streets, where "equal rights" means 'just like cars' " (Kessel 2002, 109). Using the public space in as a mass claims domination over the space and asks the automobilist to appropriately occupy the space without hostility towards the bicycle (*ibid.*). For the moment that the Critical Mass occupies urban space it drastically alters the hierarchy of transportation.

Chris Carlsson addresses an important concern of the creation of infrastructure in his interview on *Bikescape* (2005). Rather than wait for the government to make bicycle infrastructure, bicycles can and do claim urban space as a place for bicycles through the act of riding without the bike lane or path

existing in physicality or the imagination of planners or bicycle advocates. As Carlsson notes in this interview, cyclists and scholars agree that those who currently choose to ride a bicycle will do so irrespective of infrastructure conditions or possibility of improvement (Carlsson 2005; Mouvon *et al.* 2005). Moreover, as Critical Mass becomes accepted and almost institutionalized. In San Francisco, and other cities, the police and government no longer contest the monthly collective ride (Carlsson 2005). This said, Carlsson, and many Critical Mass supporters argue that without the monthly intervention, there would not have been the significant change in infrastructure that cities like San Francisco have experienced (*ibid.*).

There is an overarching call for people to socially produce their own lives in the public arena. Increasingly, with privatization pushes, more individuals only feel comfortable in private spaces. For these people, the traditionally "public spaces" are socially and psychologically inaccessible in many respects. The reproduction of public space as a social space has become a radical objective. Hegemonic tendencies have pushed for a conformism that social reproduction occurs in the home and not the street. How this has been manifested in suburban culture and the creation of common space reflects the psyche of the people who inhabit those communities and the landscapes they produce and maintain, which are void of spaces of common interaction. Creating spaces that forget the pedestrian is reflected in the mass culture of producing the population that does not feel comfortable being on foot. One of the goals of Critical Mass has been to recreate the street as a social space: a space for dialogue and a space for protest

(Bodzin 2002). The process of creating the space is important, it requires the space to be transformed into a place, no matter where it is located, to be hospitable. Critical Mass attempts to "live [public space] as a social space, a political space, a place for the *polis*. In doing so, we could help revive democracy and civic life" (Bodzin 2002, 104). The demonstration will continue to evolve and become "less about Critical Mass doing something different than about the people in Critical Mass finding way of extending that logic and the logic is one of a withdrawal from the dominant social relations and a choice to rather than to contest authority and society or contest the structure of life to simply create a new one" (Carlsson 2005).

Furness (2007) links Iain Borden's "performative critique" of skateboarding in the city to what Critical Mass does to space and society, "when cyclists take to the streets, because cyclists not only use the street for a non-utilitarian purpose, they call attention to the ideological norms that dictate both the prescribed function of the environment and the manner in which such environments can be traversed" (303). There is a consensus amongst participants that America has lost its democratic roots. Critical Mass participants insist that the act of the monthly rally changes how individuals imagine the city as it changes the even the most basic smells and sounds of the Central Business District (Carlsson 2005). The notion that the street space can once again inherit its roots of protest through the medium of the bicycle is significant. American individualism has grown to exclude collective initiatives for spatial change. Through creating a space and time to gather as subversives in the monthly rally

they have succeed in creating community and place for bicycles during that moment. But Critical Mass does not attract all urban cyclists; for some it is a subversive act (Klett 2002). Those who it does appeal to might be powerfully attracted to the perception of "seductive freedom" (Klett 2002, 90). Creating the public space as a place of freedom is important – for the majority of society – this includes the freedom to be "normal."

4.3 QUESTING FOR A BICYCLE LANDSCAPE

> 'Landscape' is best seen as both a work (it is a product of human labor and thus encapsulates the dreams, desires, and all the injustices of the people and social systems that make it) and as something that *does work* (it acts as a social agent in the further development of a place) (Mitchell 2000, 93-94).

Are bicycles physically dependent on space that is being 'annihilated' by automobile time-space compression in the name of 'perceived speed', or are they merely dependent on the social perception of the space and distance? Elevated, limited-access highways act as topographical barriers and exclude the general public: cyclists and pedestrians. The tendency to transform and appropriate open spaces push the privatization of places (Harvey 1990). Indeed, this psychological topography of exclusion has made it necessary for a bicycle to create its *own space* to be legitimate in the geographies of society – including the enforcement of shared spaces. If we borrow Harvey's analysis of Foucault's ideas on space we find that space, itself, "is a metaphor for a site or container of power which usually constrains but sometimes liberates processes of *Becoming*" (1990, 213). The creation of bicycle boulevards and bike paths is often viewed as a physical

manifestation of the (potential and actual) social and political power of the cyclist. Although Forester would argue that these places are no safer than others, when abiding the rules of the vehicular principle, they do represent a safe space in the psyche of the greater population. When potential cyclists are interviewed, frequently their first qualm that has prevented them from becoming a cyclist is fear that is based the absence of a protected bicycle space. While the "urban cowboy" mentality, touched upon in an interview Brendt Barbur, Director of the Bicycle Film Festival (2008), can be adapted by the adventuresome and physically fit, it leaves much of the population immobilized. At the same time, the role that a bicyclist plays as this urban cowboy reifies the space that bicycles justly occupy as special vehicles. Urban bicyclists, "cowboys" or not, are actively claiming space that they are politically allowed to share, but from which they have been socially and physically marginalized.

Urban cycling might be considered an aggressive and strategic sport, and thus limits the number of participants because of age and health factors. Neither the inferiority complex nor the vehicular-principle addresses the fact that bicycles are often seen as a nuisance by motorists and dangerous by pedestrians. Pedestrian advocate, Jane Jacobs, supports recreational bicycle use but her opinion of utilitarian cycling is hazy. In Jacobs' opinion, vehicular domination is not only an automobile related problem, but one of bicycles: "Amsterdam or New Delhi rush hour report that bicycles in massive numbers become an appalling mixture with pedestrians" (Jacobs 1993, 451).

Since mobility has been attached to social and political values in America it is difficult to deviate from its strong associated with the American-made automobile. Although cycling was an integral part of the women's rights movement, bicycle space has become dominated by men, specifically, white males who tend to spend fewer hours at work than others and have many other transportation options (Moudon et al. 2005, Pucher & Dijkstra 2000). Many men will ride irrespective of barriers, traffic conditions, and perceived danger (Moudon et al. 2005), but without a physical place to exist many other groups do not feel safe or welcome on auto-orientated roadways. In order to mobilize the population by bicycles, society has to de-stigmatize and de-genderize the bicycle and the space that it occupies.

Unfortunately not all Americans are capable of commuting daily by bicycle due to physical and health limitations even before they take the local environment into account. The Secretary of Transportation report's from 1975 still provides valuable information on the potential for demographic: 60 percent of the national population is the target group for potential bicycle commuters ranges between 19 and 45 years of age, to adapt for limitations (SOT 1980, 28). Environmental conditions affect the number of commuters: between steep grades in the topography to extreme weather conditions, not every community is consistently bicycle accessible for the less experienced cyclist.

> While many noncyclists contend that this fear is based on the "fact" that bicycling in traffic is dangerous, there is good reason to believe that the fear is related to a alack of confidence in one's ability to operate the bicycle safely and efficiently… Without proper training, novice cyclists very quickly encounter situations which are beyond their basic skill level.

> It is at this point that they do not feel capable of handling regular traffic situations (SOT 1980, 7).

Promoting safe routes and riding spaces are initial steps towards the creation of a longer tenure of bicycles and a larger consistent demographic of active bicycle commuters in the built landscape.

When the mobility of elderly population in the US is critiqued, not only for health reasons but for independence, it is important to recognize that bicycle and pedestrian infrastructure has allowed for a continued independence of this population: "Roughly a fourth of all trips made by the elderly Dutch are by bicycle.... bicycling can remain a viable way of getting around even for the elderly, provided it is made safe and convenient" (Pucher & Dijkstra 2000, 9). The problem is that riding a bicycle in America is *not convenient* – it is dangerous. The potential for a cyclist to compress time and space is ignored because of the psychological and cultural barriers that dictate who cycles in America. Convenience is the primary argument of the automobilist, but it is also that of a cyclist as well on many occasions – when it is quicker to travel by bicycle.

4.4 REDUCING THEORIES OF BICYCLE CIRCULATION DESIGN

The bicycle landscape is a product of activism, use and policy. One produced, it contributes to all three categories. Bicycle space as a product reflects the potential for social acceptance. If these bicycle landscapes succeed in functioning as designed, how will they be this "social agent" to create legitimacy? How will society reify the place of the bicycle as a vehicle or non-vehicle as a

legitimate part of the urban landscape? John Forester creates this binary of vehicular and non-vehicular cycling in his study: *Bicycle Transportation*. Forester argues that the non-vehicular, cyclist-inferiority hypothesis never existed on the landscape but has been believed by an extremely large proportion of society, government officials and planners (1983). To better understand Forester's binary, I have included his definitions of the vehicular-cycling principle and the cyclist-inferiority hypothesis:

VEHICULAR-CYCLING PRINCIPLE:

> The vehicular-cycling principle holds that, since cyclists suffer from a wide variety of accident causes, among which incompetent motorists are only a small minority, any successful cyclist-safety program must reduce most kinds of accidents; that the largest proportion of the threats that result in car-bike collisions come from ahead and from each side in the form of crossing and turning traffic; that the cyclists has the lowest rate of car-bike collisions if he follows the vehicular rules of the road and vehicular traffic principles and learns to detect and avoid motorists' mistakes; that cyclists can perform these tasks after reasonable training; and that cycling in this manner is both faster and safer than cycling in the curb- hugging or "rolling pedestrian" manner advocated by cyclist-inferiority believers (Forester 1983, 102).

CYCLIST-INFERIORITY HYPOTHESIS:

> The older cyclist-inferiority hypothesis holds that cyclists will be safest and will least delay motorists if they hug the curb, out of the way of overtaking motor traffic while cyclists who ride "in traffic" are in very serious danger from overtaking motor traffic; that cyclists must yield to motor traffic whenever a conflict is possible; that cyclists are not capable of following the vehicular rules of the road; and that these principles are required because the cyclist suffers the greatest injuries in a car-bike collision. Cyclist-inferiority believers also hold certain other beliefs, such as that belief that bikeways make cycling safe by separating bikes from cars and the belief that left turns should be made from near the curb, but these seem to be merely consequences of the more basic beliefs listed above (Forester 1983, 101).

Forester's argument is extremely controversial, but so is the existence of bicycles in a city. Reclamation city streets as a public space safe for bicyclists, for

Forester, does not require the creation of separate infrastructure or designated bicycle space. For Forester, any proposal that opposes the "vehicular-cycling" principle is the result of a "cyclist inferiority complex." His argument is supported with data that insists that separate bicycle infrastructure – located in spaces set apart from the auto – will actually increase, not decrease, the number of accidents. Forester recognizes that being overtaken by cars can kill cyclists, but he also claims that this number is minimal: only 0.02% (Forester 1983) of cycling casualties are fatalities from car-bike collisions, as opposed to 95% according to Pucher and Dijkstra. (2000).

Dissuading the creation of separate infrastructure and psychologically 'safe spaces' for riding, Forester fails to recognize that the spatial and social discrimination against bicycles he rails against actually discourages the entry of a novice cyclist into any urban space other than residential streets and recreation areas. The auto has created for cyclists an intimidating urban landscape. And without a space for bicycles, it becomes all too easy for the general public to out-right forget about bicycles or merely to remember them nostalgically as a child's toy of past generations. This becomes all the more the case as the number of child cyclists declines as children are increasingly shuttled by car (Tillberg Mattsson 2002). Thus Forester's principle inadvertently separates cyclists into two divisions: those who are automobile competitive (mainly adult men) and those who are novices (many women, and nearly all children, elderly and those with physical disabilities).

The creation of social, psychological and geographic space for bicycles to occupy is extremely complicated given the position of greater society, government and planning. Traffic engineers either ignore the issues of cyclists or they create new theories about proper bicycle behavior and how to plan for proper occupancy of spaces of transit. To his mind, the American cyclist and planner's tendency to assume that "nonvehicular cycling", one that avoids all contact with automobiles, is an irrational desire. Instead of advocating for the creation of bicycle freeways, boulevards, paths etc, Forester argues that since "cycling traffic engineering is but a subset of traffic engineering – that bicycles move, and should move, in accordance with the previously discovered and well accepted principles of traffic engineering" (Forester 1983, 103). His theory for bicycle circulation is exclusionary. It ignores the demographic non-specificity beauty of bicycle use. While bikeways deviating from linear journeys may not lower trip times, they do generate a space of psychological security to all cyclists irrespective of age and class.

4.5 COMMUNITY ORGANIZATIONS: CULTURE AND INFRASTRUCTURE

Community involvement is key to the success of any sustainability movement – it can be in the form of the amorphous community of Critical Mass but it can also be through biketivist coalitions who lobby for the creation of physical space and infrastructure for the cyclist. These groups may not have the visual numbers on the street as a mass; they have gathered a significant number of supporters, even if the number of active participants in lobbying and legislation is

significantly less. The two examples that I will use are the Bay Area Bicycle Coalition (BABC) and the Syracuse Onondaga Cycling Coalition (SOCC) who work with both regional and national transportation authorities to promote the creation of new bicycle policy, infrastructure and practices that combine both vehicular and cyclist inferiority theories. The number of members who actively partake in the creation of proposals and lobbying may only be a small portion of the group. These groups only assemble a small portion of the population to aid in planning development; other groups still have vested interests, such as "cultural communities" that "are referred to where appropriate to describe coalitions of individuals with a stake in transport planning but who are not directly connected to policy development" (Vigar 2002, 37).

The Bay Area Bicycle Coalition represents nine county bicycle advocates on regional issues in the San Francisco Bay Area. Promoting bicycle safety in recreation and transportation the BABC works diligently to establish bicycle accessibility to all of the Bay Area Bridges and transit systems (BABC website 4/6/08). This requires the transformation of the landscape, which Sabrina Merlo, BABC Regional Advocacy Director, defines as a "retrofitting of the road to accommodate the bicycle safely" (3/11/08). Merlo is responsible for creating a dialog between advocates and the government. Creating the network is key in the promotion of non-motorized transportation. One of the primary objectives of the BABC is to increase the number of children riding bicycles, especially to school. According to Merlo, 20-30% of morning traffic is related to driving children to school. The BABC and the Coalitions it represents have combined infrastructure

improvements and education for school zones and their riders. Following the example of England, they have helped organize parent led bicycle buses[7], which has received both state and federal funding (Merlo 3/11/08). Bicycle buses strengthen the social sustainability of the network. The American example, however, is consistently Portland, Oregon. It has come to represent positive land use policy that has made a significant improvement in infrastructure and the number of regular cyclists. Increasingly regions nationwide are designating more funding to bicycle infrastructure. The BABC's work has been fruitful. For the transportation plan for the next 25 years bicycles have been allotted ten times the amount of money they currently receive, matching the recommendations of the BABC (Merlo 3/1//08).

The question of where funding is being used is important. It becomes a question of accessibility; a question of the hierarchy of space; and a question of whose privileged it is to use public space at whim and safely. Planning agencies and social activist groups have to be careful of prioritizing one community over another. Syracuse Onondaga Cycling Coalition makes a concerted effort in proposing improvements to all four quadrants of the city so as not to prioritize the wealthier section of the city – University Hill Area, where Syracuse University is located (2007). Infrastructure to the University campus is still insufficient. Many of the flat corridors to campus have not incorporated bicycle safety even though there is sufficient space. Members of the SOCC literally measure the roadbeds and make suggestions from these measurements to improve safety. A primary

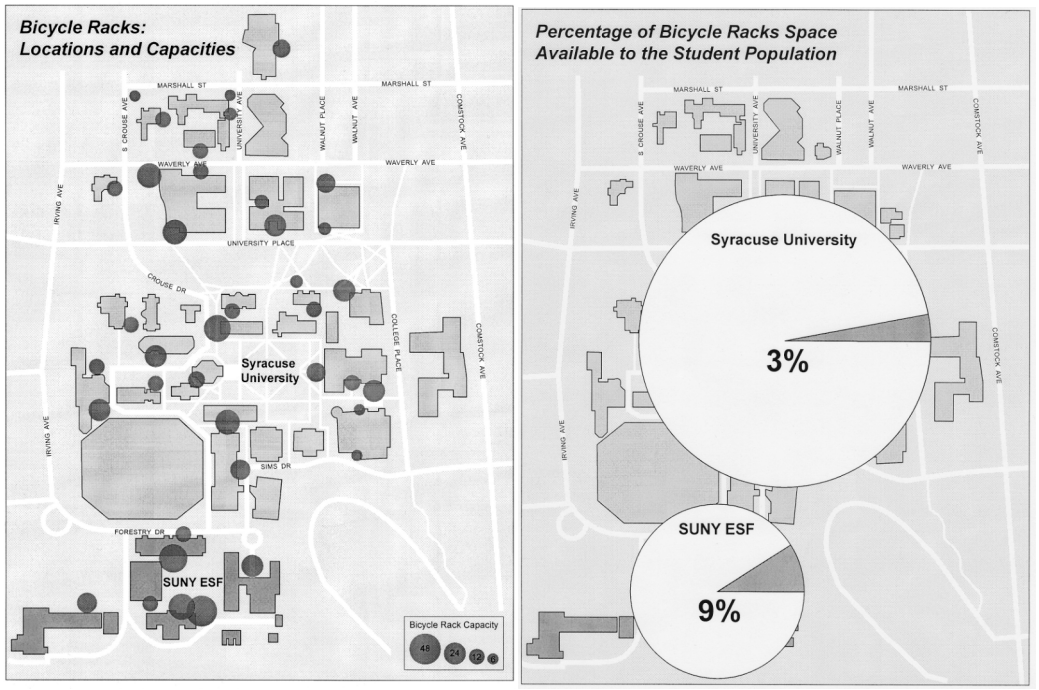
[7] A bicycle bus is daily ride to school that is led by designated parents to accompany children who ride their bicycle to school. Safety in numbers as well as the adult supervision makes it a safer, and more environmentally friendly, way of bringing children to school.

campaign is to improve intersections, where the majority of bicycle collisions occur in the city of Syracuse (SOCC 2007; SMTC 2005). Often city planned cycling paths stop yards before intersections – leaving cyclists and drivers uncertain of how they can safely share the space – causing each modality to become a physical barrier to the other. The SOCC has advocated signage to promote awareness and prevent accidents, such as the "No Right Turn on Red" campaign that protects both cyclists and pedestrians. But the main problem around the city is having a space to be (SOCC 2008). Even in pedestrian areas of Syracuse University the cyclist has not been granted the right to circulate and more importantly, the right to stay put.

Infrastructure deficiencies prevail on campus as well but cannot be addressed by the SOCC. The Student Association has moved toward a stronger campaign to promoting cycling to campus. The number and placement of bicycle racks is indicative of the situation; it is disproportionate to the student population. Syracuse University only has 3 bicycle racks per 100 students and SUNY ESF, the State University of New York College of Environmental Science and Forestry (attached to Syracuse University) is only marginally better: 9 bicycle racks per 100 students. But SUNY ESF has made a design choice that has potentially increased the number of riders of an already environmentally orientated population. Riding a bicycle from off campus apartments to SUNY ESF is convenient and places the cyclist directly at their destination. Centralized bicycle racks around the SUNY ESF Quad are constantly full Quad; Syracuse University's Quad, however, only houses two bicycle racks, neither with the

capacity of the SUNY ESF racks. Three main buildings on the SU Quad do not provide any space to legitimately lock a bicycle and nearby racks are not substantial enough to cater to the number of cyclists. Without proper infrastructure bicycles are forced to become sidewalk obstacles when the only place to be locked to railings meant for handicap access.

Figures D and E



(Maps created by K. Gill (2007) with data collected in October 2007)

Policy advocacy can ameliorate infrastructure, but creating a new generation of cyclists is a more complex process – especially in Syracuse. In between the University Hill and the downtown area is a dividing highway that acts as a psychological barrier to both pedestrians and cyclists alike. Although travel distance to downtown Syracuse from campus is less than 2 miles, it is

perceived as insurmountable. The bicycle easily makes this voyage and for the return trip, incorporating the bus (equipped with bicycle racks) makes the mount up to University Hill feasible for all demographics, irrespective of physical ability.

Activism and raising awareness is key to any psychological and cultural transition of what it means to be mobile and how the population is expected to move through the city. Biketivism on all levels (ranging from radicalism to the average cyclist) has sparked a progression in how to be mobile and the space necessary for this mobility.

CHAPTER FIVE

CHANGING PERCEPTIONS AND MODIFYING SPACE

5.1 CONCLUSION

Approaching the problem of transportation and mobility in the city needs to emphasize the importance of the cultural and socio-geographic perception of distance and spatial quality. It is this perception that has created the auto-exclusionary landscape and has pushed out both pedestrians and cyclists. In coming years, American society will be forced to re-imaging distance and their choice of modality as economic factors make automobiles cost-prohibitive especially if pollution externalities are included. Bicycle mobility has not been considered in the mix of modalities to compress time and space, in spite of their energy efficiency and their ability to act as mechanism to independently overcoming distance in an efficient manner in a setting where cars fail to do so because of traffic and congestion.

Bicycles behave as bicycles, doing things that cars cannot physically or effectively do (Barbur 2/17/08). They can manipulate time and space in a manner that motorists cannot by occupying interstitial space and weaving through the fabric of urban transportation networks. The general public has forgotten this capacity to compress time and space within the city because of the dominating effects of automobiles and sprawl, which has encouraged a mile-a-minute mentality which does not apply to intraurban travel. Cyclists have pushed to aggressively carve out urban space to be inclusive of the attractive anarchic

freedom of the bicycle. This Carving out and weaving of space through being mobile is a necessary act of resistance in the current urban situation:

> The body exists in space and must either submit to authority (through, for example, incarceration or surveillance in an organized space) or carve out particular spaces of resistance and freedom – 'heterotopias' – from an otherwise repressive world (Harvey 1990, 213).

This has politicized nature of the bicycle as an extension of the body – designating it not only mechanism for time-space compression, but also a means to socially resist the automobile. In this bicycle space, however, it is necessary to include the components that will make it convenient, popular, and normalize the act of cycling as more people begin to use bicycles daily.

For physical bicycle space this resistance may be considered two fold in its requests:

1. It requires seducing the public to redefine urban space of roads and streets as inclusive spaces that while continuing to allow cars, promotes multimodal transportation, and embraces the bicycle.
2. It requires creating *new* bicycle space that creates an image of safety that invites potential cyclists to rediscover the bicycle they knew as children.

The socio-cultural resistance requires reconstructing perceptions of the length of distance and how this distance has been socially designed to be experienced – based in the capital valuation of modalities within mobility. The social processes that incite change often originate in counter-culture, and popular culture becomes indicative of the progress (or regress) of bicycle culture, the space it produces, and the space it occupies (and desires to occupy in the future).

Questing for a bicycle space is not an easy task. Unfortunately, a universal solution for bicycle space does not, and cannot, exist. The geographic shape and characteristics of bicycle space is contingent on the natural and social environments of the city. The natural barriers that continue to discourage bicycling are unalterable for the most part: ranging from climate to topography, these variables combine to prohibit the bicycle both socially and physically. The transformation of social and cultural variables that have destroyed safe bicycle space, however, is feasible – requiring more than merely acknowledging the benefits of a bicycle landscape but actually creating it culture, society and the built environment. Developing this inclusive infrastructure is crucial and necessary to establish cycling as "normal" for the urban dweller who may have no desire to be considered a "radical."

Cyclist inferiority complexes, theories of vehicular-principle, popular culture and social activist groups will continue to variably mark the historical landscape and opponents of bicycle boulevards will continue to believe that the cyclist could lose their legitimacy on the traditional street if they are funneled into separated spaces. But at the same time, separate bicycle space creates a social space that will potentially influence the creation or designation of "new" physical space for the bicycle. Fostering a successful relationship between bicycles and urban space will forever be dependent on the perception of time and space. The ability of a bicycle to shorten the urban travel experience in an environmentally and economically friendly way will continue to make it a competitive transportation modality.

Radical biketivism will continue to attract a portion of the population to bicycles' ability to compress time and space; separate top-down infrastructure will appease those whom feel insecure on shared road spaces. But without both of these components, bicycle space risks creating its own socially exclusionary network based on ability and willingness to experience danger (e.g. Alley Cat Race) as well as creating socially unused infrastructure. Social and cultural connections are necessary to encourage a diverse demographic of those who use, and subsequently create through their cycling, bicycle space. By opening themselves to the greater public, biketivists and top-down design promote a positive cyclical action that brings cyclist because of safety and convenience of the infrastructure, and in turn, create the community and the imagined geographies of time that design urban bicycle time (effectively compresses time and space) as competitive to urban automobile time that experiences the sensation of time-space expansion in regulated, slow traffic, urban environments.

Although my thesis does not include an intensive contextualized comparison of bicycles or distance and mobility theory literature, it does, however, serve as a beginning theoretical look into how these have differentially constructed experience and space. It has left room for specific case studies on the bicycle's ability to over come friction of distance and time-space expansion in urban space. An in-depth, interview-based study on how city dwellers actually perceive urban distances and how safety and infrastructure alters perceived nature of those distances would be extremely informative. My research begs for a future study that addresses how perception of distance has been differentially constructed

amongst social classes and geographies within the city and urban popular culture. Bicycles have the potential to be an important transportation modality and part of the urban fabric. In America, a transition that creates an inclusive bicycle space will depend not only on infrastructure, but also on society's ability to reproduce new perceptions of distance and re-think what it means to be mobile.

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SUMMARY

A bicycle is a very common object. Many Americans have ridden a bicycle at some point in their lives. Yet the bicycle is not part of the daily personal geographies of the urban dweller nor of totality of the urban landscape they call their own. Automobile isolationism has dominated the urban landscape and the efficacy of bicycle navigation and the social interaction it creates in the city have been dismissed. Bicycle space has been both socially and physically marginalized and excluded from the urban landscape. But this contestation of the bicycle landscape is nothing new. Indeed, it has continued to develop a complex string of contingences and commitments that psychologically encourage and inhibit the general public from becoming regular cyclists. The problematic of the bicycle landscape is fundamentally threefold. It requires questioning the nature of the physical space a bicycle occupies, the perception of this space, and the social interaction that defines, classifies, and provides legitimacy to the use of this space in the context of a greater urban landscape. The creation of an urban bicycle landscape in America will reflect a fundamental adjustment in the psychological, cultural, and social practices and the local built environment, which together will seduce the average urban dweller into re-imagining space and distances in a city as inclusive to bicycles.

To examine these aspects of the bicycle landscape I have conducted research in urban transportation theory, the historical geographies of the development and destruction of street space, film analyses, as well interviews with authorities on the bicycle movement at the Bay Area Bicycle Coalition,

Bicycle Film Festival, Critical Mass, bicycle historians, San Francisco Municipal Transportation Agency and the Syracuse Onondaga Cycling Coalition.

Within the production of bicycle space there has been a number of processes that have marked its history and will continue to influence its future. The physical area that bicycle space currently occupies is amorphous due to their constantly contested cohabitation with both pedestrians and automobiles. Since the arrival of the bicycle in America, its use of public space has been built and fought over through road improvements, infrastructure investments, and the social production of what it means to be mobile and to circulate throughout the city. Pedestrian supporters lobbied against the bicycle by deeming them as potentially dangerous visual clutter of their pristine sidewalks, whereas it is commonly viewed that the car culture has struck the strongest blow against the compatibility of the bicycle and street. Indeed, the creation of the limited access automobile-orientated landscape designed the space as only nominally public. It excluded the auto-less public from the linear paths across the city. While Robert Moses was responsible for the creation of the New York City highway system, the project was mirrored across the country irrespective of local landscapes. The principle of 'vehicular-cycling' (Forester 1983), which treats the bicycle as a car-like vehicle that should occupy space like motor vehicles, is similarly discriminatory. In preventing the creation of separate infrastructure and psychologically 'safe space' Forester's vehicular cycling essentially reduced the number of cyclists by eliminating space for the average and novice cyclist. In many instances bicycles have been out-right forgotten or merely remembered nostalgically as a child's toy

of past generations as the number of child cyclists decreases. Together the auto-orientated infrastructure and the classifying bicycle paths as part of an inferiority complex reflect a historical overarching (un)-willingness to bring a toy of leisure onto the quotidian urban transportation landscape.

The American adoration of cars will not fade. Its continued domination over long distance travel will reflect the places where space can effectively be 'annihilated by time'. Because we can cross great distances at great speeds by car, it becomes expected that the car travel is inherently the most efficient of all modalities even at the local scale. However, when congestion, traffic, and cities lower speed limits are taken into account they act as barriers to cars and cause time-space expansion to occurs for the motorist. It is the converse of David Harvey's idea of 'time-space compression,' which reflects the destruction of barriers of interstate travel. Time-space compression fails to confront the urban and local processes of the construction of distance and perception of the time necessary to move across the city space. On the local scale, bicycle and alternative modes of circulation and mobility feasibly transcend barriers of the automobilist. However, basic components of the natural landscape prevent a universal implementation of plans due to varied topography, climate and seasonality. Moreover, cultural components have socially reproduced perceptions of time and distance in infinite ways.

The social processes that create bicycle space are multifaceted and have resulted in unexpected synergies that exist even between opposing groups. On the one hand planners create a top down design of bicycle space and use. On the

other, radical demonstrations of the Critical Mass movement build a community and its space from grassroots. In between these movements there are the bicyclists who use the space, but ascribe to neither movement. Yet the bicycle becomes an extension of their body and the policing of the bicycle, viewed as a radical instrument for change, is essentially a policing the cyclist. Often it is this cultural ideology attached to a bicycle that designates them as tools for renegade radicals and prevents people from exploring the city on the bicycle. These three examples from the biketivist movement weave themselves into the larger transportation landscape – which has become auto-orientated as part of the equation for the 'American Dream' created by society and the media. While cities like Portland can be benchmarked for their infrastructure advancements and San Francisco for its activism, no one model can be place over the 'American city'. Similarly, European policy and bicycle models can also provide valuable lessons, but American urban theory fundamentally constructs its own ideas of mobility, circulation and sustainability differently than the rest of the world. It reflects our demands for democratic rights to the city as well as the capitalist tendency to privatization open space.

In critically examining the production processes of the bicycle landscape, my thesis "Bicycle Space: The Perception and Production of Distance, Mobility, and Space in an American Urban Landscape" [tentative] adds to the growing literature on bicycle movements and bicycle space. Placing the counter-cultural aspects of biketivism in dialogue with the physical and psychological geographies that impede the expansion of bicycle space across the nation in various capacities

approaches the perception of space and the bicycle as an extension of the body in new ways. In analyzing the path that mobility and circulation have taken, my thesis calls for society to critically rethink the perception of these characteristics of the city and reintegrate them into the processes of democracy and capitalism that have built America.