2012

BIOPOLITICS OF BIKE-COMMUTING: BIKE LANES, SAFETY, AND SOCIAL JUSTICE

Samantha Z. Herr
University of Kentucky, samanthazherr@gmail.com

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained and attached hereto needed written permission statements(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine).

I hereby grant to The University of Kentucky and its agents the non-exclusive license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless a preapproved embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's dissertation including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Samantha Z. Herr, Student

Dr. Anna Secor, Major Professor

Dr. Michael Samers, Director of Graduate Studies

BIOPOLITICS OF BIKE-COMMUTING: BIKE LANES, SAFETY, AND SOCIAL JUSTICE

THESIS

A thesis submitted in partial fulfillment of the
Requirements for the degree of Master of Arts in the
College of Arts and Sciences
at the University of Kentucky

By

Samantha Z. Herr

Lexington, Kentucky

Director: Dr. Anna Secor, Professor of Geography

Lexington, Kentucky

2012

ABSTRACT OF THESIS

BIOPOLITICS OF BIKE-COMMUTING: BIKE LANES, SAFETY, AND SOCIAL JUSTICE

As cities have become increasingly motivated to be more sustainable, transport cycling has become integral in these plans. Boston is one such city enthusiastic about bicycle transportation. I take a socio-discursive approach to an investigation of transport cycling integration in Boston, MA. First, I explore the historical processes leading to the appearance of bike lanes on U.S. city streets. Next, I investigate how bike lanes are entwined in cycling safety—both in the discursive and embodied dimensions. What begins as a concern of the physical body leads to ideals of legitimacy and inclusivity, of which the bike lane has become a key symbol and act of these imaginings. Third, I tease out how this logic of cycling safety qua inclusivity becomes one that employs a rights-based notion of social justice in which legitimacy, and ultimately safety, is garnered through becoming intelligible, or visible, as cycling subjects. Finally, I depart from a liberal democratic notion of social justice and make a case for understanding how bike lanes work through the lens of what Foucault terms "security." I explore how we can view bikeways discourse as a technology of power that can be mobilized to transform social interaction in the city.

KEYWORDS: Bike-commuting, Safety, Bodies, Affect, Social Justice

Samantha Z. Herr

April 18, 2012

BIOPOLIICS OF BIKE-COMMUTING: BIKE LANES, SAFETY, AND SOCIAL JUSTICE

By

Samantha Z. Herr

Dr. Anna Secor
Director of Thesis

Dr. Michael Samers
Director of Graduate Studies

April 18, 2012

ACKNOWLEDGEMENTS

Thank you to Dr. Anna Secor, my Thesis Chair, for you instruction, inspiration, and encouragement. Thank you to the other members of my Thesis Committee, Dr. Rich Schein and Dr. Patricia Ehrkamp for your efforts and insights. Thank you to my friends and family for your constant encouragement and support through this process.

TABLE OF CONTENTS

Acknowledgements……iii

List of Figures…… v

Chapter One: Biopolitics of Bike-Commuting: An Introduction……..... 1
Biking, Sustainability, and Social Justice……..5
Bicycling and Biopolitics……...17
Methods…… 23
Conclusion…… 26

Chapter Two: Bicycle Transportation Integration and the Emergence of the Bikeways Imaginary……...27
Defining the Physical Bikescape of Boston……...28
The Setting: Arriving at the Bikeways Paradigm…….. 34
Complete Streets…… 40
The Essential Challenge for Bicycle Integration: Safety……...44

Chapter Three: Cycling Safety and Inclusivity……..51
Imaginings of the U.S. Urban Bicycle Milieu……52
Safety…… 53
Safety Turns Inclusivity Turns Legitimacy……... 56
Making Cycling Legitimate Through Visibility?..... 61
Safety Concerns: What Meets the Eye Doesn't Meet the Body
(and vis. versa)……... 64

Chapter Four: Remix: Bike Lanes as a Strategy for Safety and Social Justice..…... 69
Cycling Safety as Security…… 71
Reconsidering Inclusivity…….. 79
Back to Real Bodies……...83

Chapter Five: Methods……...89
Methodology……..93
Fieldwork and Data Collection…….. 98
Analysis…… 110
Reflections…… 113

Chapter Six: Conclusion: Bike Lanes, Safety, and Social Justice……. 115

Appendix: Participant Maps…….. 122

References……..126

Vita……136

LIST OF FIGURES

Figure 2.1: Columbus Ave. Bike Lane…….. 28
Figure 2.2: Southwest Corridor Bike Path……..……..28
Figure 2.3: Bike Share Lane designated by “Sharrow”……...…….. 28
Figure 2.4: Commonwealth Ave. Bike Lane……. 30
Figure 2.5: 2010 Existing and Proposed Lanes in Boston……32
Figure 5.1: Bicycle Video Mount…….. 107
Figure 5.2: Bicycle Video Mount…….. 107

Chapter One

Biopolitics of Bike-Commuting: An Introduction

Since the car boom of the 1950s, transport cycling in the US has been particularly stigmatized as childish and negatively associated with poverty and/or deviancy (Aldred 2010; Blickstein and Hanson 2001; Carlsson 2010; Furness 2005a; Furness 2005b; Horton 2006; Horton 2007; Horton, Rosen and Cox 2007; Skinner and Rosen 2007). As a response to dominant car-culture, environmental activists in the 1970s deployed bike-commuting advocacy, but this was largely seen as a counterculture threat to the status quo (Furness 2005b; Horton 2006). Thus, bike-commuting has generally disappeared as a potential means of transport for all but those who are too young or cannot afford a car (exemplified in such statistics as less than 1% of Americans commute by bike (McCarthy 2011; Pucher and Buehler 2009) … that is, until now. In cities across the U.S., biking is being touted as an energy-efficient, low carbon footprint, healthy, community-building form of transport, a sustainable solution to perceived urban ills. As city governments have become increasingly motivated to make their cities more sustainable, transport cycling has become integral in these plans.

Boston is one such city enthusiastic about bicycle transportation. After appearing three times on *Bicycling Magazine's* 'The Worst' list, the last of which was in 2006, the City of Boston changed its tune. In 2007, Boston Mayor, Tom Menino, launched a multi-pronged strategy to encourage bicycle transportation and make it a more viable option in the city. Since then, bike lanes and racks have been installed, a bike map project has been completed, and various city-wide bike-commuting events have taken place (City of

Boston 2011). In 2011, Boston launched one of the first bike sharing programs in the U.S. (City of Boston 2011). Recent enthusiasm and efforts for cycling transport integration by Boston residents and the City made Boston an interesting case for my research. For this geographical investigation, the departure point has become the bike lane, an emerging feature in U.S. urban landscapes.

Bike lanes are key infrastructure and symbols of the present 'bikeways' and 'complete streets' strategies for transport cycling integration. Since the mid-2000s, cities around the U.S. have been restructuring their streets to include bike lanes in unprecedented proportions. While increasingly a feature of the U.S. urban landscape, bike lanes are vehemently contested and ambiguous spaces. For example, Ben Adler, writer for *The Nation*, reports that in 2010, 'Colorado's Republican gubernatorial nominee attacked his Democratic opponent for building bike lanes, warning that they "could threaten our personal freedoms" and "convert Denver into a United Nations community"' (2011:22). Adler also cites cases in New York City, one in which the city was sued for painting a bike lane that removed street parking in a wealthy area, and another in which a Hasidic Jewish community contested a lane in their neighborhood, believing that women on bicycles were dressed immodestly (2011:23-24). How did bike lanes come to be on the street in the first place, and what does it mean for them to be there? These are the questions of my first chapter.

Because bike lanes are such ambiguous and contested spaces, it is interesting to ask, "what is at stake?" What is the thrust of bike lane enthusiasm? Through my second chapter, I come to understand that bike lanes are embedded in a process of re-imagining

urban life toward more inclusivity and humanistic ideals of public space.[1] I investigate the complex discourse of safety that works through discussions about bike lanes in transport literature, planning paradigms, bike advocacy, and for everyday bike commuters. What begins as a concern of the physical body leads to ideals of legitimacy and inclusivity, of which the bike lane has become a key symbol and act of these imaginings. The logic of bike lane safety becomes one that employs a right-based notion of social justice in which legitimacy, and ultimately safety, is garnered through becoming intelligible, or visible, as cycling subjects.

I find this rights-based logic of social justice problematic in the context of bicycling integration and the issue of safety. My fieldwork research indicates that increasing visibility and legitimacy of cyclists doesn't lead to felt experiences of increased safety for cycling bodies. This leads me to question the usefulness of a rights-based strategy of social justice to affect everyday embodied experiences. In the third chapter, I use the case of transport cycling to explore another option for conceptualizing, understanding, and strategizing for social justice in the city.

In the third chapter, I depart from a liberal democratic notion of social justice and make a case for understanding how bike lanes work through the lens of what Foucault terms "security." Security is an affective technology of power that aims to preemptively intervene through the milieu to effect the population so as to maximize benefit for the greatest number. There is, of course, always a margin of failure, those who will encounter harm. I connect fear, and more specifically cyclists' fear, to the dimension of social

[1] This does not necessarily position bike lanes on republican-democrat, liberal-conservative, socialist-democratic, or elitist-populist spectrums. It depends when, where, and by whom this discourse is being instrumentalized for these kinds of assertions to be made. In other words, there is nothing inherent about bike lanes that naturally indicates this. In this sense, bike-laning is overdetermined in that there are all sorts of meanings infusing and propelling bike lane implementation.

in/equality. I explore the connection between difference, fear, and risk in the context of transport cycling, showing how the bikeways discourse of inclusivity works through bike lanes as mechanisms of security.

This understanding is at odds with the understanding of bike lanes as territorial rights-claims, a common understanding demonstrated by bikeways proponents (from scholars to cyclists themselves). To be at odds, however, is not to be a critique. The Foucauldian perspective that I suggest is an additional perspective that highlights less seen aspects of the transport cycling experience, project towards integration, issues of social justice, and elements of power relations more broadly. I do not disagree with a rights-based interpretation of bike lanes and social justice; rather, I intend to bring to the fore an alternative dimension that simultaneously exists alongside it. While in actuality I believe that representational and affective dimensions are inextricable from each other, in this thesis I will express these dimensions dichotomously. This dichotomy is solely used heuristically in an effort to highlight and explain the nature of difference between these two dimensions. I engage in this project to hopefully flesh out what I believe has been a monochromatic painting of bike lanes, transport cycling integration, cycling safety, and social justice in the city.

From the perspective of security that I adopt, bike lanes are not understood as features of a rights struggle that claim space in the city for an under-represented population of cyclists, or that simply wave the banner for an ideology of a more humanistic way of life, but rather are mechanisms working within the bikeways discourse of inclusivity that physically shift the urban milieu, affecting spaces and bodies in important ways. Inclusivity discourse, which advocates for the inclusion of cycling as an

option for travel on city streets and for the inclusion of many different kinds of cyclists, intervenes at the conjunction of subject positionality, perception, probability, potentiality, and embodied reality. It renders cycling safety into a problem of fear and risk, and responds by negotiating difference and normalcy within the milieu. I then apply this Foucauldian-influenced understanding of the bikeways approach to cycling safety to the problem of reaching real bodies in our efforts towards social justice and safety in the city.

Cycling safety within the bikeways context provides a productive opportunity to explore this new way of thinking and acting because the problem of cycling safety is directly situated within our bodies, in encounters with one another, as we each traverse the city. There is a timeliness, and maybe even urgency, for this exploration as transport cycling becomes increasingly promoted and popularized as a mode of transport in cities across the U.S. How can we capitalize on the mechanisms at work in our changing streets and cities for a more equitable and fearless future?

Biking, Sustainability, and Social Justice

Recent transport cycling enthusiasm is a divergence from dominant car-centric ways of urban living in the U.S. As such, it inherently and inevitably invokes contestation, struggle, and marginalization. Through my research and analysis, I show how current transportation cycling integration is a movement toward creating a more inclusive urban milieu. Inclusivity is a point of convergence between the physical and ideological dimensions of cycling safety. Creating an environment that invites transport cycling to the street (i.e. implementing bike lanes) encourages more people to cycle, and

is seen to increase overall embodied safety for cyclists. This inclusivity is also seen to establish the legitimacy of cycling for transportation.

Transport cycling is embedded in ongoing social relations in the city established beyond the immediate purview of the bike. As mobilities and geography scholars suggest, the everyday ways in which we travel the city are intricately woven into the fabric of historically constituted and re-constituted power dynamics in the city (Blomley 1994; Blomley 2007a: Blomley 2007b; Cresswell 2010; Henderson 2009; Jenson 2009; Mitchell 2005; Shaw and Hesse 2010). On a meta-mobilities level, "Mobility is a resource to which not everyone has an equal relationship" (Hannam et al. 2006:3). More circumstantially, for example, Henderson (2009) looks at how parking debates in San Fransisco are "not just about parking, [but]…about how the city should be configured and organized, and for whom" (2009:71)."Different forms of mobility, such as movement by car or movement by foot [or bike], need different built environments to be functional, and are only privileged when political power promotes one over the other" (Henderson 2009:71). In other words, "[m]obility…contains social relations" (Henderson 2009:74). Thus, it is important to ask:

> Who moves furthest? Who moves fastest? Who moves most often?... How is mobility discursively constituted? What narratives have been constructed about mobility? How are mobilities represented?...Finally, and perhaps most importantly of all, there is a politics of mobile practice. How is mobility embodied? How comfortable is it? Is it forced or free (Cressell 2010:21)?

This thesis responds to some of these questions in the context of bicycle commuting, most particularly looking at how it is embodied.

As with every other facet of our lives, how we journey is implicated in our positions of privilege and experienced subjectivities, such as race, class, age, gender, and

sexuality. Bicycle transportation is no exception. Hanson (2010) appropriately opens her article on mobility and gender with Frances Willard's (the famous suffragette) account of how riding the bicycle, which was largely prohibited for women at that period of time, established her independence and freedom from the restrictions of middle-class womanhood, allowed her to explore the outdoors and her inner-self, and was a vehicle used to advance 'the woman question' (Hanson 2010:5-7). Fast forward a few hundred years, and the bicycle is still being used, at least in theory, to advance social equity. Only now, it is within the context of sustainability objectives (e.g. Batterbury 2003; Hanson 2010; Monheim 1996; Pucher and Buehler 2007; Shay and Khattak 2010; Wilkinson 1997).[2]

This concept of sustainability is understood to have three dimensions—environment, economy, and social equity (Hanson 2010; Jones 2005; Shay and Khattack 2010). These sentiments are mimicked by recent sustainable transport objectives (Shay and Khattak 2010:15).[3] Bicycle transportation integration is part of this larger move

[2] Although not a theme of this thesis, it is important to note the commercialized dimension of sustainability objectives, particularly related to bicycle transportation. Bike-commuting has become a popular expression of environmental hipsterism where environmental and social advocacy, in this case through the act of riding a bike, is incorporated into green trendiness (see Cupples and Ridley 2008; Blickstein and Hanson 2001; Helliker 2006; Horton 2006). News hype of urban bike-commuting and infrastructure development in the last few years (e.g. Aigner 2009; Baker 2009; Dell 2008; Fisher 2007; Helliker 2009; Matlack 2009; Zezima 2009) shows "cycling to sustainability" is a well-received image, and one that many US cities are actively striving toward. For example, real estate market research shows that bike friendliness status increasingly impact consumer location decisions (Wilkinson 1997:92). Enamored by precedents set by bike-commuting utopia, such as Amsterdam, the fashionable Parisian bike-sharing program, and the example of green and bike-friendly Portland, major US cities such as Washington DC, New York City, Chicago, and Boston (and many smaller cities) are bolstering biking infrastructure and are discussing and/or implementing bike-sharing programs (Aigner 2009; Baker 2009; Dell 2008; Helliker; Holtzman 2008; Jordan 2009; Matlack 2009). These municipal efforts, coupled with bourgeoning bike-commuter populations, increasingly serve to create thriving cities by adding to the "coolness" and cultural amenities needed to attract the so-called creative class (Florida 2002) for relocation as well as vacation getaways (Adler 2011).

[3] However, sustainable transport literature has been critiqued for, in practice, attending to the environmental while often leaving out the aspect of social equity (Freund and Martin 2007; Hanson 2010).

toward sustainable transport. Transport cycling, or bike-commuting, is seen as a holistic solution to environmental problems of air pollution and energy-consumption, traffic congestion and high transportation costs, and as a way to promote more equitable, community aspects of urban living (Batterbury 2003; Furness 2010; Hanson 2010; Monheim 1996; Pucher and Buehler 2007; Rastogi 2011: Shay and Khattak 2010; Wilkinson 1997). Some bicycle scholars turn a critical eye to this green-scripting of bicycling, where scholars unveil the bicycles' recent environmental endorsement to reveal how this can be at the expense of social equity, community, and/or inclusion (Aldred 2010; Cupples and Ridley 2008; Jones 2005). In this thesis, I emphasize the dimension of social equity as it pertains to cycling integration. From this perspective, where accommodating diversity is a driving theme in sustainability discourse, current cycling integration contributes, not only to a more inclusive streetscape, but to the creation of a more inclusive urban milieu at large.

While my research takes place in this overarching context of sustainability, this context largely falls away in my analysis. Instead of a systemic or structural approach, I focus this thesis on the embodied, or affective, experience of movement (like Jones 2005, Middleton 2010, Sheller 2004, or Spinney 2007, 2009). From this perspective, the issue of safety becomes my primary theme, the body my primary site. Cyclists experience marginalization and exclusion through embodied threat and perceived bodily risk in undertaking bicycling behavior on car-laden city streets (McCarthy 2011). Thus, advocates and cyclists struggle for the ability and legitimacy to cycle, not simply for the sake of ideology, but because bicycling can be life threatening.[4]

[4] If I had more time, I would have also created an analysis around the discourse of health associated with the encouragement for bicycle transportation. This discourse is incredibly ironic in that health and life is

The level of danger that cycling presents is highly contested among scholars and advocates. No matter how you calculate risk, however, the fact is that cycling can result in serious life-changing injury and even death. In 2008, for example, there were 716 reported cases of bike traffic fatalities and 52,000 reported injuries, and in 2009 there were 630 fatalities and 51,000 injuries (NHTSA National Center for Statistics and Analysis 2008, 2009). This means that while bicycle trips make up less than one percent of the modal split, bicycle fatalities make up two percent of all traffic fatalities per year (*ibid.*). Bicycle scholars Pucher and Dijkstra find that cycling versus riding in a car in the U.S. is three times more likely to result in a fatality on a per trip basis, and eleven times more likely to result in a fatality per kilometer traveled (2000:28).

Life and death dimensions beyond vehicle collision exist as well. For example, a cyclist in Charleston described an experience in which a driver threatened him at gun-point over a minor dispute about sharing the road (McCarthy 2011:1447). Another transport cyclist discussed feeling "hunted" after seeing a 'Share the Road' symbol tagged over with a circle and slash (McCarthy 2011:1447). Safety, or its other face, fear, is an issue of social justice.

Feelings of threat are conditioned by marginalization. Critical geographic literature on fear in the city argues that perceptions and experiences of fear and safety in the city are socially constructed. Scholars document differing experiences across gender, class, sexuality, age, race, and ability (Brownlow 2005; Day 2006; Doan 2007; England

promoted at the same time as it is astronomically put to risk, from things like high exposure to vehicle exhaust, bio-structural impacts of cycle-commuting on the body (such as knee strain from the stop-and-go action from red lights), and, of course, collisions. Much of the funding for bicycle transportation projects come from obesity prevention (Mapes 2009; fieldnotes 6-26-10).

and Simon 2010; Kern 2005; Loukaitou-Sideris 2006; Munt 2002; Pain 1991, 2000, 2001; Pain and Townshend 2002; Starkweather 2007;Valentine 1989). Pain states:

> Research has consistently produced evidence that social traits such as age, gender, race, ethnicity and class affect fear levels. It has been hypothesized that this is due to structural inequalities in society which affect the relation of such groups to power. Those who feel a lack of integration into their neighbourhoods, isolation, or a lack of social acceptance; those who have little control over resources; and those who are marginalized and have a sense of powerlessness within society are most likely to fear crime (1991:424).

While Pain's research, and the majority of geographic scholarship on fear in the city for that matter, has to do with fear related to crime violence, the same can be said for fear related to daily travel. Loukaitou-Sideris (2006), for example, finds that ethnic minorities, and in particular the elderly, experience more fear of walking related to threats of traffic collisions. She also finds that ethnic minorities disproportionately walk as a mode of transport, and are disproportionately represented in pedestrian injury and fatalities statistics. Likewise, Horton (2007) finds that cyclists' fear of accidents is embedded within subjective experiences of gender, race, class, etc. (134).

Fear/safety is conditioned by subjectivities, but it is also conditioned by material realities (not disconnected from subjectivity, of course), such as the locations where low income populations or racial minorities live in relation to infrastructurally impoverished streets, or access to types of modal methods. It is also mitigated by bodily capability. For example, British bicycle scholar, Phil Jones (2005), reflects on his ability to physically and emotionally handle his bicycle journey to work. If this activity posed more of an unwelcomed, or drastic, challenge to his capabilities, this activity would generate considerably more fear. Furthermore, feelings of fear and safety don't stop at the individual. Again, Jones discusses how if he had a family to take care of, he would see

the risks he takes on his bike as "unacceptable" (2005:827; also see Sheller 2004:229-230). [5] In fact, Cupples reflects, after acknowledging her own productive and reproductive responsibilities and fear of death by cycling, that "It is no sheer coincidence that commuter cyclists are much more likely to be male, and are often people who don't have immediate responsibility for the social reproduction of the household" (2011:228).[6] Similarly, Horton (2007) discuses how men who do not have fear for themselves in bike commuting, express fear for wives or daughters if they were to do the same thing. Thus, it can be understood how fear is tied to subjectivity—in this case gender—and how these subjectivities play out in material realities—like being a primary care-taker, or having the opportunity to develop cycling skills.

Transport cycling, Horton points out, 'puts the person back into the fearscape in a much less mediated way' than one would be in a car (2007:134). Unlike the car, cycling places the body in a public sphere. Engaging in the act of cycling isn't merely taking a calculated risk of accident with one's body, but is taking that risk under certain variable conditions, and allowing one's body to be open to all kinds of contact and assault that might occur while traversing public space. Thus public space is a key theme for scholarship on fear/safety in the city.

Public space is also a key theme for geographic scholarship on social justice in the city as the space where negotiations of rights takes place (e.g. Blomley 2007a, 2007b, 2010, 2011; Cameron 2007; McCann 2002; Mitchell 1997, 1998, 2003, 2005; Ruddick 1996; Sheller and Urry 2000; Sparks 2010). Blomley even figures that "public space

[5] Two academic projects focusing on cycling and domestic relationships are currently underway in Britain—"Understanding Walking and Cycling" and "Parenting and Travel Choices" (See http://www.lec.lancs.ac.uk/research/society_and_environment/walking_and_cycling.php and http://www.uel-smg.org.uk/Projects.html respectively).

[6] It is notable how this topic has gotten scholars reflecting on, and publishing, their own experiences.

scholarship has become almost synonymous with questions of social justice" (Blomley 2011:11). The street has been, and continues to be, one place of focus for these investigations, where "mobilities rights" and transport equity associated with walking, driving, and cycling have gained attention (Blomley 1994; Freund and Martin 2007; Sheller and Urry 2000). For example, Sheller and Urry are critical of how the car has eroded the purpose and use of the street, where the street is seen as synonymous with 'the public.' For them, the geography of transport equity, which plays out concretely in the street, and simultaneously in the abstract space of 'the public', looks like this:

> Pedestrians and cyclists, to a significant extent, are confined to small slivers of the urban public, while many public-transport users are relatively disenfranchised and excluded from full citizenship. Only those moving (however slowly) in cars, taxis and trucks are *public* within a system where public spaces have been democratically seized, through notions of individual choice and personal flexibility... (2000:754).

From this perspective, the entire idea of the public itself is turned inside out by car–dominant culture, where the very notion of 'the public' becomes re-written as private.

Similarly, Mitchell (2005) argues that 'the public' is being overtaken by the extension of the private arena through the 'right to be left alone' and the 'right to free passage' (Blomley 2007a, 2007b, 2010, 2011 also discusses the idea of 'rights to free passage'). Mitchell somewhat humorously dubs the construction of these rights "S.U.V citizenship." This is an atomistic sense of citizenship in which people feel entitled to not have to deal with anyone else. He says:

> The rise of the sports utility vehicle (S.U.V.) over the past decade and a half has been attributed to any number of factors (and cannot only be explained in terms of consumer choice), but a central factor has been the sense of inviolability that a couple tons of steel and fiberglass can instill. Cocooned in a sealed chamber, behind tinted glass, with the temperature fully controlled, and the GPS system tracking, and sometimes dictating, our every turn, our every stop and start, we are radically isolated from each other, able to communicate only through the false

> connectedness of the cell phone. We ride high and sovereign; we are masters of space; we are safe against all who might intrude, all who might stand in our way (and against the weather, too) (2005:96).

The connection Mitchell makes in his last line between U.S. citizens' choice of mobile modes to a sense of safety is instructive. Safety is a social justice issue present in 'the public.'

Although geographic scholarship on urban fear/safety and geographic scholarship on social justice in the city rarely come in conversation with each other, they do topically and insightfully overlap in an interest in the intersection between public space and safety. In their article, "A Safer City Centre For All? Senses of "Community Safety" in Newcastle upon Tyne" (2002), Pain and Townshend discuss how safety planning for city centers is a social justice issue because it excludes certain kinds of people and behaviors. Nicholas Blomley (2010), a geographer of law and social justice, similarly discuses how 'Safe Streets Talk' in Canada limits the use and behaviors of homeless people and beggars on city sidewalks, and mitigates people's 'mobility rights'.

Movements for cycling and walking implicitly, if not explicitly, challenge what the street, or 'the public' has become—this notion of a sort of 'private-public' sphere. Cycling and walking challenge the move away from a liberal democratic sense of the public on which car-culture thrives, encouraging, once again, the formation of a more humanistic, Habermasian ideal of public space that privileges its function to facilitate social and environmental interaction.

These differing 'street logics' are at odds with one another (Blomley 2007a, 2007b, 2011). For example, in his work on public sidewalks, Nicholas Blomley concludes:

> …[P]edestrianism operates in a unique register. To characterize public space with reference to politics, rights and social justice is to draw from a civic humanist worldview. Pedestrianism, however, relies upon different criteria. A good sidewalk, for the activist for social justice, is inclusionary and tolerant. A successful sidewalk, for the engineer or judge, is one that facilitates flow. Many legal conflicts entailing sidewalk use, often with social justice dimensions, must therefore be understood not as battles within rights, but as collisions between these two seemingly incommensurable logics (2011:11).

The street is a space that is understood (and *can* be understood) in a variety of ways, and these ways often carry with them differing and/or competing worldviews and ideals. In his more recent work, Blomley deciphers how different 'street logics' operate. For example, he explores how "traffic logic" renders streets into transport corridors, rather than spaces of citizenship (2007a, 2007b), and how "pedestrianism,"—the sidewalk logic currently dominating Canadian planning and engineering views—takes the sidewalk as a space for circulation and unimpeded flow, rather than a space for the exercise rights (2011).[7] The sidewalk, Blomley argues, is a highly politicized space, made even more so by its rendering through the logic of pedestrianism as a-political. Blomley's attention to street logics encouraged my own attention to the logics of transportation cycling integration—namely the 'vehicular cycling' and 'bikeways' perspectives—in my analysis presented in this thesis.

Literature on social justice in the city, and in particular work that considers mobility and movement, does a great job conceptualizing the role of the body in rights and representation (e.g. Blomley 2011:88-93), but rarely considers embodiment (for an exception see Kawash 1998). Conversely, I find geographic literature on fear/safety particularly compelling because it takes the body and its movements through the city seriously. It illuminates how personal, embodied experiences of fear/safety in the city are

[7] These reflect a view that is even one step further removed than what Mitchell (2005) proposes from a Habermasian public space.

expressions of power dynamics in the city, yet it does not explore how bodies are wrapped up in movements towards social justice. In other words, fear scholarship ties the affective dimension to social justice concerns, but does not go all the way to exploring the connection to social justice movements. This thesis is an attempt to tie affective, experiential dimensions to conversations about social transformation, bridging the gap between the kinds of scholarship in the fear/safety literature and academic work on urban social justice. What does consideration of the affective dimension, or embodied experience, do for geographic thought on social justice in the city?

In this way, this thesis is a study of the biopolitics[8] of cycling that (hopefully) foregrounds real bodies. Judith Butler writes in reflection of herself, "I am not a very good materialist. Every time I try to write about the body, the writing ends up being about language" (2004a:198). I am attempting not to fall into this same trap. On a theoretical level, this thesis is an exploration of the following questions: how can we understand and work toward social justice *experientially*, in everyday embodied moments and acts, rather than deferring to structures of representation, intelligibility and law (Butler's 'language') in the hopes that this works back on our everyday experiences? Is there such a mode of social justice, and if so, what does this look like? The reason I ask these questions is because it seems to me that rights-based notions of social justice fall into the very trap that Butler reflects upon. Rights-based notions of social justice render bodies into significations and language rather than dealing with actual bodies. Within this framework, which inherently rests on the ability to define and signify, we are left with a situation in which more justice can only be gained through an injustice. Butler concisely

[8] The intersection of the body and power.

states the problem this way: “I may feel that without some recognizability I cannot live. But I may also feel that the terms by which I am recognized make my life unlivable” (2004a:4). Is there a way to, at least, imagine a path toward justice that escapes this problematic?

It is not the case that I think we should do away with rights-based ways of thinking about and working towards social justice—quite the opposite—rather, I think that there is, simply, more to social justice than that. These additional methods and possibilities remain under-theorized and under-explored. I understand myself to be participating in transformational theory, not critical theory. My project is not about replacing ways of thinking and seeing, but about creating multiple ways of thinking and seeing. Different ways of seeing are needed to expand the toolbox in order that we may broaden our appreciation of the variety of possibilities and paths that exist in which to work towards the common goal of social change and transformation in our everyday lives.

With an eye toward this project, transport cycling integration becomes exemplary as a way of looking at how social change is envisioned and embodied currently in the U.S. First, transport cycling integration and, more specifically, bike-laning, is a movement for mobility rights, access, and safety. As such, it is a movement for social justice in the city that also foregrounds everyday embodied practices. Second, it’s happening now. Particularly Boston, as a space and a group of people, is in a unique moment of transition. Unlike a city like Portland or Seattle in which bike-laning and cycling integration has, in a sense, already happened, Boston is in the throws of this at an accelerated pace due to high levels of enthusiasm from multiple kinds of actors

(government, residents, businesses, advocacy groups, etc.). This shift has material, conceptual, social, cultural, and economic dimensions.

This thesis contributes to theoretical conversations about social change in that I use the case of transport cycling integration in Boston to examine our current paradigm of social justice in the city, and to explore new ways of understanding. Following the lead of scholars who call for the need to flesh out the social aspect of the sustainability agenda, this thesis contributes to sustainability conversations by exploring the social justice dimension of transport cycling integration. Largely taken as an environmental, health, and economically beneficial option by transport and planning scholars, this thesis encourages sustainability and transport scholars to hold the inherent, but often overlooked, dimensions of power relations in view. Further, by foregrounding bike commuters' experiential accounts of cycling the city of Boston, I push social justice conversations out of the realm of language and law to consider embodied dimensions of marginalization, exclusion, and inclusion.

Bicycling and Biopolitics

Whether tackling questions of cyclist identity (Aldred 2010; Blickstein and Hanson 2001; Fincham 2007; Furness 2005a; Furness 2005b; Horton 2006; Horton 2007; Horton, Rosen and Cox 2007; McCarthy 2011; Skinner and Rosen 2007),[9] the embodied experience of bike commuting (Cupples and Ridley 2008; Jones 2005; Spinney 2009, 2010), the political mobilization of the bicycle in social movements (Batterbury 2003;

[9] Aldred is also currently conducting a project on cyclists' identities entitled "Incompetent, or too competent? Negotiating everyday cycling identities in a motor dominated society" (see http://cyclingcultures.org.uk/blog/?p=1024).

Blickstein 2010; Blickstein and Hanson 2001; Carlsson 2002, 2010; Furness 2005a, 2005b, 2010; Horton 2006), or the emerging 'green cycling' discourse (Aldred 2010; Cupples and Ridley 2008; Jones 2005), social scholarship unites in its ponderings over the recent re-emergence of bicycling in automobile-dependent nations. Sustainability discourse is turning once perceived deviant cyclists into desirables; yet, despite the growing popularity of transport cycling promotion to create more healthy, inviting, sustainable cities, cyclists don't find themselves transformed so much as stuck between competing discourses. On the one hand, transport cycling is becoming the behavior of the 'responsible, good citizen' (Aldred 2010; Cupples and Ridley 2008; Jones 2005), but on the other, cyclists rarely *experience* this positive status while riding on the road (Horton 2007; Horton et. al. 2007; Jones 2005; McCarthy 2011; Skinner and Rosen 2007).

Of the first, for example, Cupples and Ridely (2008) show how transport cycling in New Zealand[10] is seen to be the "right" thing to do. Through a discourse analysis of transport cycling promotion, they argue that, "One possible dominant reading of such strategies is that in the interests of greater well-being for ourselves, we are expected to put aside any economic, social, physical, or cultural differences and get on our bikes" (Cupples and Ridley 2008:257). "The bicycle, unlike the car, is seen as helping to promote a safe and pleasant local environment" (Aldred 2010:36). On the other hand, accounts from transport cyclists demonstrate that they experience their bodies disclosed, working and at risk; they experience marginalization, outsider-ness, and near accident or death encounters; and they experience exhilaration, the toning of muscles, sweating,

[10] In this respect, New Zealand and British contexts are quite similar to the U.S.

heavy-breathing, pleasure and fun (Horton 2007; Horton et. al. 2007; Jones 2005; McCarthy 2011; Skinner and Rosen 2007).

The disjuncture between the recent 'green-scripting' of the bicycle and the everyday experiences of cyclists is illuminated by foregrounding the embodied, affective aspects of transport cycling. These dimensions remain largely overlooked by cycling advocates, transport geographers and policy-makers steeped in a sustainabilities mindset (Cupples and Ridley 2008; Jones 2005; Spinney 2007, 2009). Cupples and Ridley (2008), in fact, discuss how sustainability discourse doesn't just overlook these embodied factors, but can actually deny them. They say, "Cycling advocacy [taken broadly] in its endeavours to promote cycling appears to be developing fundamentalist tendencies…[that]…obscure social and cultural difference, ignore the embodied and affective dimensions of transport practices and fail in part to apprehend the heterogeneity of environmental responsibility" (Cupples and Ridely 2008:257). Along with others, they argue that the emphasis on infrastructure that has characterized the current strategy for cycling integration occludes actual considerations of the body (Cupples and Ridley 2008; Jones 2005; Spinney 2009) In response, scholars call for, and conduct, research focusing on the more experiential, embodied elements of transport cycling (Cupples and Ridley 2008; Jones 2005; Jones and Burwood forthcoming; Spinney 2009). This thesis is an extension of that trajectory.

Bike scholars suggest that people rarely engage in transport cycling for ideological, or 'big picture', reasons (Aldred 2010; McCarthy 2011). While sustainability ideology is certainly the backdrop for much of the recent transport cycling enthusiasm, people end up bike commuting for unique and indeterminate mixtures of personal reasons

that ultimately have to do with the desirability of the bicycling experience itself. This usually involves elements of enjoyment, health, and perceptions of bodily risk (Cupples and Ridley 2008; McCarthy 2011; Jones 2005; Horton, et. al. 2007; Skinner and Rosen 2007). Thus, foregrounding the embodied experiences of cycling led my research and analysis away from concerns with sustainability discourse and toward concerns about safety.[11]

Most literature dealing with transport cycling safety emphasizes infrastructural components of risk, such as connectivity, amenities on bridges, road shoulders, intersections, and the implementation of bike lanes (such as Chich-Wei 2011; Emond 2009; Forester 1971; Haake 2009; Heesch et. al. 2011; Krizek et. al. 2004; Krizek and Roland 2005; Parkin et. al. 2007; Pucher 2001; Pucher and Buehler 2007; Pucher et. al. 2010; Reynolds et. al. 2009; Sander et. al. 2011; Schepers et. al. 2011; Sharpe et. al. 2011). Less studied are the social and qualitative dimensions of cycling safety. More scholarship of this nature (e.g. Horton 2007; McCarthy 2011; Skinner and Rosen 2007) is much needed.

Calling attention to the importance of the social aspects of cycling integration, McCarthy finds in her study of transport cycling in Charleston, SC that "interviewees in [her] study pointed to anti-bike attitudes among drivers as being equal in importance to the poor physical infrastructure in creating risks for cyclists" (2011:1443). While McCarthy demonstrates how exclusionary experiences for cyclists are ubiquitous, we do not get to know how these experiences cross-cut cyclists' positionalities as women, men, ethnic minorities, laborers, young or older people, etc. This, of course, would be a study

[11] With more time and money, I would have covered health and pleasure as well.

in itself, and one that still needs to be undertaken. Much like critiques within the feminist movement that called on feminists to acknowledge the complexity and multiplicity in experiences of being a woman in patriarchal society, experiences of exclusion felt by cyclists are not homogenous. "Anti-bike attitudes" are embedded in much larger contexts than merely modal method prejudice; they have to do with deep-seated ideals, competing interpretations of symbolic meaning, long-standing assumptions about deviancy or undesirability, expectations and beliefs about bodies, and social and material relations across gender, age, class, sexuality etc., such as the bicycle's long-standing association with the inability to afford a car (Aldred 2010), or the inappropriateness of sweating in public (Cupples and Ridley 2008).

These complexities are particularly important to elucidate for the issue of cycling safety because creating a 'safe' environment depends on it. Since there is very little scholarship considering the social realm in cycling safety, this thesis is an effort to further flesh out some of what this realm might entail—the kinds of questions, considerations, lines of thinking, and studies that would arise from this kind of endeavor. This thesis is an experiment and a musing. It follows a "what if" line of inquiry, and it is an intervention at the theoretical level on *how to think about* cycling integration. It is my hope that this could carve out space for, and inform, further studies.

For all the bike literature on safety (such as Chich-Wei 2011: Emond 2009: Forester 1971; Haake 2009; Heesch 2011; Horton 2007; Krizek et. al. 2004; Krizek and Roland 2005; McCarthy 2011; Parkin et. al. 2007; Pucher 2001; Pucher and Buehler 2007; Pucher et. al. 2010; Reynolds et. al. 2009; Sandar et. al. 2011; Schepers et. al. 2011; Sharpe et. al. 2011; Skinner and Rosen 2007), there is not an analysis of safety

discourse. “Safety” today doesn’t entail what it used to thirty years ago, or what it will thirty years from now. What do we mean by “safety” and what circumstances produce this result? Or more specifically, what do people mean when they talk about safety for cyclists and what assumptions undergird these conversations and approaches? What expectations do we have or experiences do we envision for a ‘safe street’? And what does this discourse produce?

While sustainable cycling logics may erase the heterogeneous aspects of cycling by assuming that everyone can and should participate in cycle commuting (Cupples and Ridely 2008), cycling safety discourse does not. In fact, current cycling safety discourse begins with an acknowledgement of difference in its stated desire to provide more inclusivity. This strategy of inclusivity is about increasing the population of cyclists on the road. To produce a greater population of cyclists on the road, cycling needs to become a viable option for a wider diversity of people in the city. This is where bike lanes come in. Bike lanes are used to produce a more inviting and accessible atmosphere for a wider diversity of cyclists with varying skills, abilities, lifestyles, and purposes. But the parameters of this kind of inclusionary thinking doesn’t stop there. In fact, some proponents of this kind of cycling integration methodology assert that, “The few cities that do provide good infrastructure for cyclists are the safest for cyclists, pedestrians and cars” (Koglin 2011: 225). Planning for cyclists’ means creating more equal urban spaces where *all* road users can use the space…[It] will create a more attractive city for all” (Koglin 2011:226, my emphasis). While intentions may be in the right place on this one, so to speak, the reality may not necessarily be this idyllic. Cupples points out that “A consideration of the gender imbalance [in commuter cyclist populations] seriously

complicates the assertion that planning for cycling = planning for equity" (2011:228). Here, the discourse of safety qua inclusivity begins to unravel.

Furthermore, while employing a strategy of inclusivity is seen as a common sense method to increase safety for cyclists, it is less obvious how this strategy actually works. McCarthy (2011) argues that this strategy is ultimately about identity and social exclusion. For her research participants, she concludes, more cyclists on the road would work to normalize the cyclist identity, overturning driver notions about cyclists as outsiders. I take my interpretation more in the direction of looking at inclusivity as a safety logic in itself. Inclusivity, as it is presented through a bikeways logic, is understood as a representational strategy for safety. In this way, inclusivity is a discursive response to a pre-discursive threat (i.e. the embodied risks of transport cycling).

This challenges us to think more broadly about the assumptions we make in our experiences of safety and fear as we move through the city. What ensures our safety? Who is responsible? What is the connection between our environment, our subjectivities, and (the safety/protection of) our bodies?

Methods

My research project began with the notion attributed to feminist geography that the personal is political and professional, and that these cannot be pulled apart (Hyndman 2001; Katz 1994; Kobayashi 1994, Moss 2002; Nast 1994; Till 2001; Valentine 2002). Embracing this perspective that knowledge-making is always political, and being familiar with ethical issues surrounding the politics of representation (Nast 1994, Kobayashi

1994, Katz 1994; Valentine 2002), I only felt comfortable conducting a research project that stemmed from something I felt a personal connection to, something in my lived experience. For the last ten years of my life, I have been, and continue to be, an avid transport cyclist. I began transport cycling while living in Boston in 2002. It was love at first ride, really, and now this personal passion has turned into an academic pursuit.

My overarching approach was a case study method in which I utilized techniques of semi-structured interviews, participant-observation, participant mapping, ride-alongs, and videoing. Over the course of two and half months, I conducted 7 recorded interviews, one with the director of the city of Boston's bike program, the rest with transport cyclists, two of which were also employed at bicycle advocacy non-profits and one at a bike shop. I conducted 8 cycling journey accompaniments[12] that usually had interview components as we were riding. I conducted a total of 10 mapping exercises, 9 of which were with participants that I also interviewed or accompanied. I conducted 19 formal participant-observation days at local events, bike rides, and street and public locations in the city. These days often consisted of more than one observation outing. And I conducted 10 participant-observation rides, of which 4 were video taped.

Overall, my research population was not very racially diverse. Although some participants were of differing ethnicities, the vast majority of people in my study were white. Participation in my research was roughly equal in regards to gender. Of the total conversations about transport cycling that I recorded in fieldnotes and interview transcripts, 14 of these participants were male-bodied and 14 were female-bodied. Participants were of a diverse range of ages, from early twenties to late sixties.

[12] Four of these were with the same participant.

As this is a research study centering on movement through the city, an exploration of mobile methods was of particular interest in this study. This is significant because mobile interviewing, and mobile methods more generally, are still largely in an experimental phase (D'Andrea et. al. 2011; Jones et. al. 2008). Most specifically, I extrapolated my ride-along, or accompaniment, method from literature on the walking interview (Anderson 2004; Evans and Jones 2011; Jones et. al. 2008; Pink 2007). This method is engaged by researchers to evoke and/or instrumentalize participants' relationships with their environment(s) based on the idea that moving through space can harness embodied associations that jog memory, recall emotion, and provoke attention to affective dimensions **(**Anderson 2004; Spinney 2011). Some scholars utilizing this method emphasize the significance of place in participants' lives—impressions, memories, etc. In these studies, location is important, where verbal data is often linked to spatial data on maps (e.g. Anderson 2004; Jones et. al. 2008). Others highlight the corporeal, affective dimensions of the experience itself (Pink 2007; Spinney 2006, 2009). My methodological explorations were in this vein.

Additionally, I explored the use of video technology to document my own and other cyclists' movements through urban space. This answers a call put forth by Justin Spinney (2009, 2011) to employ video technology in researching cycling because it can "evoke and represent some of the more 'unspeakable' elements of mobile practice" that remain overlooked by transport planners and scholars (2009: 829). Utilization of video enabled me to capture the sensory, spatial, and dynamic aspects of bicycling in the city, like movement, that techniques of sound recording, photographing, and note-taking leave out.

While my use of video and journey accompaniments were valuable from a methodological standpoint, the bulk of the data utilized in this thesis is from my interviews and participant-observation. Because my work with mobile and visual methods was experimental, it was only used secondarily to triangulate themes identified through these other means. Further experimentation is certainly desirable.

Conclusion

I present in this thesis one perspective of many, but it is my hope that there is a little something for everyone. I hope that readers, whether transport cyclist, potential transport cyclist, or never transport cyclist, you feel a sense of connection to the words included on these pages. I hope that, whether scholar, planner, or daily traveler, the ideas, words, or experiences represented here instigate critical and creative thinking, or expand your experience of daily life in some way. I hope that for those who tend to live in the abstract, I have brought the abstract to everyday life in a tangible way; and for those who tend toward the practical, I hope I have constructed an entryway into understanding theory and its application. Most of all, though, I hope this thesis inspires you, provokes wonder in you, or initiates questioning in you, great or small. This, to me, is the crux of transformation. Enjoy.

Chapter Two

Bicycle Transportation Integration and the Emergence of the Bikeways Imaginary

Current thought about transport cycling integration in the U.S. has shifted away from a vehicular cycling paradigm toward the recently emerging bikeways paradigm. While cyclists on the road were once thought of as the same as motor vehicles, this idea is heavily critiqued by this new wave of thinking. Cyclists are now gaining visibility *as cyclists* in this new paradigm, of which bike lanes on urban streets are key manifestations. Boston, a city heavily involved in integrating this new approach, is a prime example of this transition taking place.

In this chapter, I take a historical perspective to explore what is at work in this transition. I begin with a definition of a bike lane and a brief outline of the factors involved in implementing them on the streets of Boston. Next, I explore how bike lanes come to be on the streets of Boston by constructing a national and local history of how dominant thinking about transport cycling integration has changed though time. The bikeways paradigm emerges as part of a broader imaginary of 'complete streets', or 'streets for all'. Finally, I outline the major thrust of this new episteme for transport cycling integration. Ultimately, bike lanes and the bikeways paradigm illustrate a new framework for conceptualizing street safety, and advocate a new ideal of 'inclusive' urban living.

Figure 2.1: Columbus Ave. Bike Lane

Figure 2.2: Southwest Corridor Bike Path

Figure 3: Bike Share Lane designated by "Sharrow"

Having a nuanced and specific understanding of what is meant when I use the term 'bike lane' is key to understanding the contemporary epistemic shift in U.S. thinking concerning bicycle transportation integration because bike lanes are one of the key physical manifestations of this new paradigm. Bike lanes, as features of urban cycling infrastructure that share motor vehicle road space, are one of the most prominent ways the current U.S. paradigm of cycling transportation integration becomes materialized in the urban landscape, thus allowing a way of thinking to be seen and felt—in one word, *experienced*—in everyday life.

The term 'bike lane' is commonly used to signify an increasingly common feature of urban landscapes in the U.S. A bike lane is a strip of road space allotted to bikes, usually by way of painted markings. An important feature of the bike lane is that, unlike bike paths, bike lanes occur alongside car lanes, on the road itself (see Figure 2.1). In contrast, bike paths may follow the street at times, but they are a separate space from the actual road (see Figure 2.2). In this thesis, bike-only, car-bike and bus-bike share lanes are treated the same (see Figure 2.3).

The form that bike lanes take—whether they are bike-only lanes, share lanes, thick or thin, on the right or left side of the street, painted or cemented, if there are accoutrements like a bike-box at intersections, etc.—is contingent on a variety of factors. Bike lanes in Boston are, more often than not, a retrofit to an existing road. The physical conditions of the road, such as natural environmental factors, the amount of space before sidewalk and building barriers, wear and weathering, car parking, type and density of traffic activity, location, road material, and road shape (i.e. long and straight, tight and curvy, etc.) all impact bike lane formation. Politics between City, State and

neighborhoods, as well as the desires of residents and users of the space, play out in the final form of the bike lane.[13] The exchange of ideas is also important. Planners and cyclists see what works in other cities, both aesthetically and strategically, and adopt it for their own city. Boston has borrowed designs from Portland, Oregon and Davis, California among other cities (Freedman interview 6-23-10). On the other hand, unique circumstances also provoke invention. Boston's patchwork streetscape presents specific traffic challenges that have led to, for example, the prototype Commonwealth Ave. bike lane that tracks the inner (left), rather than the outer (right) side of the street (see Figure 2.4) and attempts a complex merging pattern at a 5-way intersection (Kenmore Square). Of course, there are also economic factors such as money allocation, available labor, and available materials that limit what is possible (Freedman interview 6-23-10).

Figure 2.4: Commonwealth Ave. Bike Lane

In Boston, the overarching strategy for bike lane implementation has been what Nicole Freedman, Director of the City of Boston's Bicycle Programs, calls "low-hanging

[13] The Mass Ave. bike lane plan is a particularly significant example of this because the road is partly owned by the City and partly owned by the State, and this plan also involves removing car parking space (fieldnotes 8-9-10). Also, particularly in Boston, neighborhood level organization and sway is strong (fieldnotes 6-26-10).

fruit." With Freedman's direction, the City started by targeting the easiest places to construct bike lanes and have been working their way up to more complicated projects. Additionally, a rough prioritization scheme of factors for how and where bike lanes get installed provides guidance within this "low-hanging fruit" framework. These factors include: demand, geographic distribution, opportunity (e.g. if a road is being worked on anyway), networking with existing facilities, politics, and feasibility (i.e. how difficult and expensive of an engineering project is it). The City deciphers demand through an advisory committee, tracking bicycle traffic, distributing surveys online to the Boston Bikes database of now 19,000 Boston cyclists, and the influence of advocacy (Freedman interview transcript 6-23-10).

By 2010, Boston created roughly 33 miles of bike lane (Freedman 2011), or 35 including share lanes (Menino and Freedman 2011). The first of these bike lanes appeared on Commonwealth Ave. in 2008. By the end of 2009, a total of 15 miles of bike lane had been constructed on city roads, some of which are located on prominent arteries such as Commonwealth Ave., Washington Ave., and Columbus Ave. An additional 20 miles were added in 2010 (Menino and Freedman 2009, 2011; fieldwork document obtained from City of Boston). The map below (Figure 2.5) shows where current and future bike lanes exist in Boston:

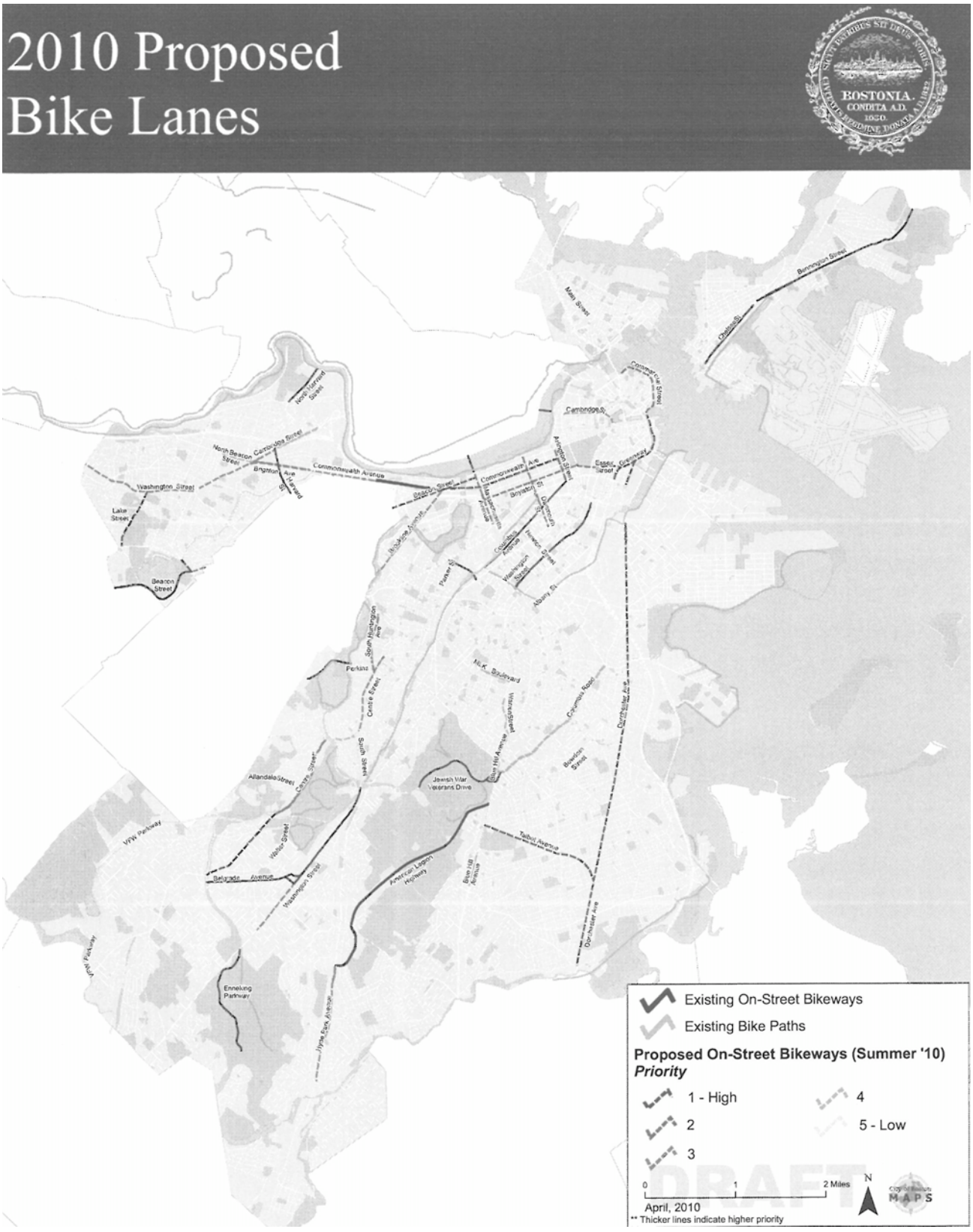


Figure 2.5: 2010 Existing and Proposed Lanes in Boston

Although the ambitious goal of adding 100 miles of bike lane in 2010 was not reached (stated in Menino and Freedman 2009), plans for bike lane construction on two of the largest roads in Boston (Massachusetts Ave. and Dorchester Ave.) have been accepted, indicating that the City is moving steadily ahead (interview with Freedman 6-23-10; fieldnotes 7-20-10; bike lane plan documents obtained from City of Boston). This incrementalized growth that Boston has achieved since 2007 is quite remarkable. Jamaica Plain, Roslindale, and Allston have now become the first of Boston's neighborhoods to have entire bike routes to downtown facilitated by a connected stream of paths and lanes[14] (Menino and Freedman 2011). In an effort to expand bicycling connectivity to the entirety of the city, Boston transport planners are working with Toole Design (the same company that is handling a large portion of the Boston's Complete Streets work) on a bicycle networking project for which a working group has also been formed. Members of this working group are of a spectrum of cycling abilities from a variety of neighborhoods in Boston (Menino and Freedman 2011).

In fact, Boston residents appear to have a considerable role in the development of bike lanes in the city. In the past few years, neighborhoods in Boston have started organizing bike groups. Currently there is JP Bikes in Jamaica Plain, Rozzie Bikes in Roslindale, DOT Bikes in Dorchester, and AB Bikes in Allston-Brighton. According to one prominent bike activist, the neighborhoods in Boston have to be on board for anything to get done (fieldnotes 6-26-10), so it is notable that bike-ability is now a growing part of the agenda for neighborhoods in Boston. In talking with people involved

[14] A structural analysis of the socio-historical conditions that underlies this distribution of Boston's bikeway connectivity could be an interesting endeavor, but is not taken on by this project.

in neighborhood bike groups during fieldwork conducted in the summer of 2010, it seems that one of the main functions of these groups is to deal with issues regarding the implementation of bike lanes in these respective neighborhoods, whether it is lobbying to get a bike lane, dealing with controversy over where a lane should go, or the design. It is clear that there is current and growing attention for creating bike lanes in Boston from residents, communities, planners, and the City government alike, but within what context has this bike lane enthusiasm and implementation emerged?

The Setting: Arriving at the Bikeways Paradigm

The beginnings of the burgeoning American urban bikescape can be traced in many ways to the 1970s. Increasing gas prices, the first concerns in the U.S. about global climate change, rising obesity and other health concerns related to Americans' inactivity, the occurrence of environmentalist-motivated cycling, and dramatic increases in bike sales converged in the 1970s, creating an unprecedented collective consciousness open to bicycle transportation integration (Mapes 2009:27-60). During this bike boom, strong bike advocacy efforts surfaced in places such as Davis, Philadelphia, New York City, and Washington D.C. National bike organizations were founded, such as the Bicycle Federation of America and the Boston Area Bicycle Coalition in 1977. The latter organization would become MassBike, one of Massachusetts and Boston's most prominent bike advocacy organizations today (fieldnotes 6-26-10). Although the social and political climate of the 1970s created an opening for bicycle transportation

integration, what this integration meant and how to go about it was a hotly contested issue. Some cyclists and transport planners advocated for the creation of bike lanes and paths, collectively referred to as 'bikeways,' while others argued vehemently against them.

The latter position, attributed to the eccentric 1970s bike advocate and transportation engineer John Forester, argues for what is known as "vehicular cycling," in which the proper incorporation of cyclists on the road is seen to be total integration with motor vehicles (Mapes 2009; Pucher et. al. 1999:632). Concisely stated, the vehicular cycling perspective is that "cyclist fare best when they act and are treated as drivers of vehicles" (Forester 2001:15; Haake 2009). This position has two main tenets. The first is that fully integrating cycling into traffic is the safest way to cycle; second, creating separate facilities for cyclists undermines the legitimacy that cyclists have to be on the road (Forester 1971, 2001; Mapes 2009). Forester argues (Forester 2001, 2009) that while bikeways are touted as safety measures, in actuality the motive is to preserve motorists' supremacy on the street. For example, he makes statements such as, "To the cyclists who have to ride on bad paths, the motorists' motive is obvious: they want to reserve the best facility for themselves by kicking cyclists off the roadway" (1971:170). If the concern was really one of safety—and it should be, according to Forester-- and not one of legitimacy or territory, Forester believes everyone in their right mind would be in favor of the complete integration of cyclists with vehicles.

Forester's views were widely popular and influential in strategies to integrate utility cycling in the U.S. His educational cycling guide, "Effective Cycling" (1971) and cycling guide for transportation engineers, "Bicycle Transportation: A Handbook for

Cycling Transportation Engineers" (1977) were some of the earliest and widely read (relatively speaking to the transport cycling world) of their time. From the 1970s to the 1990s, the vehicular cycling perspective largely won out across the U.S., and Boston was no exception. Former Boston bicycle transportation planners subscribed to this vehicular cyclist paradigm (Mapes 2009:42; fieldnotes 6-20-10, 6-26-10), so not much attention was given to bike-specific facilities. During my fieldwork, I was told by a government official who had participated in Boston bicycle "task forces" in the past that bike planning was only one of a handful of roles performed by the transport planner appointed to the job, so this severely limited what could be done. The word "bike," in fact, was not even in the title of this so-called bike coordinator position, and regardless, this position was soon cut due to lack of funds (Freedman interview transcript 6-23-10). Thus, lack of support in values, labor, and money allocation to this position limited Boston's involvement in bicycle issues. Before 2007, the little government attention that was allotted to bike-specific infrastructure in Boston was at the state level, which consisted largely of the creation and maintenance of trails (*ibid.*), which foremost facilitated recreational riding, and not the transport riding targeted today.

Vehicular cyclists sentiments were also disseminated outside of government and planning circles. For example, John Allen, a cycling education advocate from Waltham, MA, agreed with the vehicular cycling perspective. Based on Forester's ideas, Allen wrote a pamphlet entitled "Bicycling Street Smarts" that may be the most widely read cycling education guide in the U.S. (Mapes 2009:43). Additionally, the "Complete Book of Bicycle Commuting" published in 1981 as a resource for everyday citizens who want to learn to cycle commute (written by John Allen with contributions from the Boston

Area Bicycle Coalition) states, "…All too often, bike lanes and bike paths have been an excuse for prohibiting bicycles on routes which are *safer, faster, and more direct*— an outright discouragement to bicycle transportation" (292). This is but one example of the popular bicycle integration rhetoric that persisted into the 1990s. The perception that bikeways were threatening to the legitimacy and safety of cyclists on the road dominated the discourses of those with power to make things happen in the utility cycling world locally and nationally (Davis, California is a counter-example), with great effect on the appearance, feel, and use of U.S. urban cycling environments.

This began to change in the 1990s. Increasing concerns with traffic congestion and air pollution put the topic of utility cycling promotion and integration in U.S. cities back on the national agenda with new force. In 1990, the U.S. Congress allocated one million dollars for a national biking and walking study to be conducted by the Department of Transportation to determine the potential for biking and walking in the U.S. (Bicycle Federation of America 1992). This study was undertaken by the Bicycle Federation of America for the Federal Highway Administration. The report, entitled "Integrating Bicycle and Pedestrian Considerations Into State and Local Transportation Planning, Design, and Operations," was completed in 1992. Furthermore, the Clean Air Act Amendments of 1990 and the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 directed money to bicycle and pedestrian specific projects (Bicycle Federation of America 1992; Dill and Carr 2003; Mapes 2009:49; Pucher et. al. 1999). The Clean Air Act Amendments called for the allocation of sections of road for unmotorized use, programs to create bicycle facilities for storage and travel, and programs to reconstruct pathways. ISTEA mandated that states develop long-range plans

for bicycle and pedestrian integration with the creation of a full-time bike-pedestrain transportation coordinator and educational efforts (Bicycle Federation of America 1992; Mapes 2009:49). In 1998, ISTEA was renewed by the Transportation Efficiency Act (TEA-21) (Dill and Carr 2003; Mapes 2009:49; Pucher et. al. 1999). The American Association of State Highway and Transportation Officials produced the *Guide for the Development of Bicycle Facilities*, which was in its 3rd edition in 1999 (ASSHTO 1999), and has been used as a baseline design for the implementation for many of the bicycle lanes in the U.S., including Boston (Boston Transportation Department 2001).

The City of Boston took part in this sea change. In the early 1990s, the City called for a bicycle facilities overview report, which was carried out by the Bicycle Coalition of Massachusetts (now MassBike) and was completed in 1995. In 1999, the city reinstated the Boston Bicycle Advisory Committee and backed their stated commitment to improving cycling in the city with the development of a ten year bicycle plan (Boston Transportation Department 2001). Following suit in 2007, Mayor Menino appointed Nicole Freedman to direct a new Boston Bikes program "with the goal of transforming Boston into a world-class bicycling city" (Menino and Freedman 2009).

The legislative and planning efforts from the federal and local levels during the 1990s demonstrate increasing support for a new approach to bicycle integration, namely a bikeways and facilities approach, but it has only been since the turn of the millennium that a truly new bicycling paradigm has come to reign. Nicole Freedman, Director of Boston Bikes, describes this transformation in cycling integration thinking in this way:

> I sort of look at the progression in the U.S. of bike planning, and you have pre-1990s, which is 'bike was an afterthought'. You might have a wide outside lane for a cyclist and it's like, 'yea, yea, yea, whatever'. And then in the 1990s when bike-laning sort of started, biking was an alternative. You say, 'well if we have

> room, we'll put in the five foot bike lane'. And now you have biking as an equal, and that's where you get the protected bike lanes and stuff like that (interview transcript 6-23-10).

This "third wave" of bike planning thought that Freedman articulates is further demonstrated at the national level by the publication of the Bicycling and Walking Benchmarking Report, first in 2007 and again in 2010.[15] The report has been specifically designed for use by U.S. city planners, where transport cycling, and bike lanes specifically, figure prominently (Alliance for Biking and Walking 2010). Additionally, the SAFETEA-LU Act passed in 2005 that specifically allocated money for bike infrastructure (Krizek et. al. 2009). More federal encouragement for bicycle transportation has come through the Bicycle Commuter Tax Provision that was passed in 2008 and implemented in 2009 (but first introduced in 2006) as part of the Renewable Energy Tax Credit legislation that extends the transportation fringe benefits to include benefits for those who cycle to work (League of American Bicyclists 2000-2012).[16] These national reports, acts, and benefits created in just the last several years indicate clear support and encouragement for not only bicycle transportation integration, but for integration through a bikeways approach.

For some bikeways proponents, the defining moment of arrival at this new era of U.S. cycling integration finally occurred during the National Bike Summit in March 2010 when Secretary of Transportation, Ray LaHood, stood up on a table top and proclaimed his commitment to biking and walking facilities in the name of creating and supporting

[15] It is notable that this report was funded by the Centers for Disease Control and Prevention. There is a distinct connection between health discourse and bicycle transportation promotion, however, space and time does not allow for me to explore this face of current U.S. utility cycling integration in this thesis.
[16] I encourage anyone who does not have this benefit at her/his place of work to discuss it with her/his employer. Here is a helpful link to information and resources for implementation of the benefit: http://www.bikeleague.org/resources/commuters/index.php.

"livable communities" (LaHood 2010). He articulated the new federal perspective on his blog later that day. He said, "We are integrating the needs of bicyclists in federally-funded road projects. We are discouraging transportation investments that negatively affect cyclists and pedestrians. And we are encouraging investments that go beyond the minimum requirements and provide facilities for bicyclists and pedestrians of all ages and abilities" (LaHood 2010). In other words, utility cycling (along with walking) now figures prominently in the transportation imaginary of the federal government, where bicycle travel is no longer an after-thought or an alternative, but a sought after goal that deserves encouragement, promotion, and specific intentionality.

Most importantly for the subject of this thesis, this new transport imaginary not only reconstructs visions of Americans' everyday travel modes, but also the environments in which everyday travel is taking place. As alluded to by LaHood's last sentence, the approach to bicycle integration by way of providing bikeways (and walkways) is about providing a space for people "of all ages and abilities." In other words, it is about creating 'streets for all.' Bike lanes have been devised as an important component of a strategy towards that end.

Complete Streets

At a national level, the 'streets for all' paradigm is embodied by the Complete Streets movement. 'Complete Streets' was a phrase originally coined in 2003 by a national coalition of transport advocates to "better communicate the inclusion of bicycles in everyday transportation planning to government officials and the general public"

(LivableStreets e-flyer 2/17/11), but has now come to signify a larger humanistic view of streets as an inclusive space for people of all abilities and transport modal usages to co-exist and interact with one another in an equitable way (National Complete Streets Coalition 2005-2011a; Complete Streets Meeting Notes 10-14-09). Although Complete Streets now expands beyond bicycle integration to a multi-modal approach, bikeways are keystones of the Complete Streets design plans as a way to promote community and active lifestyles (National Complete Streets Coalition 2005-2011b; Boston Transportation Department 2010). In particular, bike lanes are an important strategy in the traffic-calming toolkit, as they help with "road diets" (shrinking the size of the road), and therefore encourage motorists to travel at slower speeds (CompleteStreets meeting notes 10-14-09; fieldnotes 6-26-10; Mapes 2009:217). As of 2010, Complete Streets principles have been adopted in over 200 planning policies in places across the U.S., and Boston is among them (LivableStreets e-flyer 2/17/11).

Recognizing that "[S]treets define the character of Boston's neighborhoods and are the common ground where people travel, meet and do business on a daily basis" (City of Boston Transportation 2010), Mayor Tom Menino has Boston headed toward Complete Streets. Boston transportation planners are adopting the themes of "multi-modal, green, and smart" (Livable Streets e-flyer 2/17/11; Boston Transportation Department 2010) to put "pedestrians, bicyclists and transit users on equal footing with motor-vehicle drivers…[and] improve the quality of life in Boston by creating streets that are both great public spaces and sustainable transportation networks" (Boston Transportation Department 2010). Boston's Complete Streets policy guidelines were scheduled to be formally reviewed in Spring 2011.

In addition to Boston's Complete Streets initiative, the local street advocacy nonprofit, Livable Streets, has been a major force in Boston's collective re-imaginings of urban mobility oriented towards a 'streets for all' direction. I encountered ubiquitous referencing to Livable Streets by people in both formal research and social scenarios during my fieldwork in Boston. At bike-specific community events that I attended, Livable Streets was not hard to find, as their presence was often marked by a temporary bike lane chalked in on some portion of the nearby road, flagged with orange cones. Livable Streets, largely run by volunteers, was created in 2005 to help build coalitions between different transport mode groups— namely pedestrians, cyclists, and public transit users— along with groups concerned with environmental, health, and community issues, and to push for bike facilities at a time when the vehicular cyclist perspective was still really strong in Boston. The organization helps people see the connections between these different interests and speak with one voice. Significantly, about 90% of the advocacy that LivableStreets conducts is done with other partner groups, including the City of Boston (interview notes with LivableStreets Director 7-9-10).

Bicycle transportation is a cornerstone of the Livable Streets agenda. The organization was, in fact, started by cycling advocates and early in their existence, the organization worked hard to rally for a Boston bike program before the inception of one in 2007 (interview notes with Livable Streets Director 7-9-10). Now Livable Streets continues to be a consistent partner with Boston Bikes. They received a grant from Bikes Belong to work with the City on bike planning and the Better Bridges campaign, and they also host the Boston Bikes annual update event every year where the City's past achievements and future plans are reported to the public. Additionally, Livable Streets

has been very influential in the incorporation of bike lanes onto Boston streets. They played a major role in getting the first mile of bike lane laid in Boston in 2008, and volunteers continue to contribute planning suggestions and designs for consideration by the City (interview notes with Livable Streets Director 7-9-10).

This alliance between Livable Streets and Boston Bikes is an enactment of the City of Boston's alignment with a broader Complete Streets agenda. Bike lanes are a major point of interaction and collaboration between the two organizations. Importantly, however, it is not just forces of government and advocacy non-profits that have been propelling this shift toward a vision of 'complete streets' and bicycling integration via bikeways. The opinions of cycle commuters that I encountered during my fieldwork mimic the viewpoints of the bikeways debate found in planning circles. Opinions against bike lanes tended to re-iterate many of the vehicular cyclist concerns—that bike lanes offer a false sense of security, and/or they contribute to the perception that bikes don't belong on the (car-centric) road— but an overwhelming majority of opinions favored bike lanes, even in spite of an acknowledgement of such concerns. In other words, for the City of Boston, street and bicycle advocates, and everyday commuters alike, the creation of bike lanes has become a favored strategy to encourage more cycling in the city; and encouraging cycling in the city has become one of the favored strategies toward realizing the ideal of Complete Streets. In this way, bike lanes are one of the most visible signs and symbols of the transforming imaginary of urban streets and its coalescence in the everyday environment of Boston.

The Essential Challenge for Bicycle Integration: Safety

At the heart of the bicycle transportation philosophies, discussions, and strategies aimed at integrating cycling as a viable transport mode and the emergence of the Complete Streets agenda are issues of safety in the city. Although factors such as gender and age have been found to correlate with perceptions of what constitutes a dangerous biking environment (and conversely what factors increase cycling safety) bicycle transportation researchers in the U.S. and U.K. have found that concerns over perceived risk and/or danger posed by motor vehicle traffic is one of the weightiest, if not *the* weightiest, factor cited by cyclists and non-cyclists alike in decisions about route choice, facilities preference, and/or whether or not to ride a bicycle for transportation at all (Emond 2009; Forester 2009;[17] Horton 2007; Krizek et. al. 2004; Parkin 2007; Skinner and Rosen 2007, fieldnotes and interview transcripts 6-30-10, 7-2-10, 7-30-10). As one bicycle commuter I interviewed said, "I have had at least five friends who have been hit, you know, by cars. So that initially just freaked me out. It took me a long time to really do it [bike commute]. [chuckle]" (interview transcript 7-30-10). Concern about the safety of one's body is a very real barrier to the encouragement of cycling as a viable transport mode.

The act of cycling generates crash and death rates that have gained attention at federal, local, and individual levels (Krizek and Roland 2005; e.g. Freedman 2011; Menino and Freedman 2010; fieldnotes 6-20-10, 6-26-10, interview transcript 7-2-10). The Boston Bikes EMS Crash data map shows that there were 582 bicycle crashes in

[17] Also, see Forester's website more generally at http://www.johnforester.com/.

Boston between October 2009 and October 2010.[18] Thus, the topic of safety has had a central position in bicycle transportation conversations and efforts to mitigate risk.

In Boston, "Mayor Menino has made safety the cornerstone of the Boston Bikes agenda" (Freedman 2011). In support of this claim, Boston has held two Bicycling Safety Summits in 2010, is currently conducting a bicycle crash survey, actively distributes safety information, has created penalties for car-dooring cyclists, and is installing high visibility street coating at high-risk locations, among other measures (Freedman 2011). More generally, bicycle transportation researchers in the U.S. and elsewhere have spent a considerable amount of energy on attempts to calculate risk factors, to predict the influence of bike facilities (such as lanes) on cycling safety, to track cyclists' and non-cyclists' perceived danger in different street environments, and to continue to vehemently debate the issue (e.g. Forester 1971, 1977, 2001, 2009; Haake 2009; Krizek and Roland 2005; Parkin 2007; Pucher 2001; Pucher and Buehler 2007; Reynolds et. al. 2009). At stake for everyone is a fierce concern for the protection of lives and bodies, but interpreting what this means in theory and action is a messy ordeal.

Vehicular cycling arguments are based on a concept of safety that engages at the points of law and rationality. For example, Forester painstakingly tries to show how cyclists' perceptions of vehicular danger is well out of proportion to the actual danger posed by vehicles (1971, 2001). He states:

> Many bicycle riders fear that life on the highway is unregulated competition for roadspace, in which might makes right. They fearfully compare 200 pounds of fragile cyclist against 4,000 pounds of unfeeling car and conclude that it is pointless for the cyclist to have equal rights--or any rights, if they are logical about their theory--because in a collision the cyclist always loses. These people

[18] This map can be found at: http://www.batchgeo.com/map/3654372f90062f71097944c69473117d. It has been updated through 7/31/11, for a total of 859 crashes since October 2009.

> confuse physical strength with legal right. The motorist who smashes a cyclist by an illegal action is liable to go to jail and pay heavy damages (1971:152).

As this excerpt from his manual suggests, Forester wants bicycle commuters to rationalize that they are protected by their legal right to share the road. This point of view paints the issue of road safety as one essentially about law. All elements working as they should, vehicular cycling logic rests on the imperative that the rules of the road should, and will, protect cyclists. Changing these rules by creating bike lanes, according to this perspective, threatens this safety.

Vehicular cycling arguments against the bikeways approach target flaws in bikeway design logic. Haake (2009) outlines how, if painted road lines are taken to be the rule, they actually increase road situations known to be more hazardous for cyclists, such as intersections. According to Haake, not only do bike lanes fail to address intersection situations, which is thought to be the most problematic road condition for car-bike integration (quantitatively expressed in transport studies and qualitatively expressed in my discussions with cyclists— I received many warnings about particularly problematic intersection locations in Boston (interview transcripts 6-16-10, 7-2-10, 7-7-10, 7-30-10), but bike lanes actually work to produce more intersection scenarios by charting along drive-way areas and creating more separated crossings when they link to paths. Furthermore, Haake (2009) points out that the marginal road areas that get turned into bike lanes often do not receive the same maintenance and funding as the rest of the road, so they often accumulate debris and wear that block the passage of bicycles, further instating bicyclist marginalization.

Vehicular cycling arguments against the bikeways approach also target the irrationality of the fear that leads people to want separate road space. Forester draws on

crash and collision statistics to bolster his point that cyclists' fears of sharing road space with motor-vehicles are unfounded (1971, 1977, 2001). For him, the amount of car-bike accidents are insignificant compared to the level of self-inflicted cyclist accidents. Thus, the number one safety strategy for vehicular cyclist proponents is not facilities-based, but about exposing and treating cyclists' ignorance (Allen 1981; Forester 1971; Haake 2009. "[M]ost car-bike collisions," concludes Forester, "are caused by cyclists of low skill committing the most elementary kinds of mistakes: disobeying the law..." (1971:152-153). Therefore, cycling is not thought of as a transport mode available to everyone, but rather, for the safety of everyone, cycling should only be available to those who dedicate time to knowing the laws and to developing the specialized skills and techniques of road riding. In other words, the vehicular cycling position is decidedly narrow-minded and uninclusive. It entirely elides affective and bodily experiences of threat and unpredictable occurrences that are all part of the street environment, and is seated in a privileged vantage point that assumes and requires the sameness of bodily capability, preferences and personality, and accessibility to resources.

The strongest critique waged against the vehicular cyclist mindset by bikeways proponents is that it is exclusionary. Pucher (2001) points out that cycling trips have remained fewer than 1 percent of urban journeys in the U.S. under the reign of the vehicular cycling mentality. The 2010 Bicycling and Walking Benchmarking Report (Alliance for Bicycling and Walking 2010) finds a mere .5 percent of Americans bike to work. These numbers support the position that the vehicular cycling approach does not do much to encourage an increase in the overall proportion of trips by bike, to encourage people to use bicycles for transportation purposes, or to create a more inclusive space that

feels safer to engage in non-motorized forms of mobility— goals that are at the forefront of the bikeways paradigm. Instead of an appeal to law, the bottom line for cyclists' safety within a bikeways framework is safety in numbers (e.g. Pucher and Buehler 2007; Pucher et. al. 2010; Reynolds et. al. 2009; fieldnotes 6-20-10; interview transcripts 6-16-10, 6-30-10, 7-2-10). These sentiments were expressed by many of the utility cyclists I spoke with. For example, one research participant said the following:

> [Boston as a city, or as an environment] needs to be inclusive of especially people who already don't feel comfortable biking and people who don't feel comfortable biking without a bike lane. So I think there's just already this overwhelming argument for reaching out to more people and including more people in the cycling culture by making bike lanes. … One of the things that [effects] the safety of cyclists the most is how many cyclists there are. I think that anything that gets more cyclists out on the road is of tremendous benefit to all other cyclists (interview with utility cyclist/bike advocate 6-30-10).

In sum, bike lanes are seen to encourage more cycling by being inclusive of a wider range of people. This, in turn, creates a safer street environment, which then works back into growing the community of Boston cyclists.

Thus, the 'streets for all' mantra that undergirds the bikeways perspective of cycling integration and the creation of bike lanes on city streets is a new response to issues of cyclists' safety. This new strategy stems from a different conception of safety itself. The problem of safety from a bikeways perspective is a social justice issue about the recognition and accommodation of diversity. Bikeways advocates posit that most people do not have the skills, access to develop the skills, or ability to take the risk to cycle amongst cars (e.g. Anne Lusk in Mapes 2009:221-222; Pucher and Buehler 2009, interview transcript 6-30-10, fieldnotes 6-26-10). Bike lanes, it is argued, make the street a more equitable environment.

In alignment with the bikeways conception of, and strategy for, safety, Boston Bikes was developed to "increase cycling safety around Boston through the use of marked bike lanes and various educational campaigns" (Mayor's Office 2010). But, in the words of Mayor Menino, "Boston Bikes is about more than bicycling; it is about our collective community" (Menino and Freedman 2010):

> [It] is about the need for a shared, common respect amongst everyone who uses Boston's roads… We have to come together and recognize that everyone is responsible for keeping our roadways safe and that we all have the right to safe passage through our beautiful city" (Mayor's Office 2010).

In this way, safety from the vantage point of the bikeways paradigm is strongly linked to the creation of an inclusive urban streetscape, not only for cyclists, but for people of all different needs, abilities, and desires. The incorporation of bike lanes is part of this larger project.

Although my fieldwork was by no means exhaustive, I found that the majority of planners, advocates, and research participants in my study favor strategies for bicycle transportation integration that fall within the spectrum of a bikeways paradigm. The Boston bikescape is a prime example. Once known for its hostile biking environment, a transition from the vehicular mindset in the early 2000s to a full fledged commitment to a complete streets agenda by 2010 has spun Boston's approach on its head. Bicycle planners and advocates now work together in a joint vision to bike-lane Boston, carving out specific space for bikes, and moving towards safer 'streets for all.'

Since the vehicular cycling perspective does not work toward the broader ideal of an inclusive street and city space that is articulated through the complete streets way of thinking about urban journeying that is prominent today, the vehicular cycling paradigm has fallen to the dominance of bikeways believers. Unpacking the bikeways imaginary of

urban street-space and how this translates into bike lane promotion and the everyday life of cycling the city is the task of the next chapter.

Chapter Three

Cycling Safety and Inclusivity

The last chapter outlined the historical conditions from which the inclusion of bike lanes on U.S. city streets emerged. In essence, the existence of bike lanes are material manifestations of the bikeways imaginary of bicycle transportation integration, which is intricately woven within a fabric of a 'complete streets' mindset popular today. This chapter will delve more specifically into the bikeways imaginary that undergirds the advocacy, creation, and use of bike lanes specifically. In this chapter, bike lanes are interpreted as mechanisms that participate in a tripartite discourse about safety, inclusivity, and legitimacy. I explore how bike lanes are employed in urban design and imagination toward a certain vision of a *safe street* and city that is *linked to an ideal of social inclusivity. This ideal is built on preconceptions about the establishment of social equity and justice through the rendering of cyclists as (legitimate) subjects.* I then look at how this understanding of transport cycling integration compares with the everyday lived experiences of cyclists in Boston. While cyclists seem to be gaining more visibility, they do not seem to be experiencing less fear. In consideration of this disjuncture, I am led to ask fundamental questions about the connection between bike lanes and social equity, and about the rights-based logic of social justice that the bikeways imaginary assumes and deploys.

In the summer of 2010, 1.65 percent of total trips in Boston were made by bike,[19] yet the City of Boston would like to reach at least 30 percent (Freedman interview Transcript 6-23-10). This would require a cultural shift within Boston's urban milieu, where bicycling would become integrated into the mainstream.[20] To support claims for the possibility of realizing such an ideal, bike lane advocates often point to places in Europe, such as the Netherlands, Denmark, Germany, Sweden, and Switzerland, that are seen to have actualized this way of life. This is seen in both transportation literature that advocates for bikeways (e.g. Pucher 2001; Pucher and Buehler 2007; Pucher et. al. 2010; Tolley 1997), as well as through my fieldwork**.** As one participant said during our interview, "… I was in Europe last year...and [my friend and I] went to the grocery store…The store had practically no [bike] parking [left], and all of these elderly ladies arrived on their bicycles.... You still don't see anything like that" (interview transcript 7-7-10). Another participant said:

> I was in Sweden for a summer, and they have cycle tracks on all the roads, and that is amazing. They also have… these air pumps along the way. Just public ones. It's pretty cool. And then... within the heart of the city where the streets are really narrow, they just close it off to cars, so in the morning time you just would see this rush hour of bikes, and people biking. So that is really, really cool (interview transcript 7-30-10).

The inclusivity and bike-friendliness of the European urban environments that these quotes portray— by the image of elderly women cyclists in the first, and extra care and attention toward cycling needs through the public availability of air pumps, cycle tracks,

[19] Statistics such as .5 percent of work commutes in the U.S. are made by bike (Alliance for Biking and Walking 2010), is evidence that the U.S. at large is in a similar position to Boston.

[20] This is also noted by Boston's Bike director, Nicole Freedman in my interview with her and in a 2009 New York Times article (Zezima 2009).

and bike-only streets in the second— are visions for what U.S. streetways *could be*; they are potentialities. Even with bike lane construction and a marginal increase in cyclist population thus far, the safer, more inclusive streetscape modeled by bike-friendly European cities that have flourishing cycling transport rates and bike boulevards has yet to manifest in Boston (and in the greater U.S.).

Safety

For many cycling transportation scholars, advocates, and bike commuters, what lies between the current state of urban bicycle transportation and what could be (i.e. European "realities") is the issue of safety for cyclists (Horton et. al. 2007; Skinner and Rosen 2007; e.g. the preoccupation with this topic in the transport literature). Bike lanes are mechanisms employed to this end, but to understand how they work in this way is more complex than one might at first think.

Cycling safety is multi-dimensional. Livable Streets blogger, Steve Miller (blogpost 1-25-11), usefully provides a framework for understanding safety (which he gets from none other than a Dutch cycle blogger). He articulates three kinds of safety: actual safety, subjective safety, and social safety. Actual safety has to do with the actual likelihood that a cyclist's body will be involved in an accident, and is the notion of safety central to the vehicular cycling perspective. In actuality, bike lanes, as strips of paint on the ground, do not protect cyclists' bodies from the physical threats of the road. In this way, the vehicular cycling perspective makes some good points. What seems to be the greatest physical danger for cyclists on the road is precisely what bike lanes do not

protect against. Tables show (Forester 2001) that falling is the highest physical danger to cyclists, followed by car-bike collisions that occur during turning and crossing points (such as intersection scenarios), which are areas that bike lanes generally do not cover (2001:8-9).

Further, bike lanes can complicate cyclists' physical safety by guiding cyclists to ride in certain areas of the street. It is a hot debate, however, whether this ultimately results in more or less safety for cyclists. For example, one research participant felt that bike lanes were "sort of an oxymoron…because really you have to be on the outer edge of a bike lane to be safe, so what would make 'em safer is… if they would get rid of all the cars parking on the streets, but I know that would be really hard to do" (interview transcript 7-30-10). On the other hand, another participant felt that overall safety was increased by bike lane presence. He said:

> Are they [bike lanes] safe? Yes, I think they are. Really the main argument against bike lane safety is the dooring situation, of course. And I think this is a highly contested subject, especially in this city, but given the choice between a bike lane and no bike lane, a bike lane is going to be a safer environment for a cyclist, even though it encourages them to ride in the door zone. Because I think that most cyclists will not ride in the door zone and most cyclists will actually ride further away from cars with a bike lane than they would without one…(interview transcript 6-30-10).

These responses demonstrate that bike lanes are perceived to have an effect on cyclists' physical safety, but whether it is for better or worse is hard to say. Either way, this supposes that Boston cyclists use bike lanes. Do they?

Comparisons between the Boston Bikes map, a 2010 bike lane map obtained from the City of Boston showing existing and proposed bike lanes, and ten participant journey maps (see Appendix for a reproduction) conducted along with interviews and participant-

observation suggest that the overall sentiment among cyclists in Boston is that they may use a bike lane if it is there, but they don't go out of their way to use them.[21] However, variance in how riders negotiate streets and journey pathways complicate this assumption. A breakfast conversation I had with a group of transportation cyclists illuminates differences in preference and comfort. The conversation went like this:

> P1: I like to be in the road, more away from car doors and sometimes I just ride in the middle of the road.
> P2: Yea, I noticed that when we road to Trader Joe's the other day. I like to ride more in the middle of the [car] lane, but I feel awkward about it. I thought I was the only one that did that.
> P3: I like to hug the side, but I check to see if there is a person in every vehicle. If there is, then I go around them.
> Me: I have no problems taking the [car] lane and I will often move over to claim space if I see a car double-parked up ahead.
> P2: I do that too. Sometimes people get mad at me, but what am I supposed to do, get run over (fieldnotes 7-16-10)?

This conversation, as well as data collected through journey accompaniments and video recording cycling journeys, indicate that, due to obstructions in the bike lane, other road conditions, and rider preferences, actual bike lane use in Boston may very well be sporadic at best. As bike lanes do not provide a physical barrier to road obstacles, it is hard to say whether they are helping or hindering the physical safety of cyclists; however, there is more to bicycling safety than a moment of collision.

Bike lane advocates know this—and this is their main point. From the bikeways perspective, bike lanes are not so much mechanisms to protect the physical safety of riders as much as they are there to effect perceptions of safety. In other words, bike lanes are foremost an attempt to intervene at the level of subjective safety. Subjective safety,

[21] Please note: most of the cyclists that I conversed with in-depth were already cycling before Boston initiated their push for bike lanes, and thus skews the results of my findings toward a certain threshold of road-riding comfortability, as most Boston streets do not have bike lanes. Therefore, Bostonians that have incorporated utility cycling into their lifestyle at present must have at least a certain tolerance for cycling without lanes.

according to Miller, is how safe one feels on the road in terms of proximity to vehicles, bodily fitness, familiarity with cycling, etc. (blogpost 1-25-11). Bike lanes work to make people *feel* more comfortable, something that advocates are aware of. From this point of view, it is the perception of safety that drives the potential 'reality' of safety that is sought after. A professional cycling advocate stated it this way:

> You hear over and over again, 'Man, I'd really like to bike if there were bike lanes. I'd feel way better if there were bike lanes.' And it's not like a strip of paint on the ground makes people safer, it's just that they FEEL safer so then they go riding, and then there DOES seem to be some indication that more people riding DOES make them safer, so it's like, you trick 'em into thinking that they're safer, and then they become safer. So I don't know what the ethics of that is [chuckle] but um, it's not like a trick, it's more like you put them at ease and then more people do it, and then they *want* to do it (interview transcript 6-16-10).

In other words, bike lanes provoke feelings of safety that then encourage more people to cycle, which generates more overall cycling and safety. The nub of this logic, as demonstrated in the above quote, is inclusivity. Safety becomes a matter, not primarily of individual bodies, but of collective inclusivity.

Safety Turns Inclusivity Turns Legitimacy

Inclusivity plays an important role in the current safety strategy in which increasing cycling numbers is seen as the best way to increase safety. Interestingly, I found that these sentiments and ideas about bicycling inclusivity went beyond immediate concerns for the body. Most research participants I engaged with communicated very genuine sentiments of care and a desire to provide a cycling environment that would be more inclusive to less confident cyclists for the inherent value of such an environment. As most of the utility cyclists that I interviewed were seasoned cyclists, their collective

perspective was a concern for attending to, and including, others. For example, one utility cyclist I talked with said this:

> I feel like they [bike lanes] don't have such an effect on me because I'm not going to be more likely to cycle more because I already bike to the fullest extent...I don't ever walk, I only bike, and I've only ever biked since living in Boston. They have an effect on people that are not as experienced of cyclists. Bike lanes will make it easier for someone to feel comfortable on a bike (interview transcript 6-30-10).

And, in fact, two research participants specifically hoped that my research would find out if bike lanes actually do have an effect on less confident cyclists' comfort on the road and on the overall size of the cyclist population.

Presently, it remains unclear if there is a definite link between the increasing cyclist population in Boston and the creation of bike lanes specifically. Although research participant perceptions varied regarding whether the Boston cyclist population has actually increased, Boston Bikes reports in their 2009 annual review that bicycle ridership in Boston has increased by 43% between 2007 and 2009, and the 2010 annual update given in February of 2011 reports Boston bike commute ridership is at 2.11 percent of the transport mode split. Some transportation literature supports the interpretation that this increase resulted in part from the implementation of bike lanes (Krizek 2006; Krizek, Barnes, Thompson 2009; Pucher 2001, Pucher 2007; Pucher and Buehler 2009; Pucher, Dill, and Handy 2010; Reynolds et. al. 2009), while other research questions the connection (Emond 2009; Moudon 2005; Parkin 2007). Whether bike lanes are or are not a contributing factor in increasing bike commuting numbers is not what I find most intriguing, however. It is how this discourse of inclusivity moves the discussion of safety from the realm of the "subjective" to the "social" (to use Miller's terms). My research indicates that many transport cyclists, despite skill or need, simply *feel* more

comfortable and less at risk in an environment that is more welcoming to all. In this way, the conversation shifts from being one centered around risk to the physical body and becomes one about the legitimacy of the biking body.

The function of bike lanes is discussed as an attempt to create the perception of a protected space for cyclists' bodies on the street. Bike lanes are understood to function this way through their legitimization of the biking act. In other words, what protects cyclists in bike lanes is not "the strip of paint on the ground," but what the strip of paint implies. For example, one research participant said, "I like bike lanes not because I think that they're actually safer, but because they remind the cars that we are supposed to be there" (interview transcript 7-2-10). Bike lanes are reminders of a right that cyclists have to their use of urban space, and this is how people then presumably feel safer.

In this way, bike lanes become interventions into what Miller would consider the "social" realm of safety. Social safety is, as stated by Miller:

> The degree of anxiety about being the victim of violence while on the street caused by a mugger, an act of road rage, or even a random act. The level of insecurity about how you will be treated by drivers, or police, as a result of your appearance, gender, race, language, immigration status, poverty, or other attribute (blogpost 1-25-11).

Bike commuters, a marginal population, feel insecure about how they will be treated on the road. As Miller points out, it is important to acknowledge dimensions of marginalization for cyclists that exist beyond the act of cycling in the city, but that are nonetheless also implicit in the experience of it, such as age, gender, race, class, etc.

A cycling body moving down the street is also simultaneously inscribed as a female body, or a male body, or an old body, or a black body, or a white body, or a latino body, or a healthy body or a ravished body, a working class body or a professional class

body, ad infinitum. For example, one research participant describes how she is treated differently when she bike commutes in a dress. She says:

> I found an interesting thing. When I wear a dress, I get more respect. Most of the time. I've had one experience where a guy was yelling at me abusively about being out there wearing a skirt ..., but it tends to be that when I'm wearing a dress more people stop for me, which I find fascinating...and I don't know if respect is the right word, but more willing to yield [laugh] ... (interview transcript 7-2-10).

In sharing her experiences, this Boston bicycle commuter displays how cycling in the city intersects with how she is treated based on gendered norms. She is vulnerable not singularly as a cyclist, but simultaneously as a woman, presumably as a raced, classed, aged woman at that. Thus, Miller's point about social safety is quite poignant. Cycling safety is not merely an issue of modal method, but is intricately woven within the fabric of socialization and power relations in the city.

The plague for bicycle transportation integration in the U.S. has not only been the perceived physical risk, but also the stigmatization that cycling transportation has accrued over the years. Bicycles have been perceived as recreational at best, childish, a rebellious act, or a utilitarian option for the poor, at worst (Aldred 2010; Blickstein and Hanson 2001; Carlsson 2010; Furness 2005a; Furness 2005b; Horton 2006; Horton 2007; Horton, Rosen and Cox 2007; Skinner and Rosen 2007**)**.[22] Furthermore, the bicycle commuting lifestyle puts demands on the body and its appearance that make it harder to achieve standing expectations of professional or appropriate appearance and demeanor that are also inherently classed, raced, gendered, aged, etc. (fieldnotes 6-25-10; interview

[22] This idea has been investigated more in a British context than in the U.S., but the situations are similar. Also not included here is Aldred's forthcoming work on cyclists' identities and stigma, "Incompetent, or too competent? Negotiating everyday cycling identities in a motor dominated society" (http://cyclingcultures.org.uk/blog/?p=1024).

transcript 7-7-10; Cupples and Ridley 2008; Horton 2007; Horton et. al. 2007). As one research participant eloquently put it:

> I think that everyone is capable of becoming a cyclist and not necessarily everyone is motivated to become a cyclist. I think there's a lot of fear that prevents people from becoming a cyclist. There's a certain element of stigma to the idea of being a cyclist as well. I mean, like 'ah, I'm gonna get to work and I'm gonna be all sweaty', or 'that's something that hippies do, and I'm dignified. I deserve a car'. There's a lot of class dynamics I think with owning and operating an automobile. It gives you a certain amount of dignity and also power that people seek. That everyone seeks to some extent (interview transcript 6-30-10).

It can thus be understood how the act of bicycle commuting extends beyond the marginalization of a transport mode and reaches into other realms of daily life in the city. The project of mainstreaming bicycle transportation integration has had to battle these everyday concerns and logistics, as well as ingrained assumptions and habits of living--automobile dependence and infrastructural hegemony, perceived social dissidence, assumptions about class markers, feelings about the sweaty, working body, and ideas of what is desirable and possible for life in the city.

Bike lanes are an attempt to legitimize bicycling in the city by sectioning off space and making cycling more visible, but in doing so, they are an attempt to legitimize more than that. As bicycling transportation is situated within a web of lifestyle factors related to gender, race, class, age, etc., bike lanes become not only statements for modal method inclusivity, but inclusivity writ large. Bike lanes are spaces for the accommodation of difference. Bicycle transportation research shows that women feel less safe riding next to cars than men, and are less likely to bike if there are not specified lanes because of this perception of risk (Emond 2009; Krizek 2004). Children and the variedly able do not always have the capability to ride at high speeds to keep up with traffic. Researchers and bike lane advocates have also acknowledged economic barriers

to accessing bicycles that could cruise at car speeds due to maintenance issues or quality of the machine (Horton et. al. 2007). Bike lanes are a response to these situations with the intent to expand the population of people for which cycling is a viable option (Pucher and Buehler 2009, my research). In this way, advocating for bike lanes is advocating for a broader urban milieu of acceptance and inclusion. Bike lanes, from this perspective, become mechanisms designed to accommodate for differences of ability, preferences, and lifestyle demands, and thus mitigate the tension between hegemony and diversity in the city. Cycling integration becomes a project toward social equity.

Making Cycling Legitimate Through Visibility?

Efforts toward social equity can take many forms. Bikeways logic implicitly understands bike lanes as a discursive intervention that responds to our constructions of legitimacy—legitimate behavior, legitimate bodies, legitimate identities—in the city. *In other words, bike lanes generate and contribute to a rights-based discourse of social justice and safety in the city*.

A rights-based framework of social justice is the common one we are familiar with here in the United States and many other places. It is a *representative* notion of social justice, where rights are designated, protected, and mitigated based on a person or group's ability to become recognized by the whole (or the authoritative body empowered with the role of distributing justice). Judith Butler calls this intelligibility. One must be intelligible to have rights, to be considered legitimate, or conversely to have rights or legitimacy taken away, and this is ultimately important for Butler because our access to

the human—to a livable life—hangs in the balance of our intelligibility. In her book, *Undoing Gender*, she says:

> To find that one is fundamentally unintelligible (indeed, that they laws of culture and of language find one to be an impossibility) is to find that one has not yet achieved access to the human. It is to find oneself speaking only and always as if one were human, but with the sense that one is not. It is to find that one's language is hollow, and that no recognition is forthcoming because the norms by which recognition takes place are not in one's favor" (2004a:30, 218).

The import of this idea for bicycle transportation integration is that bicycles need to be rendered intelligible as transportation in order that cyclists become legitimized on the street, providing them access to road rights and safety. In other words, cyclists need to become *cycling subjects*, set apart from an identity and subjectivity as motor vehicle drivers, to have access to their own rights *as cyclists,* and obtain accommodations for this type of transport mode and lifestyle. This is to say, cyclists must be rendered visible; they must *be seen*.

One research participant put it this way:

> …I think that visibility is hugely important. Visibility and legitimacy. Visibility has made those of us who are not the crazy eighteen-to-twenty-four-year-old-boy on their fixed bike darting in and out of traffic being stupid, more comfortable and therefore more visible. And that's important because… they're not the kind [of cyclists] who are going to make drivers think cyclists should be here and that's important to me... (interview transcript 7-2-10).

In this quote, this bike commuter expresses how the visibility of bicycling is intricately connected to its legitimacy as a transport mode. For her, making space for the potential inclusion of different kinds of transport cyclists is tied to making cycling visible, which works to establish legitimacy for cyclists. This, as she states, is important to her; it is important to her that drivers recognize that cyclists '*should* be here,' on the street and in the city.

According to bike commuters who participated in this research, bike lanes make cycling more visible. They "remind drivers that [bicyclists] are supposed to be there" (interview transcript 7-2-10), and they "…let[] the car know that when they open their door, they're opening their door into someone else's space" (interview transcript 6-30-10). Expressions like "supposed to be there," "should be there," and "someone else's space," strongly display cyclists' concerns with legitimacy. Bike lanes are seen to contribute to creating legitimacy for cyclists both through being visible markers, and as claims to the use of space. In a word, they provide cyclists with *representation*, an avenue by which to be known, an avenue by which to become a *cycling subject*. Thus, bike lanes are essentially understood by cyclists and advocates through a rights-based, or representative, discourse of social justice.

Prominent geographer and theorist of urban social justice, Don Mitchell, conceives of social justice in the same way, and expounds on what he views to be the inherent interplay between social justice and the city. In his seminal work, *The Right to the City: Social Justice and the Fight for Public Space* (2003), Mitchell outlines his conception of social justice that follows a dialectical "logic of representation" that "centers on the right of groups and individuals to… represent themselves to others and to the state—even if through struggle—as legitimate claimants to public considerations" (2003:33). In this way, "a *space for representation*—a place in which groups and individuals can make themselves visible, is crucial" (2003:33). "Representation, whether of oneself or a group, demands space" (2003:33). It is precisely in the "public" spaces of the city that representations and negotiations of legitimacy are hashed out. For transportation cyclists and advocates, the street is such a space.

To follow Mitchell's theorizing further, the street is such a space, not because it is inherently so, but because a group has made it so. In Mitchell's terms, he would call this a 'public' space. "[W]hat makes a space public," says Mitchell, "…a space in which the cry and demand for the right to the city can be seen and heard--is often not preordained 'publicness.' Rather, it is when, to fulfill a pressing need, some group or another takes space and through its actions makes it public" (2003:35). Thus, from Mitchell's perspective, in order to obtain and exercise rights to the city—to lead a *legitimate* existence and way of life in the space of the city—a group must claim their right. This "claim" is understood for Mitchell as a spatial gesture; it is the taking of space. To use Mitchell's terms, bikeways logic understands bike lanes as a "cry and demand for the right to the city;" bike lanes are the taking of space and making it public, and they are acts of representation that claim a 'right to the city'—legitimacy—for cyclists. Bike lanes make transport cyclists intelligible as cyclists. But what is this legitimacy qua visibility doing for cycling safety in Boston?

Safety Concerns: What meets the eye doesn't meet the body (and vis. versa)

Cyclists are ambivalent about bike lane safety. When asked about their feelings about bike lanes and cycling safety, research participant responses were conflicting. This ambivalence is situated in the disjuncture between the increased visibility of transport cycling on Boston streets without a decrease in perceptions of physical threat. For example, one research participant described her experience of the Commonwealth Ave. bike lane like this:

> …[T]he bike lane on Comm. Ave. does not feel safe. I don't care how stupid you are. It's not safe. You know it's not safe, especially when you find cars in it…and motor scooters because they're always in the bike lane as if they belong…

And then later in the interview:

> I think I feel safer on Comm. Ave now that the bike, ah, one of the things that has definitely personally impacted me is the continuation of the bike lane on Comm. Ave. through the BU bridge intersection. …Having that go through as a green stripe, you know, a painted in bike lane so the cars actually know that you're there. ...it's still a ridiculously stupid intersection... but having the bike lane there does make me feel substantially more secure. The bike lane on Comm Ave.'s nice, but whatever. I have alternate routes around it and was fine without it" (interview transcript 7-2-10).

Another research participant tracks back-and-forth about her feelings about bike lanes throughout our interview. She says, " I think they're helpful. I like it better when they're there," but then later stated:

> The public sort of supposes that you are therefore confined to the bike lane and sometimes other people park in it… You know, sometimes they're [bike lanes are] confusing, [and] that makes it almost not worth having them… I could take it or leave it. I think it's fine, but I don't like being too close to the cars. I'm always at the edge of that thing anyway…" (interview transcript 7-7-10).

These examples illustrate how the experience of using bike lanes is contradictory. Cyclists' reflections describe how, at times, they feel more secure on the road through the use of a bike lane, but at other times, bike lanes produce more feelings of confusion or uncertainty. In other words, bike lanes feel both safer *and* less safe.

Here, again, it is useful to think about the multi-dimensionality of what it means to be 'safe' and 'at risk' in our everyday lives. On the one hand, cyclists are gaining more visibility and representative legitimacy as bike lanes increasingly appear on the landscape and potentially increase ridership. This could contribute to feelings of increased safety while using a bike lane, such as the example given by the first respondent, where she felt more safe crossing the notoriously dangerous Comm. Ave. intersection in a bike lane. On

the other hand, what is ultimately at stake for cyclists is the safety of their bodies, including the risk this poses to the social relations in which their bodies participate. Bike lanes aren't doing much to increase these levels of embodied safety. Despite an increase in the visibility of cycling transportation on the urban landscape, transport cycling ridership is still very low, and cyclists experience threats of invisibility or over-display, driver rage, crowding, environmental obstacles, oblivious cell-phone-sucked pedestrians, and even flying objects hurled their way, in sporadic and unpredictable ways on a daily basis (interview notes 6-30-10, 6-30-10, 7-2-10, 7-7-10; fieldnotes 6-26-10).

One transport cyclist that has been cycling since the 1970s recounts some of her recent interactions on the street like this:

> The cars all hate me. The pedestrians are completely oblivious…It's still very dangerous. I wouldn't say that anything has improved in terms of courtesy...It's not like one hundred percent of them are horrible. But I think its preponderance. Just don't care. Or, its simply like when you're coming on a bike, and the driver wants to turn into traffic and they're only looking left and…they only turn their head when they accelerate to turn, and you can maybe get their attention, but mostly you have to stop, you know, wait for them, because they just don't think of it (interview transcript 7-7-10).

This bike commuter feels hated, not cared for, and invisible. A response from another transport cyclist describes being literally squeezed between careless drivers and large pot-holes. She says, "Road surface is a huge problem in this town. ... and it's hard here because it freezes and thaws and freezes and thaws. I totally get that, but it's an issue for cyclists because there will be huge ruts and a car next to you and you'll be like, 'AHHH!' (interview transcript 7-2-10). Understandably, this is a very scary and dangerous situation. I too experienced a dose of exclusion when riding in Boston during my summer fieldwork. One night I was pelted in the face by a plastic soda bottle by someone in a passing vehicle. It hit me right smack on my left cheek bone and left a considerable

bruise. [23] Furthermore, some cyclists feel that there has been an increase in intentional harassment by drivers who run cyclists off the road, or pretend that they are going to, since the implementation of bike lanes and more cyclist visibility (post-fieldnotes 9-27-11).[24] These accounts indicate that, despite increased visibility and legitimacy (in a rights-based context), for all intents and purposes, it doesn't really matter.

These examples demonstrate the embodied risks, both physical and emotional, involved in cycling the city. Innumerable elements of automobile hegemony, bicycle stigma, and social conditioning play a role in the unfolding of these daily experiences. While transportation cycling is supposedly gaining more ground, when it comes to immediate embodied experience on the road, the streets of Boston can still feel like quite an exclusive and risky place for cyclists.

---

[23] These kinds of occurrences in which bicyclists are targets of harassment on the street are regular, not only in Boston, but in many places in the U.S. For example, thirty-five out of forty-one respondents in McCarthy's (2011) study reported verbal and/or physical harassment by drivers in Charleston, SC.

Or, for example, it was apropos that the day after I shared the idea for this part of my thesis with one of my housemates in Lexington, KY, another cycle-commuter, she came home bursting with a story to tell me. "Sam", she said, "I really have to tell you this story. Today I was on my bicycle riding to school and this guy yelled out the window of his car, 'HEY! *Nice* socks!'[sarcastic tone]. This guy was insulting my socks! I really like my socks, I made them, but one sock is shorter than the other and I'm self-conscious about that. Maybe that's why he didn't like my socks? I don't think there's anything wrong with my socks, I wasn't even thinking about them, in fact I was just really enjoying riding my bike, but then this guy saw me and said this mean thing to me. It's like what you were saying. By being visible on my bike, my socks became open to critique."

Or, for example, I once rolled up to a stoplight in Lexington, KY beside a man in a car who leaned over to me and said something like "Hey beautiful, I like watching you ride your bike." Not to be too rude or presumptuous, I smiled and gave him a little head not back. I suppose the man felt he wanted to be more clear about what he meant, because he followed with "What I mean is, I'd really like to be your bike." I had to sit there disgusted until the light changed.

OR, most recently in Boston (January 26th, 2012 to be exact) I rolled up to a light at the corner of Martin Luther King Blvd. and Warren and had to endure a man's lip-smacking and derogatory comments about my bicycling ass as I was stuck waiting for space to make my turn, which only got louder and louder as I continued to ignore him.

[24] This is similar to a finding that Pain (2000) cites, where homophobic violence is seen to increase as non-heteronormativity becomes more visible.

In this sense, there is at present a disjuncture between what is visible and what is experienced. The streets of Boston *appear* more friendly towards cyclists (i.e. more safe), without actually *being* more friendly. This leaves me in a quandary. What *are* bike lanes doing for safety, then? Let me back up. If we define legitimacy as a specific state of inclusion gained through a rights-based notion of social justice in which an individual or group is imbued with rights to their lifestyle based on their intelligibility, and we conclude that cyclists are becoming more intelligible through bike lane representation, as research participant sentiments indicate, how does this connect to the present situations cyclists experience on the street? In other words, if we take that bicycling *is* becoming a more legitimate transport mode in Boston, what does this legitimacy do for embodied safety? As the examples above demonstrate, not much. In the case of transport cycling, rights do not correspond to safety.

But what if bike lanes are understood in a different light? What if they are actually not claims towards right and legitimacy? If we take that bike lanes *are* working towards safety for cyclists, which an overwhelming intuitive sense from cyclists and advocates point towards, then I am inclined to pursue a different interpretive framework of transport cycling integration that calls into question a notion of social justice and safety that rests on rights and representation. What if we understand bike lanes as contributing to, not so much the intelligibility of cycling, but more to the affective register of the urban milieu, and what if we understand safety and social justice not as a matter of rights and representation, but of symbiosis? The next chapter explores these questions.

Chapter Four

Remix: Bike Lanes as a Strategy for Safety and Social Justice

Bicycle scholars Cupples and Ridley state, "Cycling strategies and the improvement of infrastructure might not…be wholly ineffective, but we should recognize that the effectiveness of such an approach is likely to be 'limited as a consequence of its concentration on the representational'" (Cupples an Ridely 2008:263). However, infrastructural improvements, such as bike lanes, do not inherently imply a "concentration on the representational." Whatever representational work infrastructure does is a result of the associations, purposes, and meanings that we imbue it with. What if we interpret the work of bike lanes in a different light? What if we understand bike lanes as contributing to, not so much the intelligibility of cycling, but more to the affective register of the urban milieu? What pathways toward equity and social justice come to the fore when we understand bike lanes not as territorial rights-claims, but as an affective means to motivate new ways of urban living?

I propose in this chapter to understand bike lanes in the Foucauldian framework of what he terms "security." Security is a particular type of technique of power that works on the population remotely through the event-space of the milieu. In the case of transport cycling, the city—with all its natural and constructed elements, including people—creates the milieu. The population is the people in Boston. Security aims to preemptively intervene through the milieu to affect the population so as to maximize benefit for the greatest number. There is, of course, always a margin of failure, those who will encounter harm. From this angle, the issue of safety begins with fear.

I connect fear, and more specifically cyclists' fear, to the dimension of social in/equality. I explore how the experience of fear, which I understand to be an affective experience of a perceived threat, and risk are impacted by subject positionality in relation in relation to the norm of the population. I explore this theoretical connection between difference, risk, and fear in the context of transport cycling. This analysis shows the discourse of inclusivity, a key discourse of the bikeways strategy for transport cycling integration, to be an important ideological mechanism for the construction of a certain feeling of a 'safe city.'

Inclusivity discourse, which advocates for the inclusion of cycling as an option for travel on city streets and for the inclusion of many different kinds of cyclists, intervenes at the conjunction of subject positionality, perception, probability, potentiality, and embodied reality. It renders cycling safety into a problem of fear and risk, and responds by negotiating difference and normalcy within the milieu. Inclusivity discourse is a project of creating a new norm that, at the same time, maintains multiplicity. It is not about trying to get everyone to move the same way, but about providing a space in which different people can move differently throughout the city within a normal range. It is about what kinds of experiences and environments can be expected or predicted in the city.

In this way, the discourse of inclusivity that was described in the last chapter is understood as an operative in the macro-technology of security in this one. Bike lanes are physical mechanisms of inclusivity discourse; they carry out security. This understanding is at odds with the understanding of bike lanes as territorial rights-claims. From this perspective, bike lanes are not understood as features of a rights struggle that

claim space in the city for an under-represented population of cyclists, or that simply wave the banner for an ideology of a more humanistic way of life, but rather are mechanisms that physically shift the urban milieu, affecting space and bodies.

In the final section, I attempt to apply this Foucauldian-influenced understanding of the bikeways approach to cycling safety and inclusivity discourse to the problem of reaching real bodies in our efforts towards social justice and safety in the city. Cycling safety within the bikeways context provides a productive opportunity to explore this new way of thinking and acting because the problem of cycling safety is directly situated within our bodies, in encounters with one another, as we each traverse the city. There is a timeliness, and maybe even urgency, for this exploration as transport cycling becomes increasingly promoted and popularized as a mode of transport in cities across the U.S. How can we capitalize on the mechanisms at work in our changing streets and cities?

Cycling Safety as Security

As explored in the last chapter, what seems to be the greatest physical danger for cyclists on the road is precisely what bike lanes do not protect against. Categorically, bike lanes don't provide a physical barrier against motor vehicles, unexpected confrontations with pot-holes and other street obstacles, flying objects or derogatory words, or the subjective dimensions that correspond to the likelihood of these events occurring to some bodies more than others. Instead, bike lanes are employed to affect people's *perceptions*.

Bike lanes are employed to affect people's perceptions of how safe it is to cycle on city streets. Consider again this quote from a professional Boston bicycle advocate:

> You here over and over again, 'Man, I'd really like to bike if there were bike lanes. I'd feel way better if there were bike lanes.' And its not like a strip of paint on the ground makes people safer, it's just that they FEEL safer so then they go riding…(interview transcript 6-16-10).

The point of intervention for cycling safety is not the actual safety of bodies, but on increasing people's perceptions of safety in the hopes that this will work back on the actual safety of bodies. In this way, the bikeways strategy for cycling safety concentrates not on what is, but on what *could be*—the 'could be' of bodily harm, and the 'could be' of a safer street and city.

In other words, the bikeways strategy for cycling safety is not located in the realm of the here and now, but in the realm of potentiality. Here, "potentiality" is a technical term. Brian Massumi understands potentiality as "the tension between materially superposed possibilities and the advent of the new" (2002:134);[25] it is the tension that exists between our materialities and our imaginaries, our reality and our ideals, what is and what could be. For example, in the summer of 2010, 1.65 percent of total trips in Boston were made by bike,[26] yet The City of Boston would like to reach at least 30 percent (Freedman interview Transcript 6-23-10). The tension between 1.65 and 30 percent can be understood as potential. Thirty percent of total trips in Boston being made by bicycle is a potential reality that is neither predictable nor necessarily probable—as that level of bicycle commuting in the U.S. is virtually unprecedented—but it is hoped for and possible.

---

[25] While Massumi makes a distinction between potentiality and the virtual—the virtual being a "realm of potentiality" (2002:30), while potentiality is not, I don't think, 'a realm of the virtual'-- for purposes of this thesis, the distinction does not matter. I am concerned with potentiality, and Massumi's theorizing of the virtual sheds light on many interesting and important ideas about the nature of potentiality. For those that are interested in this distinction, however, see p. 134 for a starting point.

[26] Statistics such as .5 percent of work commutes in the U.S. are made by bike (Alliance for Biking and Walking 2010), is evidence that the U.S. at large is in a similar position to Boston.

Proponents of bikeways that see their ideals for a cycling society as actualized in countries such as Germany, Switzerland, and Denmark (as discussed in the last chapter), understand the high rates of cycling in these countries to be due to their developed bike-friendly infrastructure and people-centered design (e.g. Pucher 2001; Pucher and Buehler 2007; Pucher et. al. 2010; Tolley 1997, interview transcripts 7-7-10, 7-30-10). In this way, bike lanes become linchpins in a collective re-imagining of urban street-space that work towards this possibility. It is true that "infrastructural changes do not have direct causal powers and can only enhance safety and enjoyment in a dialogical way in interaction with bikes, bodies, discourses, feelings and emotions" (Cupples and Ridley 2008:259); but what Cupples and Ridley call an "obsession with cycle lanes" by transport cycling advocates is not necessarily "a will to produce a rational spatial order [that] leads to a neglect of affective and embodied dimensions of cycling…" (Cupples and Ridley 2008:259). Rather, my research indicates that bike lanes currently work affectively.

In their current state of implementation in Boston, bike lanes are creating feelings of ambivalence. Cyclists aren't calculating their risk as demonstrated by the vehicular cycling perspective (see chapter one)—but rather, bike lanes affect cyclists' embodied experiences riding on the road. Cyclists' experiences of bike lanes generate ambivalent perceptions of safety. Cyclists feel both safer and less safe. Consider again these contradictory sentiments expressed by one cycle commuter over whether or not the bike lane on Commonwealth Ave. makes her feel more safe. She says, "…the bike lane on Comm. Ave. does not feel safe. I don't care how stupid you are. It's not safe. You know it's not safe, especially when you find cars in it…and motor scooters because they're always in the bike lane as if they belong…" (interview transcript 7-2-10). And then later

in the interview, this participant says that the bike lane on Commonwealth Ave. does, in fact, make her feel safer. The green stripe through the BU bridge intersection makes her feel that cars know that she is there, and this makes her feel more secure (*ibid.*, see previous chapter for a full quote).

This bike-commuter, as most others that I talked with, distinguishes between actual safety and an affective sense of safety. While this participant expresses knowledge of how bike lanes don't actually provide more physical safety for her body, a greater sense of safety is nonetheless *felt* during her experience riding in bike lanes on the road. In the last chapter, I used this example to tease out the disjuncture between the visible and the embodied dimensions of current cycling experiences in Boston. I suggested that cyclists' bike lane ambivalence is created by their experience of increasing visibility, on the one hand, yet continued experience of bodily threats on the other. This tension between the visible and the embodied, this felt ambivalence over bike lanes, is, unlike the gap between 1.65 and 30 percent, an expression of potentiality made experientially manifest.

Although the ideal of a safe street has not been actualized, its becoming is still felt in everyday experience. It is "a lived paradox where what are normally opposites coexist, coalesce, and connect; where what cannot be experienced cannot but be felt…" (Massumi 2002:30). Cyclists feel at once safer and less safe. Increased safety on the street is not fully actual, but the feeling is fully real. This ambivalence is embodied becoming. Cyclists' bodies ride between the remnants of the old and the advent of the new, and in this experience, perceptions of safety bounce around in the unknown of what has not yet arrived.

The potential for bodily harm intersects with the potential of a new urban ideal. Bike lanes work on perceptions of safety, not by changing perceptions of bodily protection, but by changing perceptions of the city space. Consider again the perspective stated by a bicycle commuter, "I like bike lanes not because I think that they're actually safer, but because they remind the cars that we are supposed to be there" (interview transcript 7-2-10). In the last chapter, I used this sentiment to illustrate how bike commuters understand bike lanes as mechanisms that increase their visibility and legitimacy as cyclists on the road. This assumed—or at least hoped for—legitimacy is understood by bikeways proponents as an important component in the creation of a more equitable and inclusive urban milieu. Bike lanes are used to produce a more inviting and accessible atmosphere for a wider diversity of cyclists with the aim of increasing the overall population of cyclists in the city. It is believed by some that "[t]he few cities that do provide good infrastructure for cyclists are the safest for cyclists, pedestrians and cars" (Koglin 2011: 225)…Planning for cyclists' means creating more equal urban spaces where *all* road users can use the space…" (Koglin 2011:226, my emphasis). In other words, the participant above can be understood to "likes bike lanes," not because she feels that her body is more protected, but because the *idea* of cycling in a more inclusive urban space changes her perception of the likelihood of a harmful event to take place.

In this way, bike lanes intervene into the urban milieu. The milieu is a body with a multitude of moving parts in which an intervention in one area affects the whole. It is "[t]he space in which a series of uncertain elements unfold" (Foucault 2007:20). The milieu is a constantly shifting event-space composed of natural and artificial givens, such as watersheds, streets, and people (2007:20-21). "[T]he milieu appears as a field of

intervention in which…one tries to affect, precisely, the population. … (2007:21). Possible events are managed with the ultimate goal of maximizing benefit for the greatest number. Future events and consequences to the population are managed through the interplay of remote factors (2007:72). "What one tries to reach through the milieu is precisely the *conjunction* of a series of events produced by…individuals, populations, and groups, and quasi natural events which occur around them" (2007:21, my emphasis). In other words, an intervention into the milieu is a holistic method. It is less like a surgeon, and more like a naturopathic doctor. Like an herbal concoction, an intervention into the milieu works at the intersection of elements to affect the collective body.

Bike lanes, or more broadly road infrastructure, or even the urban physical environment, are remote factors that work in the milieu and on the population. Bike lanes re-purpose street space and instigate conversation and contention around how street space is purposed. Bike lanes are symbols of transport cycling. They are an attempt to preemptively create 'safe space,' whether this safety is experienced or not. This sense does not correspond to individual bodies, but to the body of the milieu. It depends on a notion of 'the population,' 'the collective,' 'the public.' Whether it is safety or something else that is actually experienced by cyclists, bike lanes change the shape of the urban environment, and this change reverberates throughout the milieu, creating shifts in how the urban environment is used, viewed, felt, experienced, and imagined. Boston starts to look more like a European cycling utopia. These changing arrangements of elements in the milieu produce sensations, affects. Cyclists' experiences actually become more ambivalent.

In this way, irrespective of the physicality of what they actually (do not) protect against, bike lanes, as physical components of the urban landscape, play on cyclists' perceptions of risk and fear. They produce sensations about safety, even growing senses of safety, however preemptive, contradictory, or incomplete they might be. Bike lanes provoke sensations of a space between a present reality and a future potential. This potential is a safer street and city. Bike lanes are investments in this potential safety—or what we can call 'security.'

Security deals neither in legality nor actuality (Simon 2010), but in potentiality. Security is based on managing the space between what is and what could be. It is a particular technique of power that works on managing potential future events (Foucault 2007:20). Foucault calls this the "the problem of… [a]n indefinite series of mobile elements" (2007:20). "[S]ecurity…tries to work within reality, by getting the components of reality to work in relation to each other, thanks to and through a series of analyses and specific arrangements" (2007:47). Apparatuses and technologies of security "open into a future that is not exactly controllable, not precisely measured or measurable" (2007:20), to maximize positive elements, and minimize what is risky (2007:19) for the population (2007:11, 19, 108, 122). In other words, security is a strategy of predicting and responding to what *might* happen; *it is preemptive*. And in that it attempts to minimize risk and maximize benefit *for the population*—to preserve life and curb death[27]—security can be seen as a preemptive safety. Bike lanes are mechanisms of security in this Foucauldian sense.

[27] This is why Foucault calls security a technology of "biopower." The emphasis of biopower is on preserving life, rather than on wielding the force to cause death. For example, for Foucault, discourses of "freedom" and "human rights" develop through biopolitical apparatuses (e.g. 2007:47-49).

The bikeways strategy for cycling safety is preemptive. Bike lanes are engaged in the present as insurance for the safe circulation and flow of bodies in the future—a future that hopefully looks like a street in Germany, Switzerland, or Denmark. Feelings of safety in the present respond to the perception of future legitimacy, to the very experience of this process in-motion (of becoming legitimate), and to a 'safety imaginary' that hinges on the presence of such legitimacy. This perceived legitimacy qua visibility brought by bike lanes (see the last chapter) is itself a product of a technology of security.

Bike lanes as mechanisms of this technique of power, help build 'the public' (Foucault 2007:75), notions of freedom and livability, and ideals of inclusion and social justice. They do this, not through claiming spaces of representation like Mitchell (2002) would assert—claims which capture and create artificial stasis—but through managing circulation, managing a "multiplicity in movement" (Foucault 2007:125), *managing* "*freedom"* (2007:48-49, my emphasis). Within this framework of security, this freedom is not restricted by law and gained through rights claims, but is rather facilitated and produced through the management of freely moving bodies. Bike lanes attempt to be positively productive. They work to facilitate what people want to do and what they *will* want to do in the future. In this way, bike lanes participate in an apparatus that "think[s] before all else of men's freedom, of what they want to do, of what they have an interest in doing, and of what they think about doing" (Foucault 2007:49). It is an apparatus that simultaneously creates and responds to 'the wills of people' and a notion of 'public good.' It is in this way that bike lanes work towards 'street for all.'

Reconsidering Inclusivity

The bottom line for bikeways believers is that bodily safety increases with increases in the population of cyclists on the road. To produce a greater population of cyclists on the road, transport cycling needs to become more *inclusive*. Inclusivity is a technology of security in that it preemptively works on the population to effect future behavior as an odds game against risk. To become more inclusive, transport cycling needs to be *perceived* as a viable option for a wider diversity of people in the city. Bike lanes are used to produce a more inviting and accessible atmosphere for a diversity of cyclists with varying skills, abilities, lifestyles, and purposes. In this way, bike lanes work on the population as mechanisms of inclusion. This is a numbers game, but it is also, very importantly, socio-cultural.

Inclusivity, as a safety logic, is a point of convergence between the physical and the ideological dimensions of cycling safety—the physical dimension of the body and the ideological dimension of an idea of a 'safe space.' It is also a point of convergence between the individual body and the collective body. Between the individual and collective, physical and ideological, is the unknown of interaction. As noted in the last two chapters, this unknown manifests for many potential cyclists as fear. Fear is the experience of, not the here and now, but a perceived possibility of an undesirable future event. Stated more simply, fear is the emotional experience of threat. The point of intervention for the bikeways safety logic, or inclusivity, is the mitigation of this fear.

Fear is conditioned by subjectivity, by positions of (non)integration into a constructed norm. Pain states:

> Research has consistently produced evidence that social traits such as age, gender, race, ethnicity and class affect fear levels. It has been hypothesized that this is due to structural inequalities in society which affect the relation of such groups to power. Those who feel a lack of integration into their neighbourhoods, isolation, or a lack of social acceptance; those who have little control over resources; and those who are marginalized and have a sense of powerlessness within society are most likely to fear crime (1991:424).

While Pain's research has to do with fear related to crime violence, the same can be said for fear related to daily travel. Loukaitou-Sideris (2006), for example, finds that ethnic minorities, and in particular the elderly of this group, experience more fear of walking related to threats of traffic collisions. Similarly, bicycle transportation research shows that women cycle less than men, feel less safe riding next to cars than men, and are less likely to bike if there are not specified lanes because of perceptions of risk (Emond 2009; Krizek 2004). Cupples reflects, "It is no sheer coincidence that commuter cyclists are much more likely to be male, and are often people who don't have immediate responsibility for the social reproduction of the household" after acknowledging her own productive and reproductive responsibilities, and fear of death by cycling (2011:228). Additionally, Horton (2007) discuses how men who do not have fear for themselves about bike commuting, express fear for wives or daughters if they were to do the same thing. While there are, no doubt, many reasons for the differing perceptions of risk, sentiments of fear, and rates of cycling for men and women, the examples here illustrate how notions about female bodies impact fear of particular kinds of movement in the city. It also shows how fear and transport choices can be intertwined with seemingly unrelated material realities, such as care-giving, that are also intertwines with subjectivity.

Power relations that play into fear play out in material realities, such as the locations of where income or racial minorities live in relation to infrastructurally impoverished streets, access to types of modal methods stratified by gender, class, and other axis of difference, and whose bodies are more likely to suffer injury or death. Along with her findings on fear, for example, Loukaitou-Sideris (2006) also finds that ethnic minorities disproportionately walk as a mode of transport, and are disproportionately represented in pedestrian injury and fatalities statistics. "[R]isks are not the same for all individuals, all ages, or in every condition, place or milieu. There are therefore differential risks that reveal, as it were, zones of higher risk and, on the other hand, zones of lower risk. This means that one can thus identify what is dangerous" (Foucault 2007:63). Fear is conditioned by subjectivity, but so too is risk. Cycling safety is a mash-up of subject positionality, perception, probability, potentiality, and embodied reality.

The discourse of inclusivity intervenes at this conjunction. Inclusivity discourse, which is a technology of security, renders cycling safety into a problem of fear and risk, and responds to this rendering through attempting to manage potentialities by affecting probabilities. Inclusivity discourse does this through the negotiation of difference and normalcy.

The bikeways discourse of inclusivity that advocates for the inclusion of cycling as an option for travel on city streets and for the inclusion of many different kinds of cyclists, is a project of creating a new norm that maintains multiplicity. As Miller, for example, states, "If cycling is to become mainstream, ordinary, ubiquitous, then we have to find ways to include every potential rider… it requires serious (dare I say 'affirmative') engagement with the reality and needs of the under-represented

populations" ((blogpost 1/25/11). This is a call to recognize and maintain difference. It is not about trying to get everyone to move the same way, but about providing a space in which different people can move differently within a normal range. Consider again this response from a bike commuter in our conversation about her experiences of bike lanes:

> Visibility [from bike lanes] has made those of us who are not the crazy eighteen-to-twenty-four-year-old-boy on their fixed bike darting in and out of traffic being stupid, more comfortable and therefore more visible. And that's important because… they're not the kind [of cyclists] who are going to make drivers think cyclists should be here and that's important to me... (interview transcript 7-2-10).

Read straightforwardly, this quote is about visibility and legitimacy. Read sideways, however, this quote is about flows of difference. It is important to this research participant for a person who is not a "crazy eighteen-to-twenty-four-year-old-boy" to be able to cycle on the street as well. From this perspective, it is movement that is of primary concern. In considering her movements through the city, this research participant both distinguishes her movements, and needs that impact her movements, as different from that of a "crazy eighteen-to-twenty-four-year-old-boy on their fixed bike," and yet the same in that she still needs to be able to move through the city by bicycle. "The norm is an interplay of differential normalities" (Foucault 2007:63). Difference is preserved at the same time as it is subsumed. The norm is created through there being differences that interact in the urban milieu. As the cyclist's quote above indicates, bike lanes help facilitate these interactions. Bike lanes are mechanisms of inclusivity discourse. Inclusivity, as a technology that gathers differences, helps produce the "plotting of the normal" (Foucault 2007:63).

Importantly, inclusivity discourse understood in this light is not about counting bodies, what can be seen, what looks normal, or establishing legitimacy. Rather, it is

about what can be expected or predicted, the establishment of a 'normal' range of experience. In other words, inclusivity in the Foucauldian sense of security is not about the intelligibility of bodies, but about facilitating their flow through the interaction of differences.

Back to Real Bodies

So what? What is advantageous about illuminating this perspective? When we encounter each other in our daily life, we don't encounter each other as legal bodies, but real ones. Flesh, blood, and feelings. As discussed at the close of chapter two, a representational notion and strategy of social justice has trouble responding to real bodies. Inclusivity discourse, in this sense, is a discursive response to a pre-discursive threat. There will always be a gap between what is seen and what is felt. As Sparks argues in his discussion of the appropriation of public space in homelessness struggles, the visibility of bodies in public space does not equate to their participation (2010:846). Likewise, chapter two demonstrated how increasing the visibility of transport cycling has not amounted to bodily safety.

In fact, increasing visibility could potentially increase harm. Pain, for example, discusses how rates of homophobic violence increase as non-heteronormative options become more visible (2000:375). Of this conundrum, Judith Butler reflects, "I may feel that without some recognizability I cannot live. But I may also feel that the terms by which I am recognized make my life unlivable" (2004a:4). When visibility or

intelligibility is the measure for equity, we may just create lives that look more livable, but might not actually *be* more livable.

Representation, visibility, and legitimacy work in a legal framework, but the realm of cycling safety I am concerned with here is not between the state and bodies, but between neighbor and neighbor, traveler and traveler, body and body. To address cycling safety, we need to mobilize a conception of integration and equity that can address everyday interactions with each other. And we need to consider each other's real, physical bodies. As Butler asks, "Is there a way that we might struggle for autonomy in many spheres but also consider the demands that are imposed upon us by living in a world of beings who are, by definition, physically dependent on one another, physically vulnerable to one another" (2004a:22)?

Perhaps this chapter outlines a beginning. Although Foucault does not expand on how security, as a technique of power, manifests and operates between our encounters with each other, it can certainly be extrapolated. For Foucault, we are all conduits of power and can mobilize its technologies. In this chapter, I have painted a picture of a fluid, evolving milieu in which we flow through it as bodies and interact through affect. From this perspective, the starting point for creating more (social) safety, which is ultimately a social justice concern, is not rights-claims and representation, but affects and the flow of difference within a collective body.

Inclusivity is a beautiful ideal for the aims of transport cycling, streets, and the city. As Miller suggests for increasing the transport cycling population, the key issue depends on not just avoiding negative stereotypes, but seriously engaging with the perspectives and needs of under-represented populations (blogpost 1/25/11). How we do

this, though, matters. How could we prevent creating injustice in our very attempts to rectify injustice? How would we prevent, or minimize, subjectifying, stereotyping, speaking for others, addressing symptoms and applying band-aids instead of addressing root causes? How do we choose the issues to address and the projects to focus on? And maybe most importantly, how do we maintain engagement even after we've checked off all the boxes on the list we create?

The Foucauldian framework laid out in this chapter points to a de-subjectified approach. Engagement would not be an itemized list, but a way of life. Our approach to the engagement that Miller and others rightly call for could begin with an actualization of the realization that we are embodied elements in interaction and flow, of and for a space, a collective,[28] that is much greater than any one of us. In this way, we can understand and live through our bodies detached from the notion of the individual. Judith Butler considers this the 'public dimension' of our bodies. She says, "Although we struggle for rights over our own bodies, the very bodies for which we struggle are not quite our very own. The body has its invariably public dimension; constituted as a social phenomenon in the public sphere, my body is and is not mine" (2004a:21). In this light, safety and social justice become collective notions in the broadest sense, yet individualized in that the approach is deeply personal, relying foremost on our conduct of encounter with one another.

We move through the city, not as one body trying to go to one place, but as a multiplicity of bodies striving for harmony. I'll illustrate with a simple example. Not too long ago, I was walking down Centre St. and came upon a situation in which a public

[28] By 'collective,' I mean a whole that is unified, and at the same time preserves the difference and multiplicity of its parts.

works vehicle had pulled over into a bike lane outside of a liquor store. A cyclist standing outside the liquor store with her bike started taking pictures of the vehicle, which instigated a conflict between the driver of the vehicle and the cyclist. The cyclist kept arguing for the driver to find a spot for his vehicle that did not block the bike lane, while the driver tried to explain how there wasn't another spot for him to move his vehicle that would be close to where he needed to work (post fieldnotes 3-27-12). The cyclist felt her claim to space was being violated, while the public worker felt his civic duty trumped that claim. Both were dealing with each other in a categorical and territorial way that resulted in a bind, rather than a flow.

Street space is a limited resource that has to accommodate a plethora of activities and needs. What if we engage one another, not as categories, groups, names, or legal bodies, but through affect? Judith Butler suggests:

> [P]erhaps we make a mistake if we take the definitions of who we are, legally, to be adequate descriptions of what we are about. Although this language may well establish our legitimacy within a legal framework ensconced in liberal versions of human ontology, it does not do justice to passion and grief and rage, all of which tear us from ourselves, bind us to others, transport us, undo us, implicate us in lives that are not our own, irreversibly, if not fatally (2004b:25).

What I am proposing is exactly to do justice to passion, grief, and rage. We can engage each other through our affects—through our feelings, desires, embodied experiences—as diverse, yet converging bodies. In this light, the problem over space between cyclist and public worker would be solved, not by winning a categorical rights claim, but by an ability to attend to the other's need as it arose in the moment.

Cycling safety within the bikeways context provides a productive opportunity to explore this new way of thinking and acting because the problem of cycling safety is directly situated within our bodies, in encounters with one another, as we each traverse

the city. The questions for cycling safety become questions about how we regard one another, perceive one another, engage one another. Our and others' movements become the responsibility, not of a law, right, or regulation, but of what we create in the moment, with ourselves and with others, preemptive of any categorical standing. Bike lanes have no necessary part in this, but they can be instrumentalized as an impetus and a beginning on a path towards actualizing a different kind of street, city, and way of conducting urban life.

This Foucauldian analysis suggests that we take more seriously the affective dimensions of our relations to each other—a fancy way of arriving at a simple suggestion for efforts toward transport cycling integration and the problem of cycling safety. We should maximize our ability to relate in, and extend, actual care for one another as ourselves. "[W]e are, as bodies, outside ourselves, for one another" (Butler 2004a:22). This is the starting point of an "engagement with the reality and needs of the under-represented populations" that may work to produce a strategy for social justice that reaches real bodies.

This is an action-oriented framework. The act comes before the call. The affect precedes the ideology. We don't just imagine a different future, but enact its potentiality. The questions for each of us concerned with safety and social justice are no longer: What are my rights? How have I been wronged? What are my positions of privilege? Or even, what can I do? They become: What am I already doing? How can I maximize what I am doing that produces mutually beneficial results in my interactions with others? How can I minimize what I am doing that produces harm? What are the root mechanisms in my mutually beneficial encounters, and how can I expand their reach?

"One must make substantive decisions about what will be a less violent future, what will be a more inclusive population, what will help to fulfill, in substantive terms, the claims of universality and justice that we seek to understand in their cultural specificity and social meaning. When we come to deciding right and wrong courses of action in that context, it is crucial to ask: what forms of community have been created, and through what violences and exclusions have they been created?"
--Judith Butler, *Undoing Gender*

Chapter Five

Methods

My research project began with the notion attributed to feminist geography that the personal is political and professional, and that these cannot be pulled apart (Hyndman 2001; Katz 1994; Kobayashi 1994, Moss 2002; Nast 1994; Till 2001; Valentine 2002). Embracing this perspective that knowledge-making is always political, and being familiar with ethical issues surrounding the politics of representation (Nast 1994, Kobayashi 1994, Katz 1994; Valentine 2002), I only felt comfortable conducting a research project that stemmed from something I felt a personal connection to, something in my lived experience. This, I felt, would allow me an avenue both to be sensitive to issues of representation and to produce research with a "commitment to deconstruct the barrier between the academy and the lives of the people it professes to represent" (Kobayashi 1994:73).

For the last ten years of my life, I have been, and continue to be, an avid transport cyclist. I began transport cycling while living in Boston in 2002. Being a young 18-year-old looking for a way to cut down on costs, not owning a car, and realizing how much more efficient it would be to get around by bicycle as opposed to public transport, I decided to try it. It was love at first ride, really. Now transport cycling is a lifestyle I can't live without. I have come to depend on the time it gives me to interact with and appreciate with the environment around me, to do something physical with my body, to be in touch with the efforts of mobility, and to save money that is not spent on

maintaining a car and therefore can be allotted to other things, such as books for graduate school.[29]

This lifestyle, however, is not an easy task. The challenges and risks are in my face daily. I share many of the concerns and experiences expressed to me by research participants, and that subsequently appear throughout this thesis. From being yelled at, honked at, spit on, threatened by fast-moving vehicles only inches from my elbow, to crashing due to ill-maintained roads, getting run off the road as it unexpected shrinks, and being ticketing for road maneuvers that were against traffic regulation but saved my body from injury, I feel the urgency with which safety is a concern for transport cyclists. When more recently, friends, acquaintances, strangers, governments, and NGOs perceive me as an environmentalist, socially-conscious, do-gooder, where is the acknowledgment of these realities of the street experience, physical effort, or economic conditions inherent in my commute? The contradiction between these experiences and the feel-good promotion of transport cycling for its perceived sustainability and healthfulness feels misguided and threatening. I began to ask, what are the effects of this 'green-scripting' of the bicycle? What is this discourse making visible, and what is it making invisible? And importantly, how can this disconnect be rectified so that efforts toward transport cycling integration can attend to the actual concerns and issues for cyclists in productive and useful ways?

What began as an intention to focus on the green-scripting of bicycle transportation ended up as an investigation and exploration of cycling safety. Upon reflection, this re-routing developed out of my research design. I took an embodied approach to this study, meaning that my focus was on the experiential elements of

[29] Honestly, riding a bicycle and thereby not owning a car is one of the main ways I was able to circumvent taking out loans while in graduate school.

cycling, the interaction between body and environment. Through my research, I found that the theme of green-scripting rarely showed up in this context; rather, transport cyclists talked an awful lot about safety, bike lanes, and their ideals of what the street environment could be. My research project inverted. What began as an investigation into how discourses code affective experiences ended as an investigation into how affects infuse discourses.

In addition, I began by wanting to emphasize the class dimensions of transport cycling. Soon after commencing fieldwork, I realized that my research design was not well equipped for this in that I had not incorporated a way to understand class through embodied dimensions of cycling, and that locating the necessary participants to conduct such a study was going to be out of the scope of my Master's thesis project in which I had only two and a half months to complete my fieldwork. This was because I would need to find cyclists that I did not normally have contact with. Here, the concept of social capital became important, particularly in a climate of recession where more people were opting to ride bicycles to save on gas expenditure. Although I cycle for economic reasons and so do a number of people that I encountered through advocacy organizations and bike events, these people, including myself, tend to have more social capital than those that are absent from these scenes.

The focus in my research design was on bicycle spaces in the city. If I was going to acquire access to participants with less social capital, I should have focused on soup kitchens, homeless shelters, day-laborer sites, and other locations where less visible cyclists might congregate. I did try this. In scoping out bicycle spaces in the city, I found a park in which a number of these less visible cyclists seemed to congregate during the

middle of the day. However, the population of transport cyclists here were middle-aged, non-white males. As a young, white, woman, graduate student, approaching these groups of men felt intimidating. After spending a few hours observing from a park bench a couple of times and noting that some of these men also did not seem sober, I concluded that approaching them could also be risky and abandoned this avenue. Not all avenues are open to all researchers (England 1994; Nast 1994), and I simply did not have enough time or resources to figure out one that would work for class-specific investigation.

Over the course of two and half months, I conducted 7 recorded interviews, one with the director of the city of Boston's bike program, the rest with transport cyclists, two of which were also employed at bicycle advocacy non-profits and one at a bike shop. I conducted 8 cycling journey accompaniments[30] that usually had interview components as we were riding. I conducted a total of 10 mapping exercises, 9 of which were with participants that I also interviewed or accompanied. I conducted 19 formal participant-observation days at local events, bike rides, and street and public locations in the city. These days often consisted of more than one observation outing. And I conducted 10 participant-observation rides, 4 of which were video taped.

Overall, my research population was not very racially diverse. Although some participants were of differing ethnicities, the vast majority of people in my study were white. Participation in my research was roughly equal in regards to gender. Of the total conversations about transport cycling that I recorded in fieldnotes and interview transcripts, 14 of these participants were male-bodied and 14 were female-bodied. Participants were of a diverse range of ages, from early twenties to late sixties.

[30] Four of these were with the same participant.

Methodology

Although I would not classify this project as feminist—insofar as I did not "politiciz[e] a methodology *through* feminism" (Moss 2002:12)—feminism provided the main influence for my methodological approach. Following a feminist perspective on qualitative research, I did not intend my research to decipher or collect objective or authoritative truths; rather, as Hyndman states, I used my research "to generate analyses and tell specific stories" (2001:263). I intended and proceeded to design a research project that allowed me to illuminate stories and create meaning out of those stories. There are, undoubtedly, different stories that could be told and many more stories to tell.

My overarching approach was a case study method. I chose to conduct a qualitative study because I was concerned with the lived practices (Crang 2002:648) of transport cycling. Since my intent was to "expand and generalize" theory (Yin 2003:10) about the current trend of transport cycling integration across the U.S., a case study method made sense. Yin says that a case study is, "An empirical inquiry that investigates contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (2003:13). Using a case study approach, I could conduct research in a particular location that would potentially be theoretically generalizable to the broader context in question. This means that my research does not represent a sample, but is rather generalizable to theoretical propositions through an analytical mode (Yin 2003:10, 32).

Foremost, fieldwork, as knowledge-making, is understood by feminist geographers at once as political, personal, and professional (Dyck 2002; Falconer Al-

Hindi and Kawabata 2002; Hyndman 2001; Katz 1994; Kobayashi 1994; Moss 2002; Till 2001; Watson and Till 2010). For me, this was certainly the case. I chose Boston as my fieldsite, in part, because it was a place that I had previously lived. I felt a personal connection to that place and an investment in the development of transport cycling in that city. My motivations were and are political, as I have discussed already, and of course, professional as well. The purpose of my fieldwork was to complete my Master's thesis. As feminist scholars point out, however, the lines between these different dimensions of work don't parcel out so easily in practice.

Feminist scholars discuss the "betweenness" that researchers experience in the field (Hyndman 2001; Katz 1994; Nast 1994; Staeheli and Lawson 1994; Till 2001). Nast, for example, articulates the situation this way: "[E]ven where differences in a field are small, because we are positioned simultaneously in a number of fields we are always, at some level, somewhere, in a state of betweenness, negotiating various degrees and kinds of difference…" (1994:57). Researchers are positioned in the world like everyone else. They are players that affect and are affected by the fieldwork process (Katz 1994), mediated by their gendered, classed, raced, sexed, aged, etc. subjectivities that are variably similar and dissimilar to their research participants (Falconer Al-Hindi and Kawabata 2002; Gilbert 1994; Valentine 2002). For example, I was similar to many of my research participants in that I too am a cycle commuter. With some, I also shared characteristics of gender, age, ethnicity, class, and ideological belief. This situation of likeness and difference, which is part of every encounter with another, poses a challenge for the researcher, and has thus become a notable concern for scholars because of how it impacts the researcher's perspective and the knowledge that is then produced. From the

perspective of feminist work, it is not the work of the researcher to overcome this alterity, but rather be reflexive about how the positionality of the researcher is embedded within her/his production of knowledge (Dyck 2002:234; England 1994; Falconer Al-Hindi and Kawabata 2002; Nast 1994).

Most simply, *"[R]eflexivity* means *reflectivity*, or the act of reflecting upon oneself and one's experiences" (Falconer Al-Hindi and Kawabata 2002:104). I attempted to incorporate reflexivity into all phases of my research project. For example, incorporating a process of reflexivity is what generated my divergence from an emphasis on class in this project that I previously discussed. Reflexivity can also be used to acknowledge and negotiate the power dynamics inherent in the process of fieldwork.

In reality, there is no "field" for the researcher to arrive at and leave (Staeheli and Lawson 1994). "We are always already in the field" (Katz 1994:67). Particularly for feminists, the field often incorporates the academy, the outside locations in which they study, as well as home lives (Hyndman 2001; Kobayashi 1994; Staeheli and Lawson 1994; Till 2001). It is the researcher who constructs and defines what the field of research will be, and this power of definition and construction reflects power relations. During my fieldwork, for example, I lived in a house with many bicycle commuters. However, I did not move in with the condition that I would be conducting research in the home. Was my home also my field site, and if it was, what would that make my home? This was my decision to make. Inherent in this decision was not only a concern for the preservation of a space for time-out, but more importantly what it would mean for others in the home for research to be conducted there. What would it feel like to think that anything we talked about could potentially show up in my research? In this particular case, I settled on a

middle road. If we were discussing something in the house that I wanted to include in my research, I asked if I could write it down. Cycling is not a very invasive topic, and most cyclists want to share their stories and concerns, so this was very easy. A few of my housemates participated in accompaniments, and helped me obtain interview connections.

It can be difficult to negotiate research in which the professional is also personal. I appreciate that feminist geographers embrace the reality that our lives aren't categorized in neat and seamless ways. There are always bleeds and interactions between our fieldwork and the 'other' dimensions of our life, and where these exist, there can be very exciting and fulfilling encounters and engagements (or the opposite). Valentine (2002) notes dimensions of emotion, such as sexual attractions and repulsions, that exist within the fieldwork experience. Friends, and even lovers, are made out of fieldwork relationships (Valentine 2002:124). Till remarks how, "When we conduct research, we often bring our homes with us; sometimes the field becomes a home" (2001:47). This was certainly the case for me, as my fieldwork ignited many meaningful relations with place and people that compelled me to move back to the home in which I lived, and continue relationships that I had begun with people in both personal and professional ways. The boundaries between the 'field' of my research, my personal adventures, and the relationships I built while conducting fieldwork remained fluid. It was my task to be as transparent and ethical as possible in negotiating this fluidity.

In this research, my focus was on the everyday embodied, affective experiences and practices of urban transport cyclists' journeys through the city. In this sense, I highlighted two categorical sites of investigation– the body (of bike-commuters) and the

urban environment. It is through feminism that the body and everyday life have become sites and realms of study in geography (Jones, Nast and Roberts 1997a, 1997b, Nast 1994, Staeheli and Lawson 1994). I extrapolated my emphasis on embodiment and everyday life directly out of feminist geographical work, much like the influential work by Rachel Slocum (2007, 2008) who looks at how race is produced through everyday embodied experiences and practices at Farmer's Markets. As feminist geographers continue to champion, bodies are important sites for geographical work. "[I]t is through bodies that we encounter and give place to geographical reality. Bodies express human differentiation and the spatial extensions of whatever selves we choose to construct. They are the primary sites of feminist struggle" (Kobayashi 1997:8). In fact, bodies, I think, are primary sites of all struggle; it is just that sometimes we overlook this.

It is from the above premises that I designed and implemented my research. Making knowledge of this was not an easy task. As Dyck reflects, "Constructing knowledge from field research is a potentially daunting task and a heavy responsibility when, as several authors suggest, it is from a context of fluidity and uncertainties that we eventually 'fix' meaning" (2002:235). Doing research in the 'real world' is an altogether different process than research in a lab. It is a fluid process with no real start, end, control group, or definitive meanings. To write this thesis, I've had to artificially bind a collection of moments, uplifting them from the fluidity of everyday life, and giving them a sense of false timelessness. I've had to begrudgingly give priority to certain aspects and ignore others. In the process of constructing this thesis I am all too aware of what I am leaving out. I offer one of many possible interpretations of a small piece—transport

cycling—of what goes on in our daily world that hopefully inspires curiosity and expands the way we understand the worlds in which we live.

Fieldwork and Data Collection

To conduct my case study, I used a multi-method approach as defined by Philip in which "a number of complementary methods are employed to address different facets of a research question…" (1998:264). Visual, verbal, and experiential data were all necessary facets of a sufficient response to my research question about the embodied experience of cyclists' interactions with the street environment; a multi-method approach is thus well-suited to this complex inquiry. I sought theoretical saturation through in-depth descriptive data about Boston transport cycling obtained from the range of sources listed below.

My approach consisted of: 1) semi-structured interviews with government officials, bike advocates, and transport cyclists; 2) mapping exercises with cyclists; 3) fixed participant-observation of bike traffic areas and events 4) mobile observations of bikeways, ride events, and accompaniments with cyclists on their commutes; 5) document research and 6) discourse analysis. Methods one through four were the primary focus of two and half months of fieldwork during June-August 2010, and the fifth and sixth took place in the Spring and Summer of 2010-2011. I continued the writing of this thesis through Spring of 2012.

To coordinate my data collection process, I kept a project log. I designed my project log loosely after Bernard's (2002:371) suggestion to record it in two columns. On

the left I wrote down the activities I planned to do, and on the right I wrote down the activities I actually did. This project log proved immensely useful as a way shorthand tool to navigate my data during the analytical phase of the project.

I used three sets of semi-structured interview questions. One was constructed specifically for the director of Boston Bikes to gain information about the City's program and insight into the broad picture of transport cycling in Boston. I had a second set constructed for interviews with representatives of non-profit bicycle advocacy organizations in Boston. I conducted two of these. The third set was designed for semi-structured interviews with transport cyclists. I conducted semi-structured interviews with transport cyclists to gain an understanding of who transport cyclists were in Boston, what their experiences commuting in Boston were like, and to gain an understanding of cyclists' thoughts, feelings, and perceptions related to their cycling experiences.

The semi-structured interviews conducted with non-profits and the City were used to obtain local 'expert' knowledge about Boston's bikscape. As such, these interviews were straightforward and I found my guides to be well equipped. The interview guides for cyclists were less so. As I conducted interviews with cyclists, I began to see what kinds of responses my interview questions generated. Due to my initial emphasis on green-scripting, I had a few questions about how cyclists felt they were perceived by others, and how they themselves perceived other cyclists. These questions, however, were not fruitful. It was hard for the cyclists I spoke with to generate meaningful responses. It seemed as though most of them were searching for a response, rather than it being something on their minds already. What they did have a plethora to say about were their own personal experiences and opinions. Since I ultimately wanted to use interviews

with cycle commuters to gain more of a nuanced understanding of personal experiences, I see in hindsight that I would have gained even more information of the type I was ultimately seeking by orienting the semi-structured interviews more fully on the individual experience of the cyclist her/himself. I audio recorded interviews and transcribed them during Fall 2011.

Mapping exercises were used as part of the interview and accompaniment process as an aid for gathering spatial data and helping cyclists jog thoughts about their journeys. Watson and Till suggest that, "Asking people to talk about objects is also a way to understand everyday movements and emotional worlds" (2010:123). I wanted to use these maps as a sort of object to focus on through which an interaction might follow that produced insight into cyclists' everyday movements, experiences, and feelings about these movements. I provided a photocopied map—a section of Boston proper taken from a larger map of the area—on which I asked participants to highlight their journeys. It was open to participants to decide for themselves what and how to map. I then asked participants questions that related to the journey's they highlighted—why they go that way, what they encounter, etc. This succeeded with some participants more than others. Some participants enjoyed mapping their journeys and the lens that this offered them, and it generated considerable conversation and reflection. For others, it was a relatively quick exercise to comply with my wishes. Additionally, the effectiveness of this exercise was compromised by my limited resources. Some participants' routes included areas well off of the map that I was able to provide. This would have been more effective had I been able to provide research participants with the full map.

Overall, however, I think that this was an effective method. It was interesting in and of itself to witness the process of how people mapped their journeys. Some participants chose to map only the routes that they took daily, while others included all of the routes that they could remember that they tried at one point or another. Some stuck to mapping journeys that they considered as utilitarian, but for others this line was less concrete. Common joy ride routes through the city that may end at a recreational destination, such as a park, bar, or friends house were also included. Additionally, this visualization was helpful for me in understanding the Boston area and making connections between where people were cycling and the experiences they expressed. It also helped to give me a sense of the various ways that people cycle. Again, for example, some cycled for very specific purposes (e.g. just to go to work and pick up groceries), while for others cycling was used for every journey. I learned how some people go the same way to a place without fail, while others have many routes to the same place. Some stick more to actual 'bike routes' while others don't cycle near them. Some cyclists make circles, while others chart lines, triangles, or other shapes in the city. Ultimately, I did not use these mapping exercises to their potential. In the end, I used them to triangulate trends found in observation and interview data. Further concentration on this method would be interesting.

I conducted participant observation in order to focus on non-verbal expressions of the cycling experience, and to participate in situations that were not led by my research objectives. Like Watson and Till remark, participant-observation allowed me to, "become familiar with how social spaces are constituted in various settings" (2010:129). I

conducted participant-observation on street corners, bike routes, at bike events, and community bike rides. My approach to participant-observation was twofold.

First, in an attempt to get a 'wide angle shot' of how bicycles move through the city, I picked certain street locations in the city to conduct what Bernard calls "spot sampling" or "time allocation studies" (2002:402). This is a technique in which I 'appeared randomly in select places, at randomly selected times, and recorded what cyclists were doing as I first saw them' (Bernard 2002:402). The difference between Bernard's method and my own, however, is that I wasn't concerned with how much time people were cycling, but rather where and how they were cycling. Data from this strategy was useful in gaining a perception of cyclists' engagement in bike lanes and how they traverse the streetscape—whether in the bike lane, or in the car lane, or over to one side, or on the sidewalk, if/when cyclists get off of their bikes, etc. I did not attempt a representative sample, but rather used this data to triangulate with what research participants expressed through interviews and accompaniments.

Bernard poses five questions to ask when drawing a sample of this kind: "1) Who do I watch? 2) Where do I go to watch them? 3) When do I go there? 4) How often do I go there? 5) How long do I spend watching people when I get there?" (2002:404). I certainly had to grapple with each of these questions. This method, like many of my others, was experimental, so I tried different ways of answering these questions to see what kinds of data it would produce. Ultimately, however, I did not find this method very useful, in large part because the very nature of obtaining stationary, momentary snapshots did not seem to effectively produce the type of data I was after. Mobile methods, such as journey accompaniments, proved much more useful in this respect.

The second type of participant-observation I conducted is an ethnographic method in which the researcher is less a 'fly on the wall' and more engaged in activities within 'the field' (Hyndman 2001; Watson and Till 2010). In this method, "The researcher is an expression of experience in the world" (Hyndman 2001). The researcher becomes a participant, and through this interactive experience, gathers data. I conducted this style of participant-observation at bicycle events, such as the Green Roots festival hosted by Bikes Not Bombs, at bike-n-breakfasts hosted by the city, a neighborhood bike wash hosted by a resident cycle-commuter, and community bike rides hosted by different community groups. I volunteered at the events that I attended. This second style of participant-observation was my preferred method of the two. The interaction allowed a fluidity and tactility to my research experience, and I was able to partake in situations that were not led by my research objectives.

I also conducted ride accompaniments with individual transport cyclists, whereby I joined participants on their journey to work or school. I originally extrapolated this method from scholarship about the walking interview, or 'go-along' (Anderson 2004; Jones et. al. 2008; Pink 2007). "The go-along is essentially a hybrid of interviewing and participant observation, with the researcher accompanying informants as they go about their daily routines and asking them questions along the way" (Jones et. al. 2008). In this way, the environment itself can act as a prompt for conversation (Jones et. al. 2008). Cycling ride-alongs differ from the walk-along in that verbal interaction is less, giving embodied interactions more precedence. Of cycling ride-alongs, Spinney remarks that the dangers of urban cycling and the variety of cycling styles preclude the use of this method (2011:162). I did not find this in my research; rather, I found that I had to possess a

certain skill set, conditions, desire, and willingness to conduct such research. It certainly is possible, just context-specific.

Although I was only able to record data through post-journey fieldnotes, this was an extremely effective method because it illuminated, more than any other method, the variety and uniqueness in the journey experience. It is easy to assume that getting from one point to another is relatively the same for those moving between the same points. Conducting ride accompaniments not only made visible my own unconscious assumption about the generalizability of my own cycling style, but highlighted just how different and creative cycling the city can be. I could begin a list of description, but this would never begin to compare to the understanding made possible by the experience of it. This is similar to the experience Pink (2007) recounts in conducing walking interviews. She reflects that, while she should have already realized the importance of the garden pathway due to her participants' verbal emphasis on issues regarding it, it wasn't until she actually walked it that she gained this insight (2007:243). Thus, embodied experience can be an important tool in which the researcher can gain insight otherwise overlooked or taken for granted. I certainly experienced this in conducting ride-alongs.

I did, however, find that the ride-along method was logistically more challenging than I had expected. Since participants lived all over the city, rather than, say, close to my area, it was actually difficult to arrange to meet many of them before their commute. Many of my participants did not have regular schedules either, so this further complicated the task of determining a time and place with enough notice for me to be able to bike the journey. Additionally, in practice, asking to do ride-alongs felt more intrusive and intimate than I had expected. Perhaps this is because, unlike an interview, a ride-along

cannot occur in a neutral zone. Inherently in doing a ride-along, I was actually entering part of participants' daily life. Because of this, I did not feel comfortable asking for ride-alongs immediately upon meeting someone. For this project, I conducted ride-alongs with people who I had also become friendly with. I think more ride-alongs would have been possible had I had more time to establish relationships with participants.

Out of participant-observation and ride accompaniments, I generated fieldnotes. I took a layered approach to fieldnotes. I carried a little pad on which I would take jottings (Bernard 2002:367-368) of my experiences in the moment, or just after departing from an event. I would then come home and write longer notes and reflections on my computer, giving each day a new file. Within these fieldnotes, I recorded descriptive notes (Bernard 2002:375) of what I attended and/or what activities I participated in. In italics I inserted any thoughts I had about the experience, from what I should try to follow up on, to questions, inclinations, or feelings. Watson and Till encourage this practice. They say:

> When we write to remember and record, we often jot down those details that strike us in some way as telling and mundane about a place and/or situation. We may also take note of our emotional responses and frames of mind when experiencing events, interactions, and movements, and reflect upon how our presence may or may not be accepted in the social situations and setting we study (of which we are a part) (2010:128).

In these italicized notes of response, I captured the gender, race, age, class, etc. dynamics that I thought might be at play in my interactions at these events. Additionally, at the bottom of the fieldnotes for each day, I wrote a few paragraphs of reflection. I would comment on emerging themes, how the direction of my research was going, if I encountered any methodological difficulties, or any changes that were developing in my research. Here, I also included analytical notes (Bernard 2002:376) as I began to see

discursive patterns and themes develop in my research. Eventually I transferred and compiled these into a file in themselves that I kept up during the duration of fieldwork.

In addition to fieldnotes and interview transcripts, I collected data through photography and video. I soon realized that photos were not particularly useful for my study because, by the very nature of the photograph, it does not capture movement. I quickly abandoned this method. Video, however, was a very exciting and effective method to explore in this study.

Specifically, I used video technology to document my own and other cyclists' movements through urban space. This answers a call put forth by Justin Spinney (2009, 2011) to employ video technology in researching cycling because it can "evoke and represent some of the more 'unspeakable' elements of mobile practice" that remain overlooked by transport planners and scholars (2009: 829). Utilization of video enabled me to capture the sensory, spatial, and dynamic aspects of bicycling in the city, like movement, that techniques of sound recording, photographing, and note-taking leave out. As Murray says, "the contextualization of social processes in space is … a fundamental element of methods that are both visual and mobile" (2009:473-474). Video data draws on the connection between people and space. It is a particularly useful tool in qualitative explorations of mobility in that it can easily be moved around as well as capture moving images that can be replayed for researchers and participants alike (Murray 2009). Video, then, was an important aspect of this project because it is simultaneously visual, auditory, dynamic, and mobile.

To capture video data, I constructed a camera mount that attached to the handlebars of my bicycle (see Figures 5.1 and 5.2).

Figure 5.1

Figure 5.2

I constructed the mount out of Styrofoam, foam pad, gaffer tape, and the head of a travel tripod. As you can see, the mount was then secured to the bike using bungee cords. As figure 5.1 shows, this construction allowed me to control the camera while on my bicycle using the hand lever of the tripod mount. To conduct research in this way, I pre-planned routes covering particular kinds of road environments and then rode these routes with the camera video-recording atop my bicycle. Occasionally I stopped at locations densely populated with bike traffic, spontaneously followed streams of commuters, took diversions, or got lost, so there was an element of unplanned exploration in my method of video data collection as well.

I explored using video for ride accompaniments with a willing participant who I felt comfortable with, but this turned out to be disconcertingly voyeuristic. In order for the participant to be recorded in the camera frame, I had to follow at an awkward distance, rather than riding beside her in an interactive manner.[31] A very unique type of lens would be necessary to record while riding directly with a participant. Even better would have been to be able to have participants video-record their own rides in the first person. With a larger budget, this method is very doable (see Spinney 2011). There are a few kinds of cycling camera mounts on the market today. For me, however, my one

[31] For a mental image, it felt just like that scene in *I Heart Huckabees* where the main character is followed by his existential crisis sleuth on his bicycle commute to work.

prototype camera attachment was fitted specifically to my handlebars (which vary), and I could not vouch for the skill level of participants to insure the safety of both cyclist and camera. I opted to keep the video-biking role to myself.

I also faced technological limitations in my experimentation with mobile videoing. My attachment apparatus had to be repaired a number of times due to wear created by the impact of the road. I could not record entire rides because the ride outlasted the camera batteries. To accommodate this, I captured rides in intervals. Additionally, video footage takes time to work with. The researcher has to use the footage in real time, and play it over and over to transcribe, maneuver, and code the data. I found this process to be much more time consuming and tedious than working with materials in the written form. Because video has more than verbal dimensions, transcription to the written form doesn't work as well either. I also had to transfer the footage from tape to video file, and this too adds another layer of labor for working with digital media. Working with video, therefore, takes a particular skill set and labor time that must be accommodated for in the research design.[32] Since my research design wasn't centered around video, I did not have the means to reach the potential of this aspect of the project.

I recorded about five hours of video footage. The data produced was very interesting because it captured a multi-dimensional experience in the first person, an experience not often witnessed. As Spinney has found, "In enabling fleeting and ephemeral movements to be played back, what was previously deemed impossible to reflect upon or seemingly insignificant can be dissected in detail" (2011:167). The

[32] Spinney (2011) notes this as well in one of his footnotes.

footage I took illuminates elements of style, rhythm, noise, proximity to cars, buses, exhaust fumes, sidewalks, emotions (like when a noise of surprise is captured in the recording), and other non-verbal features of the journeying experience. Although it must be mentioned that the camera lens distorts reality like any other collection method, I can feel the potential for this methodology in mobile research. Through my experimentation, I have joined others (Murray 2009; Spinney 2009, 2010) in championing this method for research that emphasizes the qualitative, corporeal, and affective aspects of mobility. Not only does it capture affective elements, but the ability to play the footage back to participants allows for the incorporation of participants' own interpretations of their embodied experiences (as Spinney 2011 has done). Video, like the maps I used, can then be a text participants can decode themselves (Spinney 2011). I would have liked to explore these potentials further.

In addition to data collected through field methods, I examined cycling transportation planning and engineering reports, transportation literature, and reports and documents supplied to me by Boston Bikes in-person and through their website. I also compiled news articles on Boston cycling, as well as bicycle research reports done by non-profit organizations in Boston. I used this kind of data primarily to gain insight into how scholars and planners think about transport cycling integration at present, and decipher how this compares with the ways of thinking about this in the past. In this way, I used these documents to reconstruct a way of thinking through time.

Analysis

I conducted Foucauldian-influenced discourse analysis to interpret my data. According to Rose, this method of analysis focuses on issues of power that arise through articulations (practices, texts, rhetoric, etc.) of "a particular knowledge about the world [that] shapes how the world is understood and how things are done in it" (2007:142). Discourse analysis is concerned with the development of discourses as well as with what discourses produce (2007:143, 146). In a way, it is a method of looking sidewise. With this aim, I paid particular attention to the complexities, contradictions, presences, and absences in the data (see Cope 2003:456; Rose 2007:156-167). I then proceeded inductively (Emerson et. al. 1995:151) to generate my interpretations.

To conduct discourse analysis, I used open and focused coding to interpret the data by identifying key themes and patterns (Coffey and Atkinson 1996; Cope 2003; Emerson et. al. 1995; Watson and Till 2010). "Open coding is a form of brainstorming, whereby the researcher revisits materials to think about possible ideas, themes, and issues at different times during the research project. More focused coding is used to identify and clarify patterns and relationships in the primary data collected" (Watson and Till 2010:128). In selecting an analytical route, I chose to focus on that which I had generated considerable data, and thus what seemed to be significant to participants (Emerson et. al. 1995:157). Through coding—open coding at first, and progressively more focused coding as the process of my analysis progressed—I began to accumulate a consistent and considerate amount of data related to safety issues and concerns. Through coding topics,

as opposed to just specific words, I began to identify patterns in the way that participant were discussing safety issues.

Following Karen Till's method of coding in colors (2010:129), I used the highlight function in Word to color code sections of my interview transcripts and fieldnotes as different topics emerged. Some of these topics were "safety," "class," "environment," and "health." Cope (2003) calls this first layer of coding 'descriptive' (2003:452). After descriptively coding the first two documents, chosen at random, I started noting themes. Cope calls this 'analytic coding' (2003:452). I used the comment function in word to start pulling out my overarching themes of analysis. Sometimes these comments were directly related to coded parts of the text, but sometimes they would call attention to a connection between different sections of, say, an interview. This illuminated how thoughts and perspectives changed throughout the interview, like participants' perceptions of bike lanes. As I coded more documents, new themes emerged and old ones became reframed or lumped in with new themes as patterns emerged. Then, I extracted sections from fieldnotes and interview transcripts and categorized them by theme for comparison, noting where there were similarities or differences across data. This helped me identify trends and further develop the themes (Cope 2003:454-455).

In practice, the process of coding my data was much more organic and fluid than I am able to convey. Although I had not actually taken digital highlighters and scissors to my documents while in the field, in reality, analysis had already started in my process of recording fieldnotes. By the time I sat down to "do analysis," the direction of my research had already changed from its initial focus. Instead of focusing most of my attention on

data about sustainability, environmentalism, and class, I was already geared more towards looking at data on bike lane interactions, safety, community, and health. Coding refined these directions further.

I generated considerably more data than I was able to process for a research project the size of a Master's thesis. I had lofty aspirations of utilizing the video data in particular, which ended up as supplemental to my interview transcripts and fieldnotes. Video data is potentially very valuable, however, because of the intensity of labor that working with it entails, as well as being an underexplored, experimental method in geography, it needs particular attention that I directed elsewhere in conducting this project. I had fun exploring different methods, but in the future I would be more precise about which methods I utilize, and conduct less fieldwork overall for a project of equal magnitude.

Overall, this process of analysis produced a shift in focus from environmentalist discourse to discourses of safety. As Foucault instructs, I attempted in my analysis to "move outside the institution and replace it with the overall point of view of the technology of power" (2007:117). I did this by first constructing a historical account of a discursive shift in the way of thinking and doing transport cycling integration in the U.S., or of what Foucault would call an epistemic shift. This work culminated in the first chapter. In the second aspect of analysis that culminated in the second chapter, I then interrogated the strategies and tactics of safety embedded within this discourse. Thirdly, as explored in the third chapter, I then "substitute[d] the external point of view of strategies and tactics for the internal point of view of the function" (Foucault 2007:118). I

took a sidewise glance to the discourse of cycling safety to explore, not the strategies themselves, but how they actually function.

Reflections

This study felt extraordinary preliminary. I now understand why there is often a preliminary stage for dissertations and larger research projects. Without having engaged in prior research on this topic, I began this project from a very theoretical perspective. More than anything else, this project generated a framework for me to refine research questions and methods regarding transport cycling integration, and highlighted directions for further research, of which I will discuss further in the conclusion. I cannot fairly critique myself for something I would not have been able to accomplish, but I would like my studies in the future to generate a more grounded analysis pointed at particular practical problems in transport cycling integration, rather than a project that ultimately points to more abstract theoretical problems. For example, I would like to focus on the specific obstacles and needs of caregivers who also utility cycle, and who are also most often women. An intersection with class could also then be reintegrated in a productive way. In short, I would incorporate a feminist methodology further into my research design.

I would also like my future methods to be more community-based. I want to produce research that corresponds more directly with particular concerns of cyclists in the community of Boston. I would do this by incorporating a preliminary phase in which I would conduct participant-observation and interviews within a community I already

partake in to solidify a research question. I aspire to do collaborative, politically and socially relevant work that bridges the connection between fieldwork and activism (e.g. Kobayashi 1994:74), yet I do not feel I fully succeeded in this endeavor. Designing a research project incorporating more community-based (Austin 2004; Minkler and Wallerstein 2003.) and participatory action methods (e.g. Kindon 2003; Latham 2003; Spinney 2009; Young and Barrett 2001) would be an avenue to pursue this objective.

Watson and Till urge us to consider the research process as a collaboration, not an appropriation (2010:132). I'm not sure my research was either. What I have produced is a document that speaks to my own interests as a scholar and transport cyclist. It is a politicized document that undoubtedly conveys my sympathies and shared goals with those who participated in this research of creating a more equitable, safe, and desirable city in which to utility cycle. Although we share objectives, and even experiences, I only intend, and only claim, to speak for myself. The articulations of others have become my own. I can only hope that what I have said is something to which others can relate.

Chapter Six

Conclusion: Bike Lanes, Safety, and Social Justice

In this thesis, I have given one reading of transportation cycling integration and the meaning of bike lanes in the context of Boston and the U.S. Out of many possibilities, I have taken a socio-discursive approach that emphasizes the meaning and social function of urban cycling infrastructure (namely bike lanes) and the present framework for transportation cycling integration that surrounds it. I have explored the historical processes leading to the appearance of bike lanes on U.S. city streets, how bike lanes are entwined in cycling safety—both in the discursive and embodied dimensions—and how we can view bikeways discourse as a technology of power that can be mobilized to transform social interaction in the city (streets).

Through this exploration, I hope I have shown that, while infrastructure is not an end or a necessary beginning, it does matter; it can be instrumentalized in connecting our imaginaries to our materialities, and our potentialities to our realities. Bike lanes matter in the process of actualizing an imaginary of urban mobility and city life. I have shown how bike lanes, within the bikeways paradigm from which they emerge, are linked to a perspective of safety that is ultimately a social justice concern. More specifically, I have identified the discourse of safety qua inclusivity of which bike lanes are a prominent manifestation. I have interrogated this discourse from the standpoint of both rights-based social justice and Foucauldian security, and from this I advance the notion of bike lanes and inclusivity discourse as a technology of security that has potential for social justice implications.

This thesis has identified everyday mobilities as an area in which a rights-based logic of social justice actually undermines its stated goal. Equity on the ground is not about what is visible, legitimate, represented, or institutionalized into law. Likewise, space-claiming does not necessarily add to equity. It doesn't necessarily change how city space feels or is used; it simply changes they way a city looks. Actually changing how we feel, perceive, live, and move in the city together, as I have already suggested, is about the milieu we create and the nature of encounter we choose to have. As we traverse the city, will we choose movement and actions based on the categorical rights we think we have, or will we choose movement and actions based on a goal to live with and for others? Do we fearfully claim for ourselves and the groups we are a part the space we deem 'ours,' or do we work toward ways to share this limited resource, allowing it to flex and flow as different bodies move through it?

I have presented in this thesis a view of everyday embodied safety in city streets that is not about percentages, probabilities, rationalized risk, or number of injuries per year. Instead, embodied safety, as I have shown, is a social concern that is affective; our moment-by-moment safety depends, not on the markings on the pavement or the roadside signage, but how we make each other feel. We must 'do justice to our grief, passion, and rage' (Butler 2004b, see page 86 for full reproduction). In this way, movements towards safety and equity in the city need to take affective dimensions seriously. An affective approach circumvents the problem of subjectivity inherent in representative frameworks of social justice, and carves a path to actually reach real bodies—two challenges that geographic scholarship on social justice in the city and social justice strategies seated in liberal democratic ideology have not been able to overcome.

More tangibly, what does this mean for movements toward the integration of transport cycling? Advocacy for transport cycling from scholars, planners, and cyclists alike has largely privileged infrastructure and material aspects of equity, and has held an individualized notion of the cycling act. However, this thesis implies that equal attention needs to be given to the relational dimensions of cycling the city. Cycling must be seen within the larger constellation of power relations in the city in which it operates. Cycling is related to historically constituted materialities, subjectivities, identities, reproductive and productive labor, family, gender, ethnicity, sexuality, aesthetics, and everyday experiences of fear and safety. In this way, cycling is hardly an individualized act. It is well and good to understand how bike lanes work, and how they can be mobilized in this context, but we need to establish efforts that reach beyond material infrastructure and access.

For example, Boston's bicycle initiative is truly an equity leader in the U.S. that stretches the mould. Beyond attention to bike lanes and racks, the city has established the Roll It Forward program that distributes refurbished bicycles to low income residents, offers free bike repair at Farmer's Markets in low income neighborhoods, and, in conjunction with the Boston Public Health Commission, offers subsidized memberships and free helmets to the city's new bike share system to low income residents. These programs are innovative, yet they all assume that the equity issue is individual access to bicycles. Is it? Looking at safety as an equity issue and highlighting dimensions of fear, as I have done in this thesis, points to ways in which equity issues for transport cycling are much more than that.

Equity is not simply a matter of changing the demographic percentages of people who have access to a working bicycle—although it is certainly part—equity efforts must also acknowledge equity as a state of being. If people have bicycles, but are responsible to perform duties that are prohibitive of riding a bicycle, are afraid to ride them, or are uncomfortable with what riding a bicycle might expose or invite into their being, then the number of bike lanes, bicycles, or helmets in the hands of marginalized people doesn't really do much. In other words, material access and infrastructural shifts do not make up the difference between 1.65 and 30 percent of trips in Boston made by bike. We need to expand our understandings and strategies. This thesis suggests viewing safety and equity holistically together, and developing programs that precisely link cycling safety with cycling equity. Included in this strategy should be support for systems that emerge from marginalized populations (as opposed to just providing access to systems created though dominant perspectives). As transport cycling is part of wider complete streets and sustainable cities objectives, efforts towards these goals would do well to consider these lessons as well.

With all of that said, I have left the details undone. This thesis is foremost a theoretical project. In considering my stated goals, I am aware of the possible contradiction that this implies. For my concern being real bodies in real circumstances of everyday life, I have ended with some rather abstract points. This thesis is a beginning. It has been a necessary foundation to my scholarly endeavor to explore, understand, and aid transportation cycling in the U.S. and it has led me to many future directions. Most prominently, I would continue my research on transport cycling by conducting projects in the areas of health, gender, and care-taking.

A discourse analysis of the health theme related to current transport cycling enthusiasm and promotion in Boston and in the U.S. would complete my theoretical project of understanding the biopolitics of bike-commuting. Safety is just half of this picture. As I've noted in footnotes throughout, obesity prevention and air quality grants provide much of the funding for transport cycling development in cities. Furthermore, through my fieldwork I found there to be a significant emphasis from participants and the branding of cycling events and initiatives on bodily health. Transport cycling is branded as a way to have a more active, healthier, and cleaner lifestyle. To interrogate what 'health' means in this context, and the 'health apparatus' that contains it, would be both interesting and important to truly understand the biopolitics of bike commuting.

Second, as I undertook the process of analysis, the issue of gender became a much more prominent interest than when I had set out. As I spoke to more people, attended more events, and inhabited and traversed more cycling spaces in Boston, I started noticing performances of gender in these contexts, who was present and absent, and who fulfilled what roles. Interestingly, I noted that a population that seemed almost entirely absent from the transport cycling scene was non-white women. I would like to conduct a study to explore why this is. In her survey of literature on gender and mobility, Hanson (2010) provides a beginning to this inquiry. She rightfully articulates:

> If all we have is a finding (e.g., in the US women ride bikes less than men) without knowing the variety of circumstances that this generalization masks or what it means to the people involved in each of these diverse circumstances or how it relates to people's gender and class identities, it is hard to see how the finding might link up to any sustainable mobility effort aimed at converting auto trips to bike trips, for example (2010:18).

Gender is a key component in transportation cycling integration. We need more than a body count. We need to qualitatively investigate what undergirds these demographic

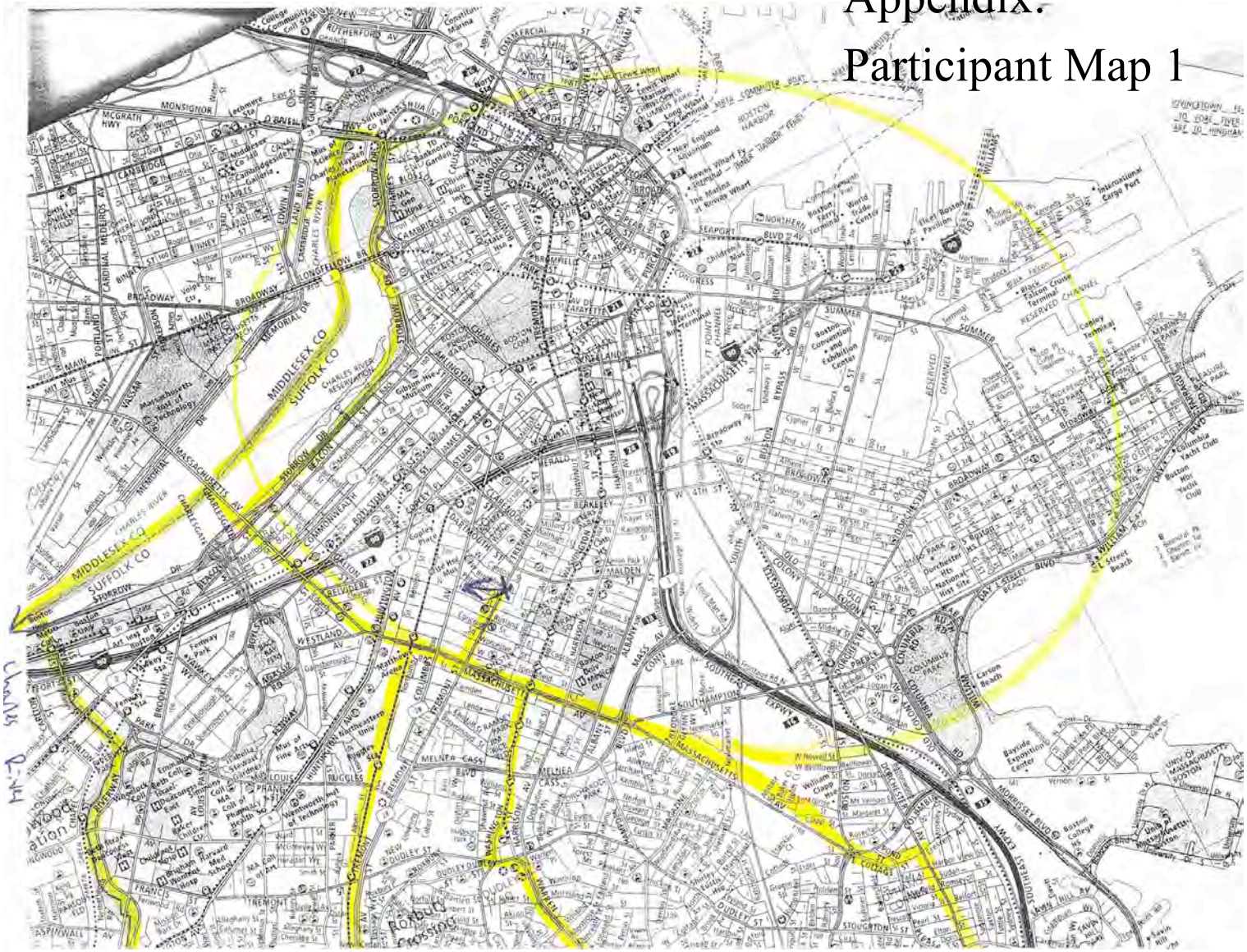
numbers and use these studies to inform cycling integration efforts.

Related to my gendered observations of transport cycling in the city, I noticed the infrequency of seeing adults and children cycling together. I saw kids cycling with other kids in their neighborhood, and I saw adults commuting to work, or the store, or wherever they needed to go, but I rarely saw adults and children commuting together. I began to question the challenges in utilizing cycling for transportation in the context of care-taking and I realized that this is an entirely different perspective to thinking of cycling as an individual activity. Most often in the U.S., transport cycling is seen as a one-person activity. This, I would argue, is a drastic oversight for the actualization of cycling as a significant transport option in the U.S. We need to research and ask: What are the class and gender dimensions implicit in our individualist way of thinking about transport cycling? What kinds of obstacles, even barriers, to using bicycles for transportation are created by that way of thinking? What are the considerations involved in cycling with dependents? And how can we respond to these needs in order to better integrate cycling as a viable transport mode in the U.S.? My hunch is that while the focus of planners and advocates has been on infrastructure and class, dependent cycling is also a key component. I would love to conduct this study and pilot a project to address these issues.

If one thing has become clear to me throughout the process of this thesis project, it is that transport cycling, and transportation cycling integration, is not about individuals, but about a constellation of relations. Whether that means thinking a cycling body in terms of its familial network, labor relation, subjectivity, access to resources, or part in the flow of movement throughout the city, cycling for transportation is about more than the very body that cycles. To acknowledge and act on this realization, we need to think in

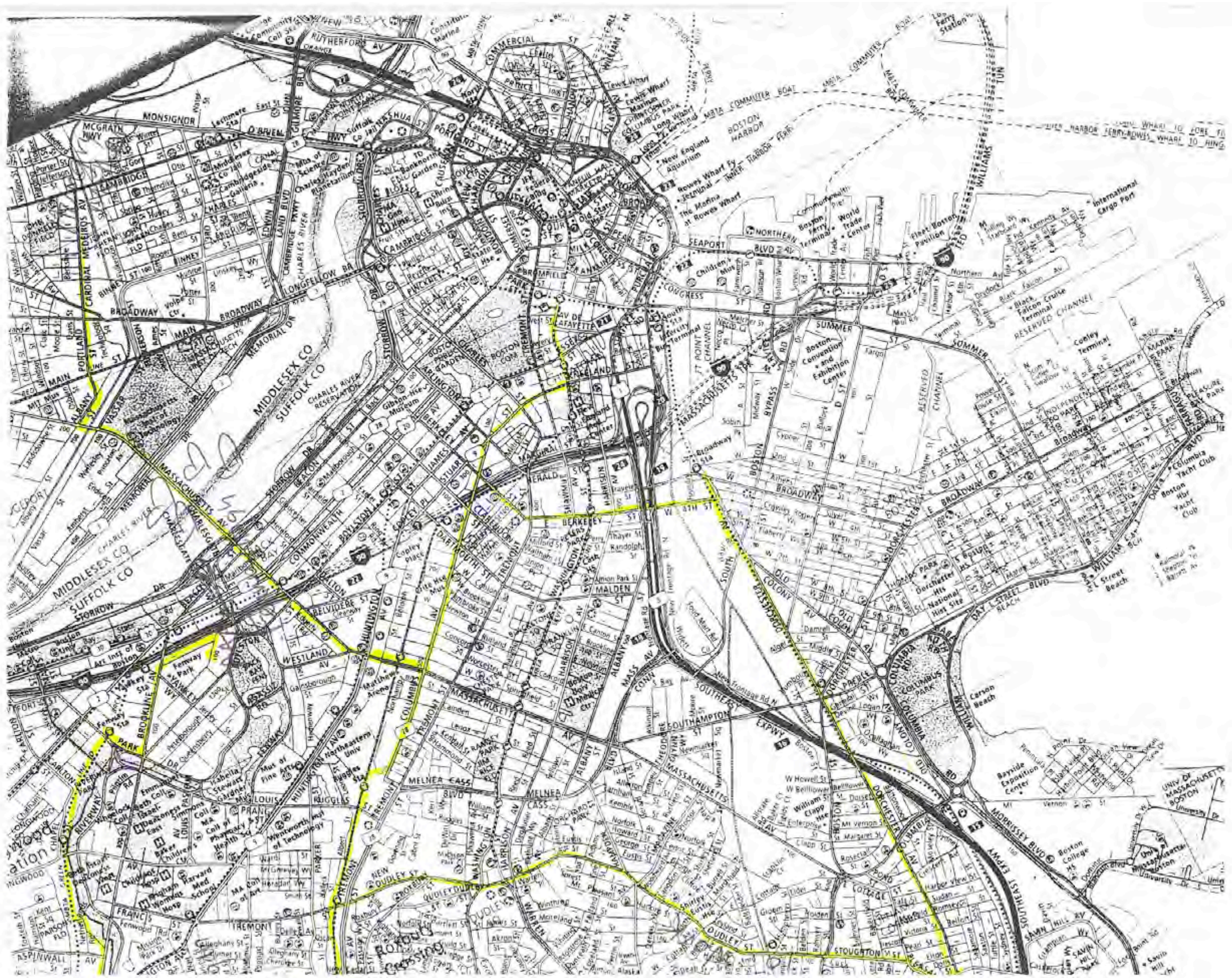
terms of the milieu, orient towards affect, and engage at the sites of our and each other's bodies.

Appendix:
Participant Map 1




Brookline Village
Jamaica Pond
Jamaicaway
Arnold Arboretum
Arborway
Franklin Park
William J Devine Golf Course
Scarboro Pond
Forest Hills Cemetery
Forest Hills
Mt Hope Cemetery
Franklin Field
Boston
Milton Village
Freeport St
Dorchester Av
Washington St
Walk Hill St
Morton St
Talbot Av
Blue Hill Av
Seaver St
Columbus Av
Cummins Hwy
Centre St
American Legion Hwy
Highland Village


Participant Map 2
Brookline Village
Boston
Mattapan Village
FOREST HILLS CEMETERY
MT HOPE CEMETERY
FRANKLIN PARK
WILLIAM J DEVINE GOLF COURSE
SCARBORO POND
JAMAICA POND
Arnold Arboretum
FRANKLIN FIELD
MORTON
DORCHESTER PARK
ARBORWAY
AMERICAN LEGION HWY
VETERANS DR
WASHINGTON ST
BLUE HILL AV
TALBOT AV
MORTON ST
WALK HILL ST
SOUTH ST
FOREST HILLS
HARVARD
WOODHAVEN
WATERWORKS
FREEPORT ST
ASHMONT
DORCHESTER AV
GALLIVAN
NEPONSET
CENTRE ST
VIEW PKWY
SCHOOL ST
CHESTNUT
PERKINS
HEATH
MARTIN LUTHER KING JR BLVD
COLUMBUS AV
QUINCY
TOWNSEND
WALNUT AV
HOWARD
SEAVER ST
GLEN RD
SHIRLEY ST
LAUREL
MAY
UKRAINE WY
FALCON
WORCESTER
HOMESTEAD
HUTCHINGS
BROOKLEDGE
GENEVA AV
NORFOLK
MORTON
WOODLAWN
WOODROW
MARKWOOD
MILTON
RIVER
CEDAR
CLIFFORD
ELLERTON
DUNBAR
DOWNER
ELLINGTON
ELMORE
ELLIOT
ELDRIDGE
ELMER
ELLSWORTH
ELLINWOOD
ELLICOTT
ELLERY
ELLINGTON
ELMORE
ELLIOT
ELDRIDGE
ELMER
ELLSWORTH
ELLINWOOD
ELLICOTT
ELLERY


BOSTON HARBOR
MIDDLESEX CO
SUFFOLK CO
CHARLES RIVER RESERVATION
RESERVED CHANNEL
Carson Beach
MASSACHUSETTS AV
COMMONWEALTH
STORROW DR
MEMORIAL DR
LONGFELLOW BR
CAMBRIDGE ST
SEAPORT BLVD
CONGRESS ST
SUMMER
BROADWAY
SOUTHAMPTON
MELNEA CASS BLVD
WESTLAND AV
HUNTINGTON AV
COLUMBUS AV
DUDLEY ST
STOUGHTON ST
MORRISSEY BLVD
Boston Convention and Exhibition Center
Columbus Park
Fenway Park
L Street Beach

References

AASHTO Task Force on Geometric Design. (1999) Guide For the Development of Bicycle Facilities. ed. American Association of State Highway and Transportation Officials. Washington DC: American Association of State Highway and Transportation Officials.

Adler, Ben. (2011) Wheels of Progress. *The Nation* October 17, 22-24.

Aigner, Erin. (2009) Tally/ Two Wheels; For More Bicycles, More Lanes, Racks and Signs. *New York Times* September 13. http://query.nytimes.com/gst/fullpage.html?res=9507E0D71738F930A2575ACA96F9C8B63 (last accessed 02-20-10)

Akar, Gulsah and Kelly Clifton. (2009) Influence of Individual Perceptions and Bicycle Infrastructure on Decision to Bike. *Transportation Research Record,* 2140**,** 165-172.

Aldred, Rachel. (2010) 'On the Outside': Constructing Cyclcing Citizenship. *Social and Cultural Geography,* 11:1**,** 35-52.

Allen, John. (1981) *The Complete Book of Bicycle Commuting*. Emmaus: Rodale Press.

Alliance for Biking and Walking. (2010) Bicycling and Walking Benchmarking Report. Washington DC.

Anderson, Jon. (2004) Talking Whilst Walking: A Geographical Archaeology of Knowledge. *Area,* 36:3**,** 254-261.

Austin, Diane. (2004) Partnerships, Not Projects! Improving the Environment Through Collaborative Research and Action. *Human Organization,* 63:4**,** 419-430.

Baker, Linda. (2009) Shifting Gears. *Scientific American* 301:4.

Batturbury, Simon. (2003) Environmental Activism and Social Networks: Campaigning for Bicycles and Alternative Transport in West London. *Annals of the American Academy of Political and Social Science,* 590**,** 150-169.

Bernard, H. Russell. 2002. *Research Methods in Anthropology*. Walnut Creek: AltaMira Press.

Bicycle Federation of America. (1992) Integrating Bicycle and Pedestrian Considerations Into State and Local Transportation Planning, Design, and Operations. ed. Federal Highway Administration. Federal Highway Administration.

Blickstein, Susan. (2010) Automobility and the Politics of Bicycling in New York City. *International Journal of Urban and Regional Research,* 34:4**,** 886-905.

Blickstein, Susan and Susan Hanson. (2001) Critical Mass: Forging a Politics of Sustainabile Mobility in the Information Age. *Transportation,* 28**,** 347-362.

Blomley, Nicholas. (1994) Mobility, Empowerment, and the Rights Revolution. *Political Geography,* 13:5**,** 407-422.

--- (2007a) Civil Rights Meet Civil Engineering: Urban Public Space and Traffic Logic. *Canadian Journal of Law and Society,* 22:2**,** 55-72.

--- (2007b) How to Turn a Beggar into a Bus Stop: Law. Traffic and the 'Function of the Place'. *Urban Studies,* 44:9**,** 1697-1712.

--- (2010) The Right to Pass Freely: Circulation, Begging, and The Bounded Self. *Social and Legal Studies,* 19:3**,** 331-350.

--- (2011) *Rights of Passage: Sidwalks and the Regulation of Public Flow*. New York: Routledge.
Bondi, Liz and Rose Damaris. (2003) Constructing Gender, Constructing the Urban: A review of Anglo-American feminist urban geography. *Gender, Place and Culture,* 10:3**,** 229-245.
Boston Transportation Department. (2001) Access Boston 2000-2010: Boston Bicycle Plan. ed. Boston Transportation Department. Boston.
--- (2010) Boston Complete Streets. http://bostoncompletestreets.org/ (last accessed February 2011).
Brownlow, Alec. (2005) A Geography of Men's Fear. *Geoforum,* 36**,** 581-592.
Buehler, Ralph and John Pucher. (2009/2010) Cycling to Sustainability in Amsterdam. *Sustain,* 21**,** 35-40.
Butler, Judith. (2004a) *Undoing Gender*. New York: Routledge.
--- (2004b) *Precarious Life: The Powers of Mourning and Violence*. London: Verso.
Cameron, Angus. (2007) Geographies of Welfare and Exlcusion: Reconstituting the 'Public'. *Progress in Human Geography,* 31:4**,** 519-526.
Carlsson, Chris. (2002) *Critical Mass: Bicycling's Defiant Celebration*. Oakland: AK Press.
--- (2010) Nowtopia: Strategic Exoduc? *Antipode,* 42**,** 924-953.
Chih-Wei, Pai. (2011) Overtaing, Rear-End, and Door Crashes Involving Bicycles: An Empirical Investigation. *Accident Analysis and Prevention,* 43:3**,** 1228-1235.
City of Boston. (2011) Boston Bikes. City of Boston. http://www.cityofboston.gov/bikes/ (last accessed 16 February 2012).
Coffey, Amanda and Paul Atkinson. (1996) Concepts and Coding. In *Making Sense of Qualitative Data*, 26-53. Thousand Oaks: Sage.
Cope, Meghan. (2003) Coding Transcripts and Diaries. In *Key Methods in Geography,* ed. Nicholas Clifford and Gill Valentine, 445-459. London: Sage.
Crang, Mike. (2002) Qualitative Methods: The New Orthodoxy? *Progress in Human Geography,* 26**,** 647-655.
Cresswell, Tim. (2010) Towards a Politics of Mobility. *Environment and Planning D: Society and Space,* 28**,** 17-31.
Cupples, Julie. (2011) Cyclists, Environmentalists and Equitable Urban Ecologies: a response to Koglin. *Area,* 43:2**,** 228-230.
Cupples, Julie and Elisabeth Ridley. (2008) Towards a Heterogeneous Environmental Responsibility: Sustainability and Cycling Fundamentalism. *Area,* 40:2**,** 254-264.
D'Andrea, Anthony et. al. (2011) Methodological Challenges and Innovations in Mobilities Research. *Mobilities,* 6:2**,** 149-160.
Day, Kristin. (2006) Being Feared: Masculinity and Race in Public Space. *Environment and Planning A,* 38**,** 569-586.
Dell, Kristena. (2008) Bike-sharing Gets Smart. *Time* 171(25): 113-115.
DeVerteuil, Geoffry, Jon May, and Jurgen von Mahs (2009) Complexity Not Collapse: The Geographies of Homelessness in a 'Punitive' Age. *Progress in Human Geography,* 33:5**,** 646-666.
Dill, Jennifer and Theresa Carr. (2003) Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Them, Commuters Will Use Them. *Transportation Research Record,* 1828**,** 116-123.

Doan, Petra. (2007) Queers in the American City: Transgendered perceptions of urban space. *Gender, Place and Culture,* 14:1**,** 57-74.
Dyck, Isabel. (2002) Further Notes On Feminist Research: Embodied Knowledge in Place. In *Feminist Geography in Practice,* ed. Pamela Moss, 234-264. Malden: Blackwell.
Emerson, R. M., Rachel Fretz and Linda Shaw. (1995) Processing Fieldnotes: Coding and Memoing. In *Writing Ethnographic Fieldnotes*, 142-168. Chicago: University of Chicago Press.
Emond, Catherine, Wei Tang, and Susan Handy. (2009) Explaining Gender Difference in Bicycling Behavior. *Transportation Research Record,* 2125**,** 16-25.
England, Kim. (1994) Getting Personal: Reflexivity, Positionality, and Feminist Research. *Professional Geographer,* 46:1**,** 80-89.
England, Marcia and Stephanie Simon. (2010) Scary Cities: Urban Geographies of Fear, Difference and Belonging. *Social and Cultural Geography,* 11:3**,** 201-207.
Epperson, Bruce. (2010) *Peddling Bicycles to America: The Rise of an Industry*. Jefferson: McFarland and Company, Inc., Publishers.
Evans, James and Phil Jones. (2011) The Walking Interview: Methodology, Mobility, and Place. *Applied Geography,* 31**,** 849-858.
Falconer Al-Hindi, Karen and Hope Kawabata. (2002) Towards a More Fully Reflexive Feminist Geography. In *Feminist Geography in Practice,* ed. Pamela Moss, 103-115. Malden: Blackwell.
Fincham, Ben. (2007) Bicycle Messengers: Image, Identity and Community. In *Cycling and Society*, ed. Dave Horton, Paul Rosen, and Peter Cox, 179-195. Burlington: Ashgate.
Fisher, Dennis. (2007) Boston By Bike. *Boston Globe* September 20. http://www.boston.com/news/globe/living/calendar/articles/2007/09/20/boston_b_bike/ (last accessed 16 February 2012).
Florida, Richard. (2002) The Economic Geography of Talent. *Annals of the Association of American Geographers* 92:4, 743-755.
Forester, John. (1971) [1984]. *Effective Cycling*. Cambridge: MIT Press.
--- (1977) [1994]. *Bicycle Transportation: A Handbook for Cycling Transportation Engineers*. Cambridge: MIT Press.
--- (2001) The Bicycle Transportation Controversy. *Transportation Quarterly,* 55:2**,** 7-17.
--- (2009) National Bicycle Transportation Policy Contradicts Itself. http://www.johnforester.com/Articles/Government/Policy%20Issue.pdf (last accessed February 2012).
Foucault, Michel. (2007) *Security, Territory, Population: Lectures at the College de France 1977-1978*. New York: Picador.
Freedman, Nicole. January 27, 2011. Boston Bike Czar Calls City "Bike-friendly," Says Ridership Has Doubled in Three Years. *Boston.com*. http://www.boston.com/yourtown/news/downtown/2011/01/boston_bike_czar_calls_city_bi.html (last accessed February 2012).
Freund, Peter and George Martin. (2007) Hyperautomobility, the Social Organization of Space, and Health. *Mobilities,* 2:1**,** 37-49.
Furness, Zach. (2005a) Biketivism and Technology: Historical Reflections and Appropriations. *Social Epistemology,* 19:4**,** 401-417.

--- (2005b) "Put the Fun Between Your Legs!": The Politics and Counterculture of the Bicycle. In *Arts and Sciences*. Pittsburgh: University of Pittsburgh.
--- (2010) *One Less Car: Bicycling and the Politics of Automobility*. Philadelphia: Temple University Press.
Fyfe, Nicholas, Jon Bannister, and Ade Kearns. (2006) (In)civility and The City. *Urban Studies,* 43:5/6**,** 853-861.
Gilbert, Melissa. (1994) The Politics of Location: Doing Feminist Research at "Home". *Professional Geographer,* 46:1**,** 90-96.
Haake, Bjorn. (2009) The Importance of Bicycling Education. *World Transport Policy and Practice,* 15:1**,** 47-56.
Hannam, Kevin, Mimi Sheller and John Urry. (2006) Editorial: Mobilities, Immobilities, and Moorings. *Mobilities,* 1:1**,** 1-22.
Hanson, Susan. (2010) Gender and Mobility: New Approaches For Informing Sustainability. *Gender, Place and Culture,* 17:1**,** 5-23.
Heesch, Kristian, Jan Garrad, and Shannon Sahiqvist. (2011) Incidence, Severety and Correlates of Bicycling Injuries in a Sample of Cyclists in Queensland, Australia. *Accident Analysis and Prevention,* 43:6**,** 2085-2092.
Helliker, Kevin. (2006) The Cycling Commute Gets Chic. *Wall Street Journal* May 11.
Henderson, Jason. (2009) The Space of Parking: Mapping the Politics of Mobility in San Francisco. *Antipode,* 41:1**,** 70-91.
Holtzman, David. (2008) Share-A-Bike: Advocates from Paris to D.C. See Bicycle Exchanges As Part of the Answer to Congestion. *Planning* May, 20-23.
Horton, Dave. (2006) Environmentalism and the Bicycle. *Environmental Politics,* 15:1**,** 41-58.
--- (2007) Fear of Cycling. In *Cycling and Society,* ed. Dave Horton, Paul Rosen and Peter Cox, 133-152. Burlington: Ashgate.
Horton, Dave, Paul Rosen and Peter Cox. (2007) Cycling and Society. Burlington: Ashgate.
Hyndman, Jennifer. (2001) The Field As Here and Now, Not There and Then. *Geographical Review,* 91:1/2**,** 262-273.
Jenson, Ole. (2009) Flows of Meaning, Cultures of Movements--Urban Mobility as Meaningful Everyday Life Practice. *Mobilities,* 4:1**,** 139-158.
Jones III, John Paul, Heidi Nast, and Susan Roberts. (1997a) Crossing Thresholds. In *Thresholds in Feminist Geography: Difference, Methodology, Representation,* ed. John Paul Jones III, Heidi Nast, and Susan Roberts, 393-405. Lanham: Rowman and Littlefield.
--- (1997b) Thresholds in Feminist Geography: Difference, Methodology, Representation. In *Thresholds in Feminist Geography: Difference, Methodology, Representation,* ed. John Paul Jones III, Heidi Nast, and Susan Roberts, xxi-xxxix. Lanham: Rowman and Littlefield.
Jones, Phil. (2005) Performing the City: A Body and a Bicycle Take on Birmingham, UK. *Social and Cultural Geography,* 6:6**,** 813-830.
Jones, Phil and D. Burwood. (forthcoming) Cycling and the City: Reflections of Commuting Practices. *Liminalities: A Journal of Performance Studies*.
Jones, Phil et. al. (2008) Exploring Space and Place with Walking. *Journal of Research Practice,* 4:2**,** article D2.

Jordan, Shane. (2009) Boston Bike Renaissance. *Momentum,* 37, 15-20.
Katz, Cindi. (1994) Playing the Field: Questions of Fieldwork in Geography. *Professional Geographer,* 46:1**,** 67-72.
Kawash, Samira. (1998) The Homeless Body. *Public Culture,* 10:2**,** 319-339.
Kern, Leslie. (2005) In Place and At Home in the City: Connecting Privilege, Safety and Belonging for Women in Toronto. *Gender, Place and Culture,* 12:3**,** 357-377.
Khayesi, Meleckidzedeck, Heiner Monheim, and Johannes Michale Nebe (2010) Negotiating "Streets for All" in Urban Transport Planning: The Case for Pedestrians, Cyclists and Street Vendors in Nairobi, Kenya. *Antipode,* 42:1**,** 103-126.
Kindon, Sara. (2003) Participatory Video in Geographic Research: A Feminist Practice of Looking? *Area,* 35:2**,** 142-153.
Kobayashi, Audrey. (1994) Coloring the Field: gender, "Race," and the Politics of Fieldwork. *Professional Geographer,* 46:1**,** 73-80.
--- (1997) The Paradox of Difference and Diversity (or, Why the Threshold Keeps Moving). In *Thresholds in Feminist Geography: Difference, Methodology, and Representation,* ed. John Paul Jones III, Heidi Nast, and Susan Roberts, 3-9. Lanham: Rowman and Littlefield.
Koglin, Till. (2011) Planning for Cycling = Planning for Equity: a response to Cupples and Ridley 'Towards a Heterogenous Environmental Responsibility: Sustainability and Cycling Fundamentalism' (2008). *Area,* 43:2**,** 225-227.
Krizek, Kevin. (2006) Two Approaches to Valuing Some of Bicycle Facilities' Presumed Benefits. *Journal of the American Planning Association,* 72:3**,** 309-319.
Krizek, Kevin, Gary Barnes, and Kristin Thompson. (2009) Analyzing the Effect of Bicycle Facilities on Commute Mode Share Over Time. *Journal of Urban Planning and Development,* June**,** 66-73.
Krizek, Kevin, Pamela Johnson, and Nebiyou Tilahun. (2004) Gender Differences in Bicycling Behavior and Facility Preferences. In *Research on Women's Issues in Transportation,* ed. Transportation Research Board. Chicago: Transportation Research Board.
Krizek, Kevin and Rio Roland. (2005) What Is At The End of The Road? Understanding Discontinuities of On-Street Bicycle Lanes in Urban Settings. *Transportation Research Part D,* 10**,** 55-68.
LaHood, Ray. (2010) My View from Atop the Table at the National Bike Summit. In *Fast Lane: The Official Blog of the U.S. Secretary of Transportation* May 15. United States Department of Transportation. http://fastlane.dot.gov/2010/03/my-view-from-atop-the-table-at-the-national-bike-summit.html (last accessed February 2012).
Latham, Alan. (2003) Research, Performance, and Doing Human Geography: Some Reflections on the Diary-Photograph, Diary-Interview Method. *Environment and Planning A,* 35**,** 1993-2017.
League of American Bicyclists. 2000-2012. Bicycle Commuter Tax Provision: Frequently Asked Questions. http://www.bikeleague.org/news/100708faq.php, (last accessed 16 February 2012).
LivableStreets. (2011) How is Boston Completing Its Streets?: LivableStreets StreetTalk with Vaneet Gupta. E-flyer (received February 17, 2011).

Loukaitou-Sideris, Anastasia. (2006) Is It safe to Walk? Neighborhood Safety and Security Considerations and Their Effects on Walking. *Journal of Planning Literature,* 20:3**,** 219-232.
Mapes, Jeff. (2009) *Pedaling Revolution: How Cyclists are Changing American Cities*. Corvallis: Oregon State University Press.
Massumi, Brian. (2002) *Parables for the Virtual: Movement, Affect, Sensation*. Durham: Duke University Press.
Matlack, Tom. (2009) Is Boston Ready for a Revolution? *Boston Globe* April 12. http://www.boston.com/bostonglobe/magazine/articles/2009/04/12/is_boston_ready_for_a_revolution/?page=1 (last accessed 16 February 2012).
Mayor's Office. April 15, 2010. Mayor Menino Convenes First-Ever Bicycling Safety Summit. *Mayor's Press Office.* http://www.cityofboston.gov/news/default.aspx?id=4624 (last accessed 16 February 2012).
McCann, Eugene. (2002) Space, Citizenship and the Right to the City: a brief overview. *Geojournal,* 58**,** 77-79.
McCarthy, Deborah. (2011) 'I'm a Normal Person': An Examination of How Utilitarian Cyclists in Charleston South Carolina Use an Insider/Outsider Framework to make Sense of Risks. *Urban Studies*, 48:7**,** 1439-1455.
Meletiou, Mary Paul, Judson Lawrie, Thomas Cook, Sarah O'Brien, and John Guenther. (2005) Economic Impast of Investments in Bicycle Facilities: Case Study of North Carolina's Northrn Outer Banks. *Transportation Research Record,* 1939**,** 15-21.
Menino, Tom and Nicole Freedman. (2009) State of the Hub: Boston Bikes Year-End Update, 2009. Boston: City of Boston.
--- (2011) State of the Hub: Boston Bikes Year-End Update, 2010. Boston: City of Boston.
Middleton, Jennie. (2010) Sense and the City: Exploring the Embodied Geographies of Walking. *Social and Cultural Geography,* 11:6**,** 575-596.
Miller, Steve. March 8, 2011. Safe Cycling--Actual, Subjective, Social; Solo or Group. In *Steve Miller's Blog*. http://blog.livablestreets.info/?p=365 (last accessed 16 February 2012).
Minkler, Meredith and Nina Wallerstein. (2003) *Community Based Participatory Research for Health*. San Fransisco: Jossey-Bass.
Mitchell, Don. (1997) The Annihilation of space by law: The roots and implications of anit-homelessness laws in the United States. *Antipode,* 29**,** 303-335.
--- (1998) Anti-homeless laws and public space: Further constitutional issues. *Urban Geography,* 19**,** 98-104.
--- (2003) *The Right to the City: Social Justice and the Fight for Public Space*. New York: The Guilford Press.
--- (2005) The S.U.V Model of Citizenship: Floating Bubbles, Buffer Zones, and the Rise of the "Purely Atomic" Individual. *Political Geography,* 24**,** 77-100.
Monheim, Heiner. (1996) Mobility Without Cars. *Transportation and Environment,* Summer 31-34.

Moss, Pamela. (2002) Taking On, Thinking About, and Doing Femenist Research in Geography. In *Feminist Geography in Practice,* ed. Pamela Moss, 1-17. Malden: Blackwell.
Moudon, Anne, Chanam Lee, Allen Cheadle, Cheza Collier, Donna Johnson, Thomas Schmid, and Robert Weather. (2005) Cycling and the Built Environment, a US Perspective. *Transportation Research Part D,* 10**,** 245-261.
Munt, Sally. (2002(The Lesbian Flaneur. In *The Unknown City,* ed. Iain Borden, Joe Kerr, and Jane Rendell, 248-261. Cambridge: MIT Press.
Murray, Leslie. (2009) Looking At and Looking Back: Visualization in Mobile Research. *Qualitative Research,* 9:4**,** 469-488.
Nast, Heidi. (1994) Women in the Field: Critial Feminist Methodologies and Theoretical Perpsectives. *Professional Geographer,* 46:1**,** 54-66.
National Complete Streets Coalition. (2005-2011a) Homepage. http://www.completestreets.org/ (last accessed 16 February 2012).
--- (2005-2011b) Complete Streets FAQ.http://www.completestreets.org/complete-streets-fundamentals/complete-streetsfaq/ (last accessed 16 February 2012).
NHTSA National Center for Statistics and Analysis. 2008. Traffic Safety Facts 2008: Bicyclists and Other Cyclists. ed. NHTSA. Washington DC: National Highway Traffic Safety Administration.
--- (2009) Traffic Safety Facts 2009: Bicyclists and Other Cyclists. ed. NHTSA. Washington DC: National Highway Traffic Safety Administration.
Pain, Rachel. (1991) Space, Sexual Violence and Social Control: Integrating Geographical and Feminist Analyses of Women's Fear of Crime. *Progress in Human Geography,* 15:4**,** 415-431.
--- (2000) Place, Social Relations and the Fear of Crime: A Review. *Progress in Human Geography,* 24:3**,** 365-387.
--- (2001) Gender, Race, Age and Fear in the City. *Urban Studies,* 38:5/6**,** 899-913.
Pain, Rachel and Tim Townshend. (2002) A Safer City Centre For All? Senses of "Community Safety" in Newcastle upon Tyne. *Geoforum,* 33**,** 105-119.
Parkin, John, Tim Ryley, and Tim Jones. (2007) Barriers to Cycling: An Exploration of Quantitative Analyses. In *Cycling and Society,* ed. Dave Horton, Paul Rosen and Peter Cox, 67-82. Burlington: Ashgate.
Philip, L. (1998) Combining Quantitative and Qualitative Approaches to Social Research in Human Geography – an impossible mixture? *Environment and Planning A,* 30**,** 261-271.
Pink, Sara. (2007) Walking With Video. *Visual Studies,* 22:3**,** 240-252.
Pucher, John. (2001) Cycling Safety on Bikeways vs. Roads. *Transportation Quarterly,* 55:4**,** pages unavailable.
Pucher, John and Ralph Buehler. (2007) At the Frontiers of Cycling: Policy Innovations in the Netherlands, Denmark, and Germany. *World Transport Policy and Practice,* 13:3**,** 9-56.
--- (2009) Cycling For a Few or For Everyone?: The Importance of Social Justice in Cycling Policy. *World Transport Policy and Practice,* 15:1**,** 57-64.
Pucher, John and Lewis Dijkstra. (2000) Making Walking and Cycling Safer: Lessons From Europe. *Transportation Quarterly* 54:3, 25-50.

Pucher, John, Charles Komanoff, and Paul Schimek. (1999) Bicycle Renaissance in North America? Recent Trends and Alternative Policies to Promote Bicycling. *Transportation Research Part A,* 33**,** 625-654.

Pucher, John, Lewis Thorwaldson, Ralph Buehler, and Nicholas Klein (2010) Cycling in New York: Innovative Policies at the Urban Frontier. *World Transport Policy and Practice,* 16**,** 1-54.

Purcell, Mark. (2002) Excavating Lefebvre: The Right to the City and Its Urban Politics of the Inhabitant. *GeoJournal,* 58**,** 99-108.

Rastogi, Rajat. (2011) Promotion of Non-Motorized Modes as a Sustainable Transportation Option: Policy and Planning Issues. *Current Science,* 11:9**,** 1340-1348.

Reynolds, Conor C.O., M. Anne Harris, Kay Teschke, Peter A. Cripton, and Meghan Winters. (2009) The impact of transportation infrastructure on bicycling injuries and crashes: a review of the literature. *Environmental Health,* 8:47**,** unavailable.

Ruddick, S. (1996) *Young and Homeless in Hollywood: Mapping Social Identities*. New York: Routledge.

Sandar, Tin, Alistar Woodward, Simon Thornley et. al. (2011) Regional Variations in Pedal Cyclist Injuries in new Zealand: Safety in Numbers or Risk in Scarcity? *Australian and New Zealand Journal of Public Health,* 34:4**,** 357-363.

Schepers, J. et. al. (2011) Road Factors and Bicycle-Motor Vehicle Crashes at Unsignalized Prioroty Intersections. *Accident Analysis and Prevention,* 43:3**,** 853-861.

Sharpe, P., E. Burroughs, and S. Hooker (2011) Promoting a Bicycle-Friendly Environment: Community Assessment and Action. *Progress in Community Health Partnerships: Research, Education and Action,* 5:2**,** 151-159.

Shaw, Jon and Markus Hesse. (2010) Transport, Geography and the 'New' Mobilities. *Transactions of the Institute of British Geographers,* 35**,** 305-312.

Shay, Elizabeth and Asad Khattak. (2010) Towards Sustainable Transport: Conventional and Disruptive Approaches in the U.S. Context. *International Journal of Sustainable Transport,* 4:1**,** 14-40.

Sheller, Mimi. (2004) Automotive Emotions: Feeling the Car. *Theory, Culture and Society,* 21:4/5**,** 221-242.

Sheller, Mimi and John Urry. (2000) The City and The Car. *International Journal of Urban and Regional Research,* 24:4**,** 737-757.

Simon, Stephanie. (2010) *Securing a Space of the Future: Pre and Post 9/11 Threat Imaginaries and Prosaic Geographies of Security in Boston and New York City* (PhD diss., University of Kentucky).

Skinner, David and Paul Rosen. (2007) Hell Is Other Cyclists: Rethinking Transport and Identity. In *Cycling and Society,* ed. Dave Horton, Paul Rosen and Peter Cox, 81-96. Burlington: Ashgate.

Slocum, Rachel. (2007) Whiteness, Space and Alternative Food Practice. *Geoforum,* 38**,** 520-533.

--- (2008) Thinking Race Through Corporeal Feminist Theory: Divisions and Intimaces at the Minneapolis Farmers' Market. *Social and Cultural Geography,* 9:8**,** 849-869.

Sparks, Tony. (2010) Broke Not Broken: Rights, Privacy, and Homelessness in Seattle. *Urban Geography,* 31:6**,** 842-862.
Spinney, Justin. (2006) A Place of Sense: A Kinaesthetic Ethnography of Cyclists on Mont Ventoux. *Environment and Planning D: Society and Space,* 24**,** 709-732.
--- (2007) Cycling the City: Non-Place and the Sensory Construction of Meaning in a Mobile Practice. In *Cycling and Society,* ed. Dave Horton, Paul Rosen and Peter Cox, 25-45. Burlington: Ashgate.
--- (2009) Cycling the City: Movement, Meaning and Method. *Geography Compass,* 3:2**,** 817-835.
--- (2010) Performing Resistance? Re-reading Practices of Urban Cycling on London's South Bank. *Environment and Planning A,* 42**,** 2914-2937.
--- (2011) A Chance to Catch a Breath: Using Mobile Video Ethnography in Cycling Research. *Mobilities,* 6:2**,** 161-182.
Staeheli, Lynn and Victoria Lawson. (1994) A Discussion of "Women in the Field": The Politics of Feminist Fieldwork. *Professional Geographer,* 46:1**,** 96-102.
Starkweather, Sarah. (2007) Gender, Perceptions of Safety and Strategic Responses among Ohio University Students. *Gender, Place and Culture,* 14:3**,** 355-370.
Stinson, Monique, and Chandra Bhat (2003) Commuter Bicyclist Route Choice: Analysis Using a Stated Preference Survey. *Transportation Research Record,* 1828**,** 107-115.
Sykes, Robert and Trina Wicklatz Driscoll. (1996) *Creating Bicycle Transportation Networks: A Guidebook*. Landscape Studies Center, Department of Landscape Architecture, University of Minnesota. St. Paul: Minnesota Department of Transportation.
Tilahun, Nebiyou, David Levinson and Kevin Krizek. (2007) Trails, Lanes, or Traffic: Valuing Bicycle Facilities with an Adaptive Stated Preference Survey. *Transportation Research Part A,* 41**,** 287-301.
Till, Karen. (2001) Returning Home and To The Field. *Geographical Review,* 91:1/2**,** 46-57.
Tolley, Rodney. 1997. The Greening of Urban Transport edition II. Chichester: John Wiley and Sons.
Valentine, Gill. (1989) The Geography of Women's Fear. *Area,* 21:4**,** 385-390.
--- (2002) People Like Us: Negotiating Sameness and Difference in the Research Process. In *Feminist Geography in Practice,* ed. Pamela Moss, 116-126. Malden: Blackwell.
Van Houten, Ron and Cara Seiderman. (2005) How Pavement Markings Influence Bicycle and Motor Vehicle Positioning: Case Study in Cambridge, Massachusetts. *Transportation Research Record,* 1939**,** 3-14.
Watson, Annette and Karen Till. (2010) Ethnography and Participant Observation. In *The Sage Handbook of Qualitative Geography,* ed. DeLyser, Dydia, Steve Herbert, Stuart Aitken, Mike Crang and Linda McDowell, 121-137. London: Sage.
Wilkinson, Bill. (1997) Nonmotorized Transportation: The Forgotten Modes. *Annals of the American Academy of Political and Social Science,* 553:Sept.**,** 87-93.
Yin, Robert. (2003) *Case Study Research: Design and Methods*. Thousand Oaks: Sage.
Young, Loraine and Hazel Barrett. (2001) Adapting Visual Methods: Action Research With Kampala Street Children. *Area,* 33:2**,** 141-152.

Zezima, Katie. (2009) Boston Tries to Shed Longtime Reputation as Cyclists' Minefield. *New York Times* August 8. http://www.nytimes.com/2009/08/09/us/09bike.html?_r=1&scp=1&sq=boston%20tries%20to%20shed%20longtime%20reputation%20as%20cyclist%20minefield&st=cse (last accessed 16 February 2012).

Samantha Z. Herr
M.A. Candidate, Geography

Date and Place of Birth: July 4th, 1983
Tucson, Arizona

Education

2007	B.A., summa cum laude, Anthropology, University of Arizona, Tucson, Arizona. 2006-2007 Student Exchange, University of Auckland, Auckland, New Zealand.

Professional Experience

Applied

Present	Program Manager, Boston Bikes, City of Boston, Boston, Massachusetts.

Research

2008-2009	Research Assistant, Bureau of Applied Research in Anthropology, University of Arizona, Tucson, Arizona.
2005-2006	Undergraduate Intern, Bureau of Applied Research in Anthropology, University of Arizona, Tucson, Arizona.

Teaching

2010-2011	Teacher Assistant/Discussion Section instructor, Department of Geography, University of Kentucky.
2009	Coordinator and Instructor (high school level), Summer Research Camp, South East Area Health Education Center, Nogales, Arizona.
2008-2009	Substitute Teacher, (k-12), selected charter schools, Tucson, Arizona.
2008	Coordinator and Instructor (high school level), Summer Research Camp, South East Area Health Education Center, Nogales, Arizona.

Awards and Honors

2010	AAG Qualitative Research Specialty Group Master's Research Award.
2009-2010	Barnhart-Withington Grant, Department of Geography, University of Kentucky.
2009-2010	Graduate School Academic Year Fellowship, University of Kentucky.
2007	Thomas Bogard Bequest Scholarship, Department of Anthropology, University of Arizona.
2006	Study Abroad Scholarship, Office of Study Abroad and Student Exchange, University of Arizona.

Publications and Presentations

2011	"Disseminating Feminist Geographies within Postsecondary Education," panel discussion. Association of American Geographers, Seattle, Washington.
2011	"On Borders and Biopolitics: An Interview with Eithne Luibheid" (published in collaboration with Tim Vatovec).
2009	"Diversity in Environmental Education in the Gulf of Mexico: Moving from Ideas to Action," poster presentation. Society for Applied Anthropology, Santa Fe, New Mexico.

Academic Service and Activities

2010-2011	Audio-Video technology manager, Geography Graduate Student Union, Department of Geography, University of Kentucky.
2010-2011	DisClosure: A Journal of Social Theory editorial collective
2009-2011	Treasurer , Geography Graduate Student Union, Department of Geography, University of Kentucky.
2009- 2010	Professional Development Committee Graduate Student Seat, Department of Geography, University of Kentucky.

Professional Memberships

2009-2011 AAG Member

- Cultural Geography Speciality Group
- Ethics, Justice, and Human Rights
- Qualitative Research Specialty Group
- Sexuality and Space
- Transportation Geography
- Graduate Student
- Political Geography