The Mode Less Traveled: Exploring Bicyclist Identity in Portland, OR

by

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Abstract

This study explores bicyclist as a social identity in Portland, OR and a relatively under researched topic in the existing literature about transportation mode choice. The results indicate that bicyclists in Portland do have an understanding of what it means to be a bicyclist and particularly the normative behaviors associated with that social identity. Results also indicate that barriers to entry into this social group are quite low but the path to becoming someone who regularly chooses bicycling as a mode of transportation is not straightforward and is fraught with barriers that could easily discourage new group members. Bicyclists in this study understood their status as a marginal social group compared to other groups of road users but expressed a desire to be seen by others as having the same right to use roadways and for bicycling to be seen as a normal activity. This study ultimately suggests that social identity may be a significant factor in how bicyclists make mode choice decisions and that it should be taken into greater consideration by policy makers who seek to encourage more people to choose bicycling as a mode of transportation.

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Chapter 1: Introduction

1.1 The Problem: What We Don't Know

Bicycle transportation has been the subject of recent interest in the U.S. as a way to promote sustainable transportation, alleviate congestion, and to promote healthy active lifestyles. With many U.S cities seeking to promote bicycle transportation for various reasons it's important to continue to develop an understanding of why people choose to use bicycles for transportation. The problem we are faced with however, is that our understanding of alternative mode choices, such as bicycling, is still incomplete. To date, many researchers have addressed this question from various perspectives, but there is still a lot that we don't know. There are a number of reasons people choose to use bicycles for transportation or not, and developing an in-depth understanding of those reasons will help policy makers to more effectively promote bicycle transportation. The purpose of this study is to explore an under researched aspect of alternative transportation modes such as bicycling.

1.2 Research Purpose

The purpose of this research is to begin to develop a better understanding of bicycle transportation users as a social group. When I refer to cyclists or

bicyclists throughout this report I am referring primarily to bicycle transportation users. Bicycle transportation users are people that use bicycles to complete utility trips, as opposed to using a bicycle for recreation. Utility trips are generally non-discretionary trips to destinations that serve necessity such as work, school, etc. In these cases the trip itself is considered to be less important than the utility that the trip serves to get from origin to destination. The percentage of utility trips completed by bicycle in the US is generally low compared to rates of trips completed by other modes. A substantial amount of past research on this topic has focused on the influence of environmental and utility factors on rates of bicycle transportation use, but it has been suggested that this conventional understanding of mode choice decisions is not sufficient to to develop policies to promote bicycle use (Heinen et al., 2010). It has also been suggested that interventions to encourage bicycle transportation should encourage people to identify as bicyclists because identifying as a cyclist has a strong influence on choosing to use a bicycle for transportation (Lois et al., 2015). Therefore, developing an understanding of bicyclists as a social group is an essential step to understanding how this social identity could influence transportation behavior and potentially developing more effective policies to promote bicycle use.

1.3 Research Questions

In this study I explore a number of questions with the goal of better understanding bicyclists as a social group:

- What does it mean to be a bicyclist?

- How do people come to adopt this social identity?

- How do transportation users who identify as bicyclists conceive of this social identity?

- What aspects of this identity are important?

- What behaviors are associated with this identity?

- How do cyclists think about and relate to other members of this social group?

- How do cyclists become a part of this social group?

As a way to address these questions that is grounded in existing theory about social identity this study makes use of a theoretical framework which I outline in chapter two. In chapter three I offer an overview of the existing literature about mode choice and its relation to the research questions this study seeks to answer. In chapter four I provide an explanation of how this study was designed and what methods were used to gather and analyze data. Chapter five provides an analysis of this data detailing how it relates to the theoretical

framework, the literature about mode choice, and how it answers the research questions underlying this study. In Chapter six I offer some conclusions about the major findings of this research and explain why they may be relevant to policy makers as well as making some suggestions for avenues of future research.

Chapter 2: Theoretical Framework

In this chapter I will review the basic theoretical foundation underlying the social identity perspective. Discussion of social identity theory will focus primarily on the work of Turner, Oakes, and Hogg as these authors have been the primary contributors to the development of the social identity perspective. This section will provide a brief overview of the social identity literature and will focus on the theoretical foundations of this perspective rather than on empirical studies.

2.1 The Social Identity Perspective

Tajfel and Turner originally defined a social group as, "...a collection of individuals who perceive themselves to be members of the same social category," and social identity as the, "...aspects of an individual's self-image that derive from the social categories to which he perceives himself as belonging," (1986). Similarly, Hogg et al. note that social groups are generally considered to be groups of more than two people who share a social identity that influences their conceptions of how they are similar and different from other social groups (Hogg et al., 2004). Social groups are considered to differ from sociological categories because they have a social as well as psychological reality and group members have a shared identity (Turner and Reynolds, 2001) Furthermore, social identity differs from self-identity because people can have many social

identities which are context specific i.e. different social identities are salient in different settings (Hogg et al., 2004). The development of the social identity perspective has a long history which will be briefly covered, but more recent theoretical developments in this perspective such as the addition of self-categorization theory are most relevant to the purpose of this research.

2.2 Social Identity Theory

The concept of social identity was first developed by Henri Tajfel in 1972 in order to develop an understanding of how the identity of individuals was influenced by their membership in social groups (Turner and Oakes, 1986; Hogg et al., 2004). Later Tajfel collaborated with John Turner to improve this theory and develop the social identity theory of intergroup behavior in 1979. This theory explained social identity primarily as a function of intergroup comparisons and the motivation for positive ingroup distinctiveness (Turner, 1987). Social Identity theory was used to explore how group members interpret the relative status of a social in-group compared to out-groups (Turner and Reynolds, 2001). In its original formulation social identity theory (SIT) was not an attempt to differentiate social identity from personal identity but rather an attempt to separate behavior motivated by social identity from behavior motivated by personal identity (Turner and Reynolds, 2001). SIT proposes that social identity processes are guided by motivation for self-enhancement through positive distinction and the desire to

reduce uncertainty (Hogg et al., 2004). People are motivated to promote the status of their own group relative to outgroups to improve collective self-esteem, and they are motivated to reduce uncertainty about the social world in order to better understand their place within it, to know who they are, and how they and others should behave (Hogg et al., 2004).

2.3 Self-Categorization Theory

Turner subsequently took social identity theory in a new direction with the development of self-categorization theory which by contrast does make a distinction between personal and social identity (Turner and Reynolds, 2001). Self-categorization theory attempts to explain how groups form and the processes that underlie group behavior (Turner and Reynolds, 2001).This theory is based on the idea that self-perception changes as people move from defining themselves as an individual to defining themselves as a member of a group, which is what makes group behavior possible (Turner and Reynolds, 2001). Turner developed this theory as an extension to social identity theory motivated in part by a general disillusionment with social psychological theory because of its emphasis on individualism in explaining social influence (Turner and Oakes, 1986). Previously social psychologists had conceptualized social influence by dividing it into two levels: informational influence and normative influences. Informational influence is a result of the dependence on others to develop

attitudes and beliefs about objective reality in order to reduce subjective uncertainty (Turner and Oakes, 1986). The desire to reduce subjective uncertainty through informational dependence motivates people towards group conformity, or accepting normative influences (Turner and Oakes, 1986).

Turner found this theory of social influence to be too individualistic because it assumes that norms arise from the "averaging" of individual attitudes and beliefs into group norms rather than a genuine group process, and furthermore that in this formulation of social influence it is the individual that is assumed to be valid and normal, while the social influence from others is by contrast unreliable and coercive (Turner and Oakes, 1986). They assert that it is unreasonable to emphasize the individual as the agent of action in theories of social influence because individual psychological processes are influenced by social context (Turner and Oakes, 1986). In short, Turner and others have put forth the idea that individuals are society, that society is composed of individuals, that these are not mutually exclusive, and explaining behavior is fundamentally about understanding the interaction between social and psychological processes (Turner and Oakes, 1986).

Self-categorization theory was developed as an effort to better understand how categorization of the self and others influences social identity and behaviors within and between groups (Hogg et al., 2004). This theory hinges on the

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psychological process of depersonalization which is what allows individuals to conceive of themselves as part of a social group (Turner and Oakes, 1986). The categorization process includes three levels of psychological abstraction: general self categorization, in-group out-group categorizations, and self categorization in relation to other group members (Turner and Oakes, 1986). Social identity in this context is about the interplay between the concept of the self as a unique individual, and the concept of the self as a member of a group. In the social identity context certainty of self concept allows people to better predict the behavior of others and to know how they should feel and act in particular social settings (Hogg et al., 2004). Turner claims that because the individual conception of the self exists at multiple levels of abstraction that group behavior is influenced by changes in levels of abstraction from an individual to a social self (Turner and Oakes, 1986). This theory contrasts with individualistic conceptions of social influence because it assumes social influence is inherently dependent on the categorization of the self within a social context (Turner and Oakes, 1986). Therefore, rather than a process of comparing individual attitudes and perceptions to social norms to reduce subjective uncertainty individual attitudes and perception are themselves a product of social norms (Turner and Oakes, 1986).

The categorization process means depersonalizing individuals and instead conceiving of them as prototypes - this process applies to self categorization and

the categorization of out-group members and is commonly referred to as

stereotyping (Hogg et al., 2004). People use these categories to make sense of

the social world by thinking about how categories explain differences and

similarities between people and how these categories predict individual behavior

(Hogg et al., 2004). The self categorization process assumes that people

conceptualize groups as prototypes; attributes that capture similarities and the

structural relationships within social groups, differences between groups, and

appropriate group behavior (Hogg et al., 2004). Prototypes do not usually

describe average group members but instead describe an idealized group

member (Hogg et al., 2004). These prototypes are dependent on intergroup

comparisons and they vary in different social situations based on specific ingroup

members and outgroups that are being compared, and these variations tend to

be larger in small and newer groups (Hogg et al., 2004). Within social groups

prototypes influence how people feel about other group members based on how

they compare to the group prototype identity, assuming that there is agreement

on what that prototype is (Hogg et al., 2004). When comparing themselves to

outgroups members strive to maximize the perceived differences between their

in-group social identity and members who are not included in that group (Hogg et

al., 2004). Thus, social identity processes lead to social comparisons that seek

to promote in-group similarity while differentiating the in-group from outgroups

(Hogg et al., 2004).

Prototypes define group norms and these help members identify who other group members are based on how their behavior conforms to these norms (Hogg et al., 2004). Once group norms are established they are internalized by group members who conform to them via the self-categorization process. Thus, leaders of social groups tend to exhibit behaviors that most closely conform to the group prototype (Hogg et al., 2004). Although, because there is an emphasis on conforming to normative behaviors within groups people are more likely to conform to group norms than to individual group members such as leaders (Hogg et al., 2004). In contrast to leaders, deviant group members are those that do not conform well to the group prototype and are seen as less trustworthy and as a potential threat to group norms and therefore pose a threat to the social identity of the group (Hogg et al., 2004). Social groups are not homogeneous and the social identity inherent in these groups changes over time as members join or leave the group and the group norms change (Hogg et al., 2004). Social groups also often contain subgroups who sometimes feel threatened by the wider group identity and commonly engage in efforts to distinguish themselves from the larger group (Hogg et al., 2004). Thus, multiple social identities can be found in a group which can lead to internal conflict and disagreement about what the group prototype is.

Chapter 3: Literature Review

In this chapter I will provide a brief overview of the mode choice literature because this literature is the foundation of research regarding bicycle transportation behavior. I will also provide an overview of the available research which explores the influence of social identity on transportation behavior. This research is limited in general, and even more limited in its application to the mode choices of bicyclists. As such this review will be relatively brief, but should provide some valuable insight.

3.1 Factors Influencing Mode Choice Decisions

Heinen et al. provide an excellent outline of the key factors influencing cycling behavior that are prevalent in the literature which include the built environment, the natural environment, socioeconomic factors, social psychological factors, costs, and safety (2010).

3.2 Utility Factors

Utility theory has been frequently used to explain why transportation users choose a given mode to complete a particular trip. This theory assumes that individuals act in ways that will maximize their utility, and as the time, cost, and

effort of a mode increases the likelihood that it will be chosen decreases (Heinen et al. 2010). However, while conventional analysis of bicycling has largely been based on utility theory, studies that adopt this perspective fail to explain why individuals in similar situations and with similar socioeconomic characteristics make different decisions about bicycle transportation use (Heinen et al. 2011).

Despite the fact that cycling is an economical mode of transportation costing far less than private automobiles and public transport, not only in direct user costs but public infrastructure costs, bicycles are one of the most underutilized modes of transportation in the U.S. (Pucher and Buehler, 2008). While some research has found a connection between bicycle use and cost considerations such as fuel prices, others have found no such connection (Heinen et al., 2010). Similar research indicates that monetary incentives for bicycle commuters could potentially increase cycling rates, and that commuters valued financial rewards more highly than monetary costs (Heinen et al., 2010; Wardman et al., 2007). Travel times are said to influence mode choice and studies indicate that experienced cyclists prefer short travel times and travel time by bicycle is considered more unpleasant than time spent travelling by other modes (Heinen, et al., 2010). The added effort for longer trips has been identified as a deterrent to cycling, and the prospect of having to expend more effort has been found generally to result in less positive attitudes towards cycling (Heinen et al., 2010). Similarly, comparing driving to public transportation Gardner and

Abraham found that acceptable travel times were commonly rooted in times that were only attainable by automobile (2007). Gardner and Abraham found that motorists sought to minimize physical and cognitive effort in travel decisions particularly for utility trips, and that drivers perceived the use of transit as entailing more effort in general compared to automobile use (2007).

Consideration for convenience and comfort have also been identified as aspects of utility maximizing behavior, however their effects on bicycling behavior are unclear. The perception of convenience of a trip is said to decline with increased travel time by bicycle, not the case for other modes, and It has been found that cyclists place a high value on comfort (Heinen et al., 2010). Handy and Xing found that higher perceptions of bicycling comfort increased the likelihood of bicycle commuting greatly (2010). However, in another study Heinen et al. found that bicycle commuters were less concerned about comfort, travel time, and flexibility on their commute (2011) Safety is included as a utility factor here because of the implied cost of unsafe bicycling conditions or behavior such as serious injury or death. Generally research has found that people perceive cycling as less safe than all other modes of transportation, and that unsurprisingly cyclists rate safety as extremely important (Heinen et al., 2010). A number of studies indicate that bicycling safety outcomes are higher in countries where cycling rates are higher and that there is a strong connection between safety outcomes and cycling behavior (Pucher et al., 2010; Pucher and Buehler,

2008). Heinen and Handy for instance, found that participants in their study believed that cycling was as safe as driving within the cities of Davis and Delft where cycling rates are high and infrastructure is available, although non-cyclists were more likely to perceive risks associated with cycling (2011).

In general utility theory is not considered to take all the factors influencing travel decisions into account as research studies that emphasize utility theory in mode choice generally assess economic factors under the assumption that travellers make rational decisions, but the consideration for the effects of attitudes and beliefs is often neglected (Heinen et al., 2010). The research of Gardner and Abraham indicated that drivers were motivated by utility considerations such as journey time, minimizing effort, and minimizing monetary costs (2007). However, they found that drivers systematically underestimated the monetary costs of car use and had misconceptions about journey times when compared to other modes (Gardner and Abraham, 2007). Comparably, non-cyclists might cite utility factors such as time and convenience as discouraging their use of a bicycle for transportation, while cyclists might cite the same reasons for choosing to ride a bike.

3.3 Environmental Factors

Environmental factors are probably some of the most highly researched in relation to bicycle transportation use. Heinen et al. note that distance in particular is usually considered when investigating mode choice and that generally research has found that increases in trip distance have a negative effect on cycling (2010). Pucher and Buehler in particular found that longer trip distances lead to lower bicycle mode shares (2006). For commuting in particular a number of researchers have all reached similar findings (Heinen et al., 2010; Handy et al., 2014). In general there is a disutility associated with longer trips, and conversely proximity to destinations in small and medium sized cities partly explains some of the examples of cities with high bicycle mode shares in the Netherlands (Wardman et al. 2007; Rietveld and Daniel, 2004). However, Heinen et al. support the notion that there may be a subjective component to the influence of trip distance on mode choice as they found that bicycle commuters who travelled long distances had more positive attitudes towards cycling than those that commuted shorter distances (2011).

Street networks are another urban form factor often considered to influence rates of bicycle transportation use. Some research indicates that more dense road networks are more conducive to non-motorized transport while others have not found significant evidence that roadway density or block size have an

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effect on cycling rates (Heinen et al., 2010). Similarly, the effects of urban

density on mode choice are still unclear. Density is assumed to be related to

distance; higher density is expected to lead to an increase in the proximity of

destinations and therefore a reduction in trip distances (Cervero, 2005). In

general higher density is expected to result in higher rates of alternative mode

use (Litman, 2005). While at least one study did not find any support for the

proposition that residential densities have a large influence on mode choice,

many other studies have found that higher densities are related to higher bicycle

mode share and lower levels of car ownership (Heinen et al., 2010; Parkin et al.,

2007). Related to density are considerations for the influence of diversity of uses

with the majority of findings indicating that a mixture of functions at the

neighborhood level effectively reduces travel distances and increases the mode

choice share of cycling (Heinen et al., 2010).

Infrastructure is also considered to be a component of the built

environment and for cycling has been explored in terms of facility type, quantity,

and quality. In general studies have shown that the availability of infrastructure

for bicycling is associated with higher rates of bicycle use for transportation

(Handy et al., 2014; Heinen et al., 2010). However, this is qualified by the fact

that aggregate studies have found a generally positive relationship between bike

lanes and levels of bicycling but that individual level studies have shown more

mixed results (Pucher et al., 2010) Handy et al. explain that aggregate studies

have tended to examine general availability in an area, miles of bike lanes for instance, rather than availability along specific routes, which could explain these conflicting findings (2014). Notable studies that have not supported the assertion that higher infrastructure availability leads to more cycling include Dill and Voros who found that living in a neighborhood with a higher quantity of bike lanes was not correlated with more cycling behavior among regular and utilitarian cyclists, and Moudon et al. who did not find a significant relationship between the presence of bicycle facilities and cycling rates (2007; 2005). This may be qualified by the inclusion of recreational cyclists in the study by Moudon et al. as recreational cyclists may have a preference for paths and trails compared to bicycle transportation users. Indeed, Pucher et al. found that experienced cyclists had a preference for bike lanes compared to paths as they were less willing to invest the time to access paths and they felt more comfortable bicycling in traffic (2010). In stated preference studies there is almost a universal preference for bike lanes compared to riding in mixed traffic (Pucher et al., 2010). However, Parkin et al. note the weakness of stated preference studies is that preferences may not reflect real world behavior in relation to information acquisition and behavioral change (2007).

Other findings indicate the quality of infrastructure influences bicycle transportation use as cyclists have more positive perceptions of and a preference for continuous facilities, and negative perceptions of facilities that are

discontinuous (Heinen et al., 2010). Handy and Xing found that the perceptions of unsafe or dangerous streets for cycling near the workplace had a significant negative effect on bicycle commuting (2010). Traffic control systems such as stop signs and street lights also influence cycling behavior although it has not been found that they are always detrimental (Heinen et al., 2010). In general lower speeds and lower traffic volumes have positive effects on bicycle mode share and higher traffic volumes have been found to be associated with lower levels of cycling (Heinen et al., 2010; Parkin et al.) Although, one study in Portland found that the perception of slower neighborhood traffic speeds did not lead to a higher likelihood of regular bicycle use for utilitarian trips, and Moudon et al. go so far as to claim that cycling behavior takes places largely independent of environmental conditions and traffic levels (Dill and Voros, 2007; 2005) Bicycle commuters have also been found to consider end of trip facilities as part of the decision to commute by bike and conversely not having facilities at work has been given as a reason for choosing not to bicycle (Heinen et al., 2010). Other bike facilities such as bike share programs have been shown to increase cycling rates, although these results are somewhat confounded by the fact that these programs usually occur in tandem with expansion of bicycle infrastructure (Pucher et al., 2010).

In addition to built environment factors that influence mode choice behavior cyclists also consider the natural environment. Slopes generally have a

negative effect on bicycle use, although it has been suggested that there may be differences in the preference for hilly or flat terrain between experienced and inexperienced cyclists (Heinen et al., 2010). Moudon et al. however did not reach the same conclusion, although again the majority of the respondents in their study were recreational cyclists which could explain these conflicting findings (2005). Weather and climate have also been found to influence cycling behavior with precipitation frequently mentioned in the literature as a deterrent to cycling (Heinen et al., 2010). The effects of climate on mode choice are unclear as results of studies have been mixed indicating paradoxically that the number of days with rain in cities is negatively correlated with bicycle commuting although three of the top six cities for bicycling have more than 100 days of rain per year (Dill and Carr, 2003). Cyclists also perceive colder temperatures to be more of a deterrent than hot temperatures (Heinen et al., 2010). In short, there is not really a consensus on how environmental factors affect bicycle transportation user behavior.

3.4 Individual Factors

Heinen et al. note that while in general there is a relationship between socioeconomic factors and bicycling there is a lack of clarity on the direction of these relationships as well as causality (2010). The majority of bicycle transportation research has found that men cycle more than women in countries with low cycling rates such as the US, but that in countries with high cycling rates

women cycle at higher rates than men (Heinen et al., 2010). Age is also a factor but the research is unclear with some findings indicating a decline in cycling rates with age while others found no significant effects (Heinen et al., 2010). For income the research is also unclear as aggregate studies indicate that high income levels are associated with lower levels of cycling, while other research has found the opposite or no effect (Heinen et al., 2010). As could be expected car ownership has been found to have a negative effect on bicycling behavior while bicycle ownership has a positive effect (Heinen et al., 2010). Parkin et al. found that as the number of cars per employee increases the proportion that commute to work by bicycle falls however, high levels of cycling are seen in some Northern European countries despite high levels of automobile ownership (2007; Pucher and Buehler, 2008). Handy and Xing found that home-ownership was negatively associated with bicycle commuting (2010).

Recently there has been more research about the influences of individual psychology on bicycle transportation use however, while research in this area has been growing still relatively little is known about the nature of psychological factors, or how influences on mode choice such as attitudes and preferences are formed (Handy et al., 2014). Findings indicate that in general positive attitudes towards cycling increases the likelihood of bicycle commuting and similarly that negative perceptions of car use stimulates cycling behavior (Heinen et al., 2010). Dill and Voros found that there was a relationship between regular cycling

behavior and positive perceptions of the neighborhood environment for cycling, although the direction of this relationship was unclear (2007). However, Heinen and Handy found a mismatch between some transportation attitudes and behavior indicating that even pro-cycling attitudes might not be enough to encourage cycling behavior among non-cyclists (2011). Generally all research that has explored attitudes has made a connection between cycling behavior and psychological factors (Heinen et al., 2010). Gardner and Abraham claim that developing effective policy interventions to encourage mode shifting hinges on understanding of beliefs and attitudes that underpin driving behavior in the context of alternative modes (2007). They found notably that drivers hold idealized views of automobile travel while problematizing public transport despite real deterrents to automobile use such as traffic congestion (Gardner and Abraham, 2007).

Environmental beliefs have also been explored with findings indicating that travellers with deeply held environmental beliefs are more likely to choose modes other than automobiles (Heinen et al., 2010). For driving Gardner and Abraham found that motorists did not express environmental concerns although they were unsure whether this was due to respondents not considering negative environmental consequences of automobile use when choosing modes or because they did not feel responsibility for these consequences (2007). Heinen and Handy found that a number of participants in their study shared the belief

that cycling was environmentally friendly compared to other modes and either mentioned it as a primary motivation for cycling or as a positive side-effect (2011). Psychological factors such as habits are also a factor that influences cycling behavior with studies finding generally that travellers do not consider every factor when making decisions and people will explore less information about a decision if there is already an established habit (Heinen et al., 2010). In a study by Heinen et al. it was found that cycling habits positively influenced the likelihood of full time bicycle commuting (2011). Furthermore, Bamberg, Ajzen, and Schmidt found that the inclusion of past behavior into models significantly increases their predictive power in terms of future behavior (2003). They concluded that in the early stages of performing a new behavior attitudes and beliefs are consciously formed but that once that behavior has been performed repeatedly this process is less important (Bamberg, Ajzen, and Schmidt, 2003). Health has also been identified as a motivation for bicycling in a number of studies including Heinen and Handy who indicated that over half of their participants cited health and exercise as a reason to cycle (2011). Cyclists in this study also indicated that commute enjoyment was a factor with some participants indicating a dislike of driving as their reason for choosing to cycle while non-cyclists were more likely to indicate that they did not enjoy cycling (Heinen and Handy, 2011).

3.5 Sociocultural Factors

Handy et al. note that the influence of the social environment on bicycling behavior has only been explored by a few studies (2014). In general cycling is assumed to be one of the most affordable and therefore equitable modes of transport which makes it attractive as a mode high for social welfare reasons (Pucher and Buehler, 2008). Studies that have applied this concept have found that non-bicycle commuters perceive more barriers to bicycle commuting than cyclists, and cyclists perceive more possibilities for cycling than non-cyclists (Heinen et al., 2010). Dill and Voros claim that having social support and social cues about cycling may encourage cycling behavior, but that this relationship might be a function of selective awareness (2007). Heinen et al. found that a positive perception of the possibility of commuting to work by bicycle had a positive effect on bicycle commuting behavior however, they also found that for long distance trips bicycle commuters were less affected by their perception of the expectations of the social environment, indicating that for longer trips the decision to bicycle is largely based on individual considerations (2011). Additionally subjective norms towards cycling only had an effect on cycling frequency for commuters living within 5 km of their work, and that the expectation of the possibility of cycling did not influence bicycle commuting frequency (Heinen et al. 2011). Pucher et al. claim that cultures and customs encourage

bicycling in cities with high levels of cycling but deter cycling in places where

bicycling is seen as a fringe mode (2010).

Pucher and Buehler point to cultural differences as a potential explanation

for high bicycle use in Northern European countries noting that cycling rates are

much higher in these countries despite comparable incomes and levels of

automobile ownership (2008). The influence of culture on bicycling behavior is

expected to take the form of established norms for behavior. Heinen and Handy

found that participants in their study occasionally felt pressure not to cycle and

perceived a negative norm of cycling or did not consider it an appropriate mode

in certain situations (2011). Indeed Handy et al., claim that if cycling is seen as a

normal mode of transportation and not primarily as a form of recreation the

people may be more inclined to use a bicycle for transportation (2014). In a study

by Heinen and Handy some participants received negative comments from

co-workers about their bicycle commuting behavior, although others received

positive reactions from their social surroundings (Heinen and Handy, 2011).

Conversely cyclists often exerted social pressure on their co-workers who lived

close to work but did not cycle (Heinen and Handy, 2011). While participants in

Davis perceived that transportation culture in the US was anti-bicycle in general

the same was not true of respondents in Delft (Heinen and Handy, 2011). Heinen

and Handy note that while attitudes and subjective norms are helpful in

explaining the transportation behavior of individuals these attitudes and norms

are likely affected by the national or regional culture towards cycling (2011).

Additionally, Handy and Xing found that a negative social environment for cycling

might have a greater influence in bicycle commuting behavior than a pro-cycling

environment (2010).

3.6 Identity Factors

Little research on the influences of identity and mode choice decisions has

previously been conducted. Some of this research has focused directly on social

identity, some has focused on identity in general, while some has explored

bicycling culture or citizenship. In general there is acknowledgement that

exploring the influence of identity on mode choice has merit as Skinner and

Rosen note that, "the notion of identity can help us move beyond a 'rational

choice' model of transport behavior posited on an abstract universal individual,

and replace it with an account of the differences in perspective and action that

emerge from cultural variations between social groups" (2007). It is these

variations that many studies have explored; some have studied differences

between cyclists, while others have explored differences between cyclists and

other transportation users. Others have focused on the identities of drivers which

is less relevant to this study but worth discussing.

Murtagh et al. studied the identities of drivers compared to public transit

users and found that travellers held multiple identities, but notably that some

individuals may not be conscious of their mode choice decisions in the context of

identity (2012). This is not surprising as driving is generally considered to be a

socially acceptable mode choice so this behavior might not elicit much self

reflection. Although this study separated transport identities and social identities

it did find that both significantly influenced mode choices on regular journeys

(Murtagh et al., 2012). This supports the proposition that identity does influence

mode choice. Gardner and Abraham also explored the identities of drivers

compared to public transportation users. Their study also found that participants

were able to hold multiple identities, and that these identities influenced their

attitudes and behaviors (2007). They also found that identifying as a "resident"

was associated with more positive attitudes towards policies that sought to

reduce car use, while identifying as a "motorist" led to more antagonistic

responses (2007). A few other studies have focused more specifically on the

identity of cyclists.

Aldred claims that generally in motorized cultures cyclists are often

perceived as deviant, but that there has been a consistent motivation to

differentiate between "good cyclists" and "bad cyclists" by previous research and

by cyclists themselves (2010). Aldred suggests studying cycling identity in areas

where cycling is considered to be a normal activity and where a broad range of

social meanings may be attributed to bicycles is ideal (2010). Consequently, Aldred chose to use interviews to study the identity of cyclists in Cambridge where the culture and the environment were considered to be conducive to bicycle use (2010). Participants in her study indicated that they perceived differences between the good cyclist and the bad cyclist and these identities were attributed to bicycling behavior (2010). Bad cyclists were seen to be those who engaged in dangerous cycling behavior and were seen as unsafe (2010). By contrast the good cyclist was seen as someone who was safe and wore a helmet or protective gear, though many respondents admitted to not conforming to this behavior and had a difficult time conceptualizing what attributes a good cyclist had (2010). Furthermore some self proclaimed bad cyclists were found to adopt a deviant cycling identity rather than trying to conform to the image of the good cyclist (Aldred, 2010). Similarly, Skinner and Rosen also found that the boundaries between good and bad cyclists revolved around consideration for safe and unsafe behaviors (2007). In fact, they found that respondents generally rejected the cyclist identity and instead tried to distinguish themselves from other bicyclists as well as drivers (2007). Respondents saw themselves as good cyclists compared to everyone else, and frequently cited concern for unsafe behaviors and rule breaking by cyclists and drivers (Skinner and Rosen, 2007).

Skinner and Rosen suggest that identity is an important influence on how people understand their own transportation behavior, but that conceiving of this

identity as singular is too simplistic (2007). This complexity was supported by

Aldred who found that identifying as a cyclist was difficult for participants, even

though the use of a bicycle was associated with positive social and

environmental outcomes and some respondents cited social and environmental

concerns as the reason that they started bicycling in the first place (2010).

Notably, Aldred found that cyclists did in fact identity with a cycling citizenship

and that in their responses they commonly used the word "you" to describe their

experiences, suggesting that these experiences were generalizable to other

bicycle users (2010). Aldred found that participants claimed that compared to

other modes, bicycles facilitated a better connection with the social and natural

environment, and was seen as a generally pleasurable experience (2010). On

the other hand, Skinner and Rosen found that most interviewees made practical

decisions about what mode of transportation to use, although their study included

a number of participants who might consider this as part of their work identity;

engineers (2007).

Skinner and Rosen found no evidence to support the polarization between

cyclists and motorists claiming that people can have both of these identities

(2007). McCarthy by comparison used an insider outsider framework to explore

the perception of risk of utilitarian cyclists in Charleston and found that cyclists

had an adversarial perception of drivers. Cyclists perceived themselves as

outsiders, even though most of them were also drivers. Respondents reported

feeling marginalized as road users and were the subject of harassment; one respondent was even threatened with a gun by a driver (McCarthy, 2012). McCarthy found that drivers perceived bicyclists as norm violators who increased risks for all road users, and as a result drivers made intentional efforts to encourage bicycle riders to "get off the road," (McCarthy, 2012). In general it may be that Charleston was not the best location for this study as there was a lack of infrastructure, and respondents indicated that there was a very strong anti-bike culture (McCarthy, 2012).

In another study by Gatersleben and Haddad how people conceive of the typical cyclist was explored by asking respondents how well 52 different attributes described bicyclists they normally see on the road (2010). They found that respondents were most likely to perceive bicyclists as falling into four different categories: responsible cyclist, lifestyle cyclist, commuter cyclists, and hippy-go-lucky cyclists, though these categories were not mutually exclusive (2010). Responsible cyclists were generally those perceived as those who were safe road users because they followed the rules of the road, were courteous to other road users, and used safety equipment (Gatersleben and Haddad, 2010). Lifestyle cyclists were perceived to be those more likely to engage in recreational cycling, own more expensive equipment, and bicycle for reasons such as fitness and environmental concern (Gatersleben and Haddad, 2010). Commuter cyclists were considered more likely to be well educated men who commute to work by

bicycle in all weather conditions (Gatersleben and Haddad, 2010). Lastly, hippy-go-lucky cyclists were perceived to be those that used bicycles for everyday activities, were less likely to be men or own special equipment, and were similar to responsible cyclists because they were perceived to be safe and courteous (Gatersleben and Haddad, 2010). The results echo aspects of social identity theory by finding that respondents in the study who had cycled more frequently were more likely to perceive other cyclists as hippy-go-lucky, commuter, or responsible compared to lifestyle cyclists who were presumably perceived as an out-group (Gatersleben and Haddad, 2010). However, most respondents in the study generally perceived cyclists positively whether they had recently used a bicycle or not (Gatersleben and Haddad, 2010). Notably, responses to questions in the study about intention indicated that respondents who perceived a typical cyclist as someone who uses a bicycle for day to day activities were more likely to indicate that they would consider bicycling in the future (Gatersleben and Haddad, 2010).

In Portland in particular some comparable research has also been conducted. The City of Portland developed four typologies of cyclists that engaged in different types of cycling behavior: strong and fearless, enthused and confident, interested but concerned, and no-way no-how (Geller, 2009). While these categories were certainly not developed arbitrarily, they were not a result of asking bicyclists how they would categorize themselves but instead a reasonable

guess by planning professionals about what types of bicyclists exist in Portland

(Geller, 2009). In fact follow up research indicated that a majority of survey

respondents fell into one of these four categories, and additionally that relatively

high levels of cyclists in three of the four categories could be considered to be

utilitarian cyclists (Dill and McNeil, 2013). Additionally, this study indicated that

social support and influence on bicycle behavior was significant (Dill and McNeil,

2013).

Chapter 4: Study design and methods

4.1 Overview

At this juncture it seems appropriate to review the research questions underlying this study and how they relate to the theoretical framework that I outlined in chapter two:

- What does it mean to be a bicyclist?

- How do people come to adopt this social identity?

- How do transportation users who identify as bicyclists conceive of this social identity?

- What aspects of this identity are important?

- What behaviors are associated with this identity?

- How do cyclists think about and relate to other members of this social group?

- How do cyclists become a part of this social group?

These questions will help me explore bicyclist identity in a way that is grounded in the theoretical framework which describes how people come to adopt social identities, how group members conceive of these identities when making group comparisons, and how group members conceive of normative group behavior. One important question that needs to be answered is whether

there is an agreed upon group prototype for bicyclists in Portland or if there are

instead multiple bicyclist identities and no agreed upon prototype. Furthermore, if

there is an agreed upon group prototype among Portland bicyclists how do they

deal with deviant or new group members who do not conform to the prototype? I

will also consider if there are other factors that have been found to influence

mode choice decisions that are part of the social identities of cyclists. Although

some previous work has explored the social identity of cyclists no theoretical

framework has yet been developed to explore this identity or transportation

identities in general. This research is limited in scope so it's purpose is not to

accomplish this goal itself, but to contribute to that end using existing related

theory and research as a guide. As has been noted previously social identity may

play more than a marginal role in how transportation users make mode choice

decisions, so developing a better understanding of how bicyclists as a social

group make sense of this identity seems important.

This study employs a mixed methods approach to this subject with a fairly

heavy emphasis on qualitative methods and data. As this is a relatively under

researched topic this study is intentionally exploratory in nature which is why the

research questions are broad and qualitative data is the primary focus.

Qualitative research relies on induction or the use of observation to generate

theory (Morgan, 2013). Qualitative research is subjective in that it places

emphasis on using research to interpret the social world, and contextual because

the data collected will inform a researcher about the nature of specific settings and circumstances (Morgan, 2013).

For context, previous research on this subject has employed both qualitative and quantitative approaches in the study of transportation mode choice and identity. Heinen and Handy used in-depth interviews because they claimed that attitudes affecting travel behavior are more difficult to measure through survey or observation (2012). Similar to Heinen and Handy, McCarthy employed in-depth open ended interviews for primary data collection to explore narratives of cyclists and how their behavior was influenced by environmental and other ideological beliefs (2012). In general using interviews to explore mode choice behavior is assumed to lead to a more complex understanding of the influence of identity on cycling behavior (Skinner and Rosen, 2007). Interviews were employed by Skinner and Rosen, Aldred, and Gardner and Abraham to explore the identities of transportation users, while Gatersleben and Haddad, and Murtagh et al. employed survey instruments instead. In summary this study employed similar methods to previous related studies but is not intended to be replicative.

4.2 Participant selection and data collection

In this study I used a survey instrument which asked respondents some basic demographic questions, a few questions specific to transportation behavior, and several open ended questions. The goal of this survey was to gather information about the characteristics of survey respondents and get an idea of what type of bicyclists they were and learn about their experiences and opinions about bicycling in Portland. Participants were recruited by a flyer which provided the address to a website that gave them some additional information about the study, a link to the survey, and an opportunity to schedule an interview. The website link was subsequently redistributed to online message boards for bicyclists by survey respondents themselves so what started as a convenience sample became a snowball sample organically as I did explicitly ask survey respondents to recruit other participants. Survey respondents were offered a chance to win a $50 gift card for participating in the study. Respondents under the age of 18 were excluded from the study and incomplete responses were omitted. This study was approved as exempt by the IRB.

The website that linked to the survey also allowed participants to opt in to a brief individual interview which they were able to schedule online themselves. The same open ended questions that appeared at the end of the survey were used as a template for conducting interviews with the goal of eliciting more

nuanced responses from participants about the same topics with the added

benefits that are afforded by a conversational setting. Interviews were transcribed

using secure third party transcription services. All interview participants indicated

they had also completed the online survey, but survey responses were not

mapped to interview participants so there is overlap in the datasets.

4.3 Site Selection

The practical reason for choosing Portland as the site for this research

was that I lived in Portland when this study was conducted. Beyond this Portland

benefits from a social and physical environment that are conducive to this

research because cycling isn't seen as a grossly abnormal behavior, the

topography is relatively flat, there is a moderate climate, relatively high density

levels, and well developed bicycle infrastructure compared to a number of other

US cities. Between 1994 and 2011 Portland experienced an increase in cycling

rates of 254% representing a large increase in cycling as a trip mode from 1.6%

citywide to 5.5% (Geller, 2013). The number of bicycle commuters in Portland

Oregon increased by 600% between 1990 and 2008 with the bicycle mode share

increasing from 1.1% to 6.6% (Pucher et al., 2010). This represents an

opportunity to study a social group that has been experiencing relatively rapid

growth, and a social identity that could potentially be changing and therefore

experiencing in-group conflicts between relative newcomers and long-time

cyclists in Portland.

4.4 Data Analysis

Quantitative data was analyzed with descriptive statistics. Incomplete

responses were removed from the dataset leaving 138 complete survey

responses. Because participants weren't required to answer each question the

number of responses to each question are not completely consistent so they will

be reported in the analysis. Qualitative data that was gathered from the survey

and interviews was analyzed using Dedoose employing a technique similar to the

theoretical thematic analysis as described by Braun & Clarke (2006). According

to Braun & Clarke, "a theme captures something important about the data in

relation to the research question, and represents some level of patterned

response or meaning within the data set," (2006). The survey data was initially

coded using an open coding strategy and then codes were consolidated or

eliminated where appropriate. Survey data was coded first and then this code

book was used in the analysis of interview data; because interview respondents

were also survey respondents the themes prevalent in the data unsurprisingly

turned out to be very similar.

Chapter 5: Results

5.1 Results - Quantitative

5.1.1: Demographics

More participants (36%) fell into the 25-34 age category than any other, they were overwhelmingly white (95%), and somewhat surprisingly given prior research primarily identified as female (53%). It is worth noting here that the gender question on the survey instrument could have been more inclusive, something that was pointed out by one of the survey respondents. Most participants are highly educated, with 76% having attained a four year degree or more, which might explain why such a large number of respondents also reported fairly high income levels. The majority of respondents report being either married (40%) or in a relationship (34%) and living in single family dwellings (60%) which makes sense as a majority of respondents (59%) also reported living in SE Portland where there is a large stock of single family housing. The majority of respondents (74%) reported living in Portland for more than five years with 46% reporting residing in Portland for more than ten years.

5.1.2 Transportation Behavior

The majority of respondents (72%) reported riding on average four or more days a week and primarily to work (67%) and 64% reported having been using a bicycle for transportation in Portland for more than five years so it

appears the population captured in this study were primarily regular bicycle

commuters. Most respondents (71%) reported having access to a car however,

almost half of respondents that did have access to a car reported that on average

they only drove one (27%) day a week or didn't drive at all (20%). Transit wasn't

particularly popular with participants. The majority (63%) of respondents reported

not taking transit at all or just once a week. It is important to note that the survey

questions asked respondents what their average use was for these modes, and

many respondents reported driving and riding transit rather than bicycling under

certain conditions such as adverse weather. Given that the majority of responses

were gathered during the winter participants may have over reported their use of

transit and under reported bicycling. I did consider qualifying these questions by

taking seasonality into consideration, but this would have required multiple

questions and I decided instead to keep the survey as brief as possible in an

effort to garner better response and survey completion rates. The vast majority

(91%) of respondents self identified as bicyclists. Fortunately several

respondents who were admittedly dubious about labeling themselves bicyclists

either explained why in their survey response, completed an interview, or both,

so I was able to get a better understanding of their reasoning for eschewing self

categorization in this way.

Table 1: What is your age?		
	#	%
18-24	7	5%
25-34	50	36%
35-44	35	25%
45-54	26	19%
55-64	16	12%
65-74	4	3%
n	138	

Table 2: What gender do you most identify with?		
	#	%
Female	73	53%
Male	61	44%
Neither	4	3%
n	138	

Table 3: What ethnicity do you most identify with?		
	#	%
White	131	95%
Asian	2	1%
Other	5	4%
n	138	

Table 4: Please indicate your household income in USD		
	#	%
Less than $10,000	4	3%
$10,000-$19,999	9	7%
$20,000-$29,999	14	10%
$30,000-$39,999	13	10%
$40,000-$49,999	9	7%
$50,000-$59,999	14	10%
$60,000-$69,999	7	5%
$70,000-$79,999	7	5%
$80,0000-$89,999	6	4%
$90,000-$99,999	6	4%
$100,000-$149,000	28	21%
More than $150,000	19	14%
n	136	

Table 5: What is your current relationship status?		
	#	%
Married	55	40%
Single	32	23%
In a relationship	47	34%
Divorced	4	3%
n	138	

Table 6: Please indicate the highest level of education you have completed		
	#	%
Less than high school	1	0.73%
High school graduate	2	1%
Some college	13	9%
2 year degree	6	4%
4 year degree	58	42%
Professional Degree	47	34%
Doctorate	10	7%
n	137	

Table 7: Which of the following best describes the type of housing you currently live in?		
	#	%
Single family home	83	60%
Apartment	32	23%
Townhouse	2	1%
Duplex	9	7%
Condominium	7	5%
Other	5	4%
n	138	

Table 8: Please indicate which area of Portland you live in		
	#	%
NE Portland	37	27%
NW Portland	3	2%
SW Portland	7	5%
SE Portland	81	59%
North Portland	10	7.25%
n	138	

Table 9: How long have you lived in Portland?

	#	%
<1 year	7	5%
1-3 years	13	9%
3-5 years	16	12%
5-9 years	39	28%
>10 years	63	46%
n	138	

Table 10: How long have you been riding a bicycle for transportation in Portland?

	#	%
<1 year	21	15%
1-3 years	20	15%
3-5 years	9	7%
>5 years	87	64%
n	137	

Table 11: Do you have regular access to an automobile?

	#	%
Yes	98	71%
No	40	29%
n	138	

Table 12: In an average week how many days do you drive?

	#	%
0	19	20%
1	26	27%
2	18	19%
3	16	17%
4	9	9%
5	7	7%
n	95	

Table 13: In an average week how many days do you ride transit?

	#	%
0-1	64	63%
2-3	25	25%
4-5	8	8%
6-7	4	4%
n	101	

Table 14: In an average week how many days do you ride your bike for transportation?

	#	%
0-1	12	9%
2-3	27	20%
4-5	52	38%
6-7	47	34%
n	138	

Table 15: What destination do you ride your bike to most frequently?

	#	%
To work	92	67%
Personal errands	34	25%
To school	3	2%
Other	9	7%
n	138	

Table 16: Would you describe yourself as a bicyclist?		
	#	%
Yes	117	91%
No	11	9%
Not Sure	10	8%
n	138	

5.2 Results - Qualitative

5.2.1 Motivations

One of the first questions that needs to be answered if we are to understand what it means to be a bicyclist is why people choose to ride a bicycle in the first place. Participants in this study generally had diverse but surprisingly consistent motivations for choosing to ride a bicycle that ranged from utility considerations to more personal and even altruistic motivations. Utility considerations mentioned by an overwhelming majority of respondents were those that one might expect given previous research such as costs of vehicle ownership and maintenance, cost of parking, physical fitness, convenience, and traffic avoidance. Respondents also had personal reasons for choosing bicycling such as personal enjoyment, freedom, stress relief, and feeling connected to the city and their neighborhood. Beyond these motivations many respondents had more altruistic motivations for bicycling such as environmental concern and

improving transportation outcomes for all road users. I also asked participants

what reasons they might choose not to ride a bicycle and unsurprisingly most

respondents typically cited long distances or adverse weather conditions as

reasons they might choose other modes. In general the results of this study

suggest that bicyclists have very diverse and nuanced motivations for choosing

to ride a bicycle which is not at odds with previous research on this subject.

One of the more interesting themes to arise from the data regarding utility

motivations for bicycling was convenience. Most respondents made a negative

argument for this by pointing out the inconveniences of other modes such as

having to find parking, dealing with traffic, or waiting for transit. Meanwhile a

number of respondents pointed out the comparable speed of bicycling for short

trips compared to driving or transit implying that the admitted inconveniences of

bicycling were outweighed by the benefits of avoiding inconveniences of other

modes. Indeed, the convenience appeal of bicycling seemed to be related to the

flexibility and freedom that it affords as a mode of transportation comparable to

that offered by driving and perhaps superior to transit.

"I love my bicycle. I love the freedom it affords me. When my bike is with

me, I can control where I go, when I depart, and--to a great extent--when I

arrive," (Survey respondent).

"I'm so, I'm addicted to being on my own time that um, a lot of the things are not that big a deal. As long as I get to arrive when I want, leave, when I want to, you know, that's, that turns out that matters a lot to me. That freedom you know cycling is really the mode where you can get somewhere in a reasonable timeframe" (Interview participant).

This strong desire for a flexible mode of transportation is noteworthy because it seemed to be an underlying motivation for choosing a bicycle as a mode of transportation. Considering that bicyclists believe these trips can be completed in a comparable timeframe by bicycle or car while avoiding the inconveniences of driving, it seems many bicyclists have made the calculation that bicycling is a preferable mode because it offers the same advantages as driving without the disadvantages that respondents in this study made clear they were interested in avoiding. This motivation also seems relevant to another theme that emerged from the data that I will discuss later which is the general desire among bicyclists to reduce or avoid uncertainty in an effort to remain safe.

5.2.2 Becoming a bicyclist

"I learned the rules of the rode by just riding a lot and figuring out how to avoid getting killed but also doing lots of stupid dangerous things," (Survey respondent).

So far this research suggests that bicyclists have come to the conclusion that bicycling is their preferred mode, even if not for all trips and under all circumstances. But how did they reach this conclusion? The answer does not appear to be some sort of rational utility calculation, but instead more of an organic journey. Most participants described a lifelong relationship with bicycling that started in childhood and continued into adulthood with some deviations along the way. Many participants described an on again off again relationship with bicycling, such as bicycling in childhood but later stopping, then returning to bicycling in college or some time later in life. Some respondents also told stories about how they were influenced to take up bicycling by family, friends, coworkers, and significant others, however these social influences appeared to be only a part of how most participants ultimately became bicyclists. These stories were so varied that it was hard to distill any meaningful themes from them, but what they mostly shared was a generally haphazard and discontinuous journey to becoming a bicyclist.

> "I lived in the suburbs with my parents and I just got on the train which was close and then got off the train and walked to my office and did that. So it was like, it was still non car commuting but there wasn't a bike option per se. So when I got here and there was a I, I'm not, I don't startle easily. And so riding in the city streets wasn't something that was a deterrent to

me. It was kind of like, oh that sounds kind of exciting, actually. And there were bike trails and you know, and I started in the summertime so we didn't need the equipment at first. Once I realized how much I loved it and the weather started to change, then I started to figure out what I needed," (Interview participant).

"I think from the first day I started riding I did think of myself as a bicyclist just because I rode a bike, but I didn't really feel that way. But then as I started riding more and more, I just, I realized that no matter what I did my mind would always go to my bike, like if I need to go somewhere, it was always oh just get on your bike and go, like it wasn't even a second thought for me" (Interview participant).

As part of this line of questioning I also asked participants how they came to learn the rules of the road, with the expectation that this would be a practical necessity for being a bicyclist, but also that it may have some bearing on bicyclist identity. This process too appears to be organic and somewhat haphazard based on the responses from the participants in this study. A few participants reported learning in more formal settings, such as from safety classes or printed training materials, but most reported simply learning through observation and trial and error.

"I moved here without ever having bike commuted before but knew it was something I'd like. In the first year, I mixed biking with transit because navigating a new city was overwhelming. I got lost and turned around a lot but eventually I made enough trips into the downtown area from ~NE 68th that I started to get a feel of the land. It took about a year and a half until I got a good sense of the land and built up enough confidence to share the road with cars," (Survey respondent).

"My father has ridden his bike to work every day for decades now, although where he lives he's able to commute mostly on trails, without going on roads very often. And we biked a lot for recreation when I was younger. But essentially I just rode my bike to work one day and discovered that it was a lot more fun than the alternatives, and have been riding ever since," (Survey respondent)

This process seems to be where bicyclists encounter many barriers that might be expected to be the end of bicycling for them; being scolded by drivers for riding where they shouldn't be, being scolded by other bicyclists for not conforming to what they view as acceptable behavior, encountering logistical problems with weather, routes, or facilities. Notably these also seem to be the most common examples of ingroup and intergroup conflict among bicyclists and other road users which I will discuss later.

5.2.3 Doing bicycling

"Getting on a bike at least once a week. Doesn't matter what you do with it," (Survey respondent).

As might have been expected this study suggests that "bicyclist" as social identity does not seem to be the most salient social identity for most bicyclists, although for some it was very important. The results suggest that this is because the barriers to being a bicyclist are relatively low and center around simply "doing bicycling" which most participants had a fairly permissive definition of although many responses included qualifiers which tended to have to do with frequency and competency.

"A person who uses a bike as a regular means of transportation," (Survey respondent)

"Anyone who rides a bicycle on a regular basis, especially when it is their primary mode of transportation," (Survey respondent).

"Being a bicyclist is part of me. I think of riding, read about riding, dream about riding. I ride. The freedom that I feel riding is the closest thing to

flying I can think of. Riding requires focus and attention, strength and breath. When riding, I am at peace. When riding, I am free," (Survey respondent).

"It means knowing how to control my bike, how to bike safely for transportation and pleasure, and being active and fit. I also think it is mind-expanding, just discovering where you can go on your bike," (Survey respondent).

"For me, I think it mostly means relying on my bicycle to get me around. But I also imagine people saying "being a bicyclist" to mean biking a lot recreationally, or racing, or whatever. For me it's more of a way of life, I guess," (Survey respondent).

"I don't consider it an exclusive club or major part of my identity," (Survey respondent).

In a sense then being a bicyclist is a performative social identity; to be a bicyclist one simply has to at a minimum ride a bicycle. Most participants seemed to keep the idea of a bicyclist fairly vague, and while most recognized there are different types of bicyclists they did not necessarily seem compelled to reject other kinds of bicyclists from the group altogether as there were no examples of respondents

accusing others of not being real bicyclists or anything similar. While respondents certainly had complaints about other types of cyclists, there didn't seem to be much desire to reject them from the group entirely.

"Oh yeah, I definitely think there are different types of bicyclists. I would just consider myself like a bicyclist because that's, that's how I get around, that's how I have fun. Um, but they're, you know, of course there's bicyclists, that do it for sport or just commute that aren't into it," (Interview participant).

"In my mind, bicyclists are people who see bicycling as part of their identity and are passionate about bikes. I casually ride my bike for transportation and recreation, but couldn't tell you what type of bike it is. I'm not particularly passionate about biking, but I enjoy its convenience and low environmental impact," (Survey respondent).

"I have a lot of identity wrapped up into being a bicyclist. Um, I just, I really love it. I love the message that sends to my kids the message that it sends to the people around me. I just, I really, and even if I'm not talking about it for me personally to know that I'm doing my small part every day for the earth, but then also from my health, it really is good for me to separate work from home and home from work that it's only 20 minutes, but it's just

really great fresh air... So I just, yeah, I could definitely consider myself a

bicyclist." (Interview participant).

Some participants were leery of the notion of bicyclist as a social identity

altogether, arguing that instead it's better to just see bicycling as something you

do that isn't necessarily part of your identity at all. This centered around an

explicit desire for bicycling to become such a normal activity that there would be

no need for it to have an associated social identity at all, and that instead the

label bicyclist would simply denote someone who rides a bicycle and not much

else. Bicyclists also seemed somewhat inclined to resist the bicyclist label

because it associated them with other types of bicyclists that they did not want to

be associated with, although they acknowledged that they still shared this identity

regardless.

> "I don't know. I think that it's kind of a debate in the community about
>
> whether that's a sensible thing to call ourselves, and whether it's othering.
>
> I think that no one would call themselves a bicyclist in Copenhagen or
>
> Amsterdam. That would be ridiculous because it doesn't mean anything. It
>
> would be like calling yourself a driver here. Who the hell is a driver? You're
>
> not a driver, you're a person who happens to have a car, and that's how
>
> you get around. That's how bicycling is in some places. I feel like, in some
>
> places more than here, bicycling is a sign that you're pretty out of

mainstream. I feel like disavowing that term is part of an effort to reject that," (Interview participant).

"And uh, so it's been this sort of evolution that has been very much, um, that I resisted. Like I'm not a cyclist. I don't wear spandex, you know, I think I just resisted it because I didn't want to be. I can see it another way from the way you framed it is I think I have an idea of the stereotype of a cyclist and I'm not that. I don't see myself as that person. And so, you know, feeling like, no, I just, I use it like for, you know, and I love my bike totally enamored with my bike, I'm committed to my bike, but um, some bikey people are kind of intense, you know, I don't feel like I'm in the same category," (Interview participant).

In some sense however, this could be viewed as an attempt to reclaim bicyclist identity from those riders who bicyclists perceived as not representative of themselves or bicyclists as a group and also from other transportation users. There were surprisingly very few examples of bicyclists policing the boundaries of bicyclist identity in a meaningful way which seems sensible for a social identity that most bicyclists didn't perceive as very strong, and those examples seem to be an attempt to normalize bicycling and reject outsider framings of bicyclists as a monolithic social group of deviants while at the same time mildly rejecting other bicyclists who were perceived as fringe group members. Even still, participants

56

believed that bicycling isn't exactly seen as a normal behavior even if they prefer that it was.

"Any complaint that they have about what they see a bicyclist doing out there, they'll raise to me. I don't bring my complaints about drivers to you guys, you know, come on. There's a lot of stupid bikers out there, no doubt, and there's ... So, yeah, it's a mode of transportation for me and I do feel a kinship to other people who bike but that's not my core identity or anything," (Interview participant).

"Yeah, because it's kind of in opposition to the mainstream. I think you might do it to yourself and others might do it to you. It could go both ways. Maybe you want to stand out as doing something different and maybe considered remarkable, or maybe it's important to have a sense of identity to convince yourself to do this thing that is more effort or is more inconvenient some of the time," (Interview participant).

5.2.4 Contested spaces

"They act like I'm not supposed to be there, or that I don't exist," (Survey respondent).

As one might imagine many of the examples of intergroup and ingroup conflicts that emerged from this data were related to the use of roadways by bicyclists and other road users. The way that bicyclists navigated these contested spaces was through strategies of hypervigilance when in contested spaces and avoiding conflict by seeking out more bicycle friendly spaces. These two themes were very prevalent in the data and seem as if they may be core to bicyclist identity and perhaps the closest possible example of the potential prototypical cyclist in Portland and go a long way in helping to further understand bicyclist identity and behaviour. Paradoxically, much of this behavior seems to be an effort by bicyclists to make themselves more visible (e.g. always riding with lights, using reflective clothing, using hand signals, etc) while simultaneously making themselves less visible by making every effort to avoid interactions with other road users altogether when possible. This invisibility theme was one of the most interesting to emerge from the data in terms of its relevance to bicyclist identity and the policy implications of this research.

> "I've had people honk, and be like, 'What the hell are you doing here?' No one is receptive to conversation while they're angry in their car. There's no point. I do have a ready answer, like, 'You go a mile that way. There's a special road that bikes aren't allowed on. Go on that any time you like, and you won't see me there,'" (Interview participant).

"You always have to be on guard because people do not pay attention. Riding my bike and walking in addition to owning a car has made me a more cautious driver," (Survey respondent).

"I make a lot of eye contact and, otherwise, assume I am not seen by drivers," (Survey respondent).

"Then, you know, car traffic is dangerous and people are oblivious and looking at their cell phones all the time, and basically, riding around, you have to be 360 aware and paying great attention to what people are doing and are maybe going to do, because they're not paying attention at all. There's the danger of just mixing it up with all these just really awful drivers. It's only gotten worse," (Interview participant).

"I don't attribute that to some driver being necessarily really inappropriate, we're just like you're kind of pushed into a shared environment. I just don't like the shared environment are all worse. Whenever we have our own space, it seems to work better," (Interview participant).

"Even my daily commute home, I have a decision point if I stop at Trader Joe's on the way home, whether I want to take Cesar Chavez through three blocks or four blocks from Holgate and 39th to Gladstone, and then

go up Gladstone, or if I want to go down a block to 37th and then cross and then go... that way. That way is definitely less stressful, although it's considerably longer, and it's out of my way, I do sometimes choose that instead of riding on 39th. That's because that road is really unfriendly to bikes, and people are angry to see a cyclist on the road there, even if I'm going pretty fast and it's only a few blocks. It's still like…," (Interview participant).

"So the neighborhood greenways are a big part of my commute. I'm sure they're slower, but I'm just not interested in dealing with cars," (Interview participant).

"Just like interacting with drivers. Not that they're always that bad, but just like having to make sure that people are watching out for you. I'd rather just steer clear of any chance of accidents or anything," (Interview participant).

"I sometimes go out of my way to be on a wider street, but it means actually I won't know what businesses exist on the street. I won't know the destinations, because they expect you to be exposed to them as you drive by. I don't even know what's there...Yeah. What's on Hawthorne? I have no idea because I never bike on it. I might go through. In fact I do. I go out

to East Portland, to the other side of Mount Tabor Wednesday nights to

play basketball. I don't know what's on Division. I don't know what's on

Hawthorne even though I'm riding on that street that's right between the

two of them," (Interview participant).

"I definitely feel like others' behavior indicates that they think of me as a

marginal road user. At this point, I just try to pick routes that minimize

interaction with people driving. I often choose to use neighborhood

greenways rather than bigger streets with bike lanes, for instance. So, I'm

particularly annoyed when someone comes cruising down one of those

streets at 35 mph? I've done everything I can to cede the big streets to the

big cars, you know? (Survey respondent).

As bicyclists are indeed vulnerable road users it's clear that both of these

strategies are part of a practical effort to minimize exposure to risk in favor of

certainty. However, while making themselves more visible in contested spaces

while simultaneously making themselves less visible by avoiding these spaces

bicyclists as a group may be working against what seems to be their goal of

normalizing bicycling. On the one hand being more visible and using shared

spaces would go a long way towards normalizing bicycling, but on the other

eschewing contested spaces means bicyclists cede ground to automobile

dominance in those spaces which seems to be at odds with normalizing

bicycling. So while these are practical risk avoidance behaviors they may result in bicyclists engaged in what's considered to be acceptable bicycling behavior being out of view of other road users, while bicyclists who are perceived by other road users and bicyclists themselves as dangerous or inconsiderate norm violators would end up being the most visible bicyclists in contested spaces.

"Well, a 20 something male, who's got a lot of Lycra on. Who's not paying any attention to pedestrians, other bicyclists, who's just going fast. And rolling through stop signs. That's one of my stereotypes," (Interview participant).

"The aggressive, the no helmet, no light bike light riding, just stuff that makes bikers seem like assholes and or at risk of something happening. Which if too many things, bad things happened to bicyclists, people will just start not wanting them on the road," (Interview participant).

"But I don't like it when people, in traffic, will blatantly run a red light and stuff because I think that just brings my neighbors onto me and saying, "This guy ran a red light, I could've killed him!" And that's what non-bikers worry about, they see this inconsistent and sporadic behavior from bicyclists that they don't want to hurt somebody because that's going to

really be a bummer for them too, not just for the person they hit,"

(Interview participant).

While participants in this study made clear that bicyclists are not a monolith, they nonetheless seemed to acknowledge the risks that this situation poses to the image of bicyclists being seen as normative road users rather than scofflaws to out groups. It seems reasonable however, that since bicyclist isn't a particularly strong social identity that bicyclists would choose to maximize their own personal safety rather than pursuing more ethereal goals like normalizing bicycling. Indeed, while bicyclists seem to be aware of the negative perceptions other road users have of them as a social group they don't seem particularly interested in seriously policing the boundaries of that social group preferring conflict avoidance both within the group and with other groups of road users. This could be explained by the fact that the barriers to group membership are low and rooted primarily simply in doing bicycling, or again by the fact that practical considerations are seen as more important than maintaining strict group norms and membership.

> "I hate to see bicyclists without their lights on when I'm driving. It's difficult to see someone when it is dark or rainy out. I also find it annoying when people ride on major through streets when there is a bike route a block over," (Survey respondent).

While cyclists in this study had a general idea of what normative behavior for bicyclists looked like they also admitted to violating those norms themselves under certain circumstances. Bicyclists didn't seem to see some of these infractions as norm violations if they were done for practical purposes. This makes sense as many traffic laws were not written with bicycling in mind, and road infrastructure is sometimes not conducive to bicycling requiring the rules to be bent on occasion however, it does not help bicyclists in escaping the outgroup scofflaw stereotype that they make concerted efforts to avoid. Even still, bicyclists seem interested in presenting themselves as acceptable road users especially when in contested spaces. Bicyclists seem to understand that while they have to share contested spaces with other modes whether they want to or not, and wish that other road users would share the same sentiment.

> "But I do, I do really try to, I really do try to model good behavior, which doesn't mean I follow the letter of law at the time, but um, if there are witnesses I definitely try to, like I'm stopping, you know, um, I think I've been riding long enough I'm very careful and very offensive and defensive, but more often your best defense is good offense and um, so I just assume everybody can't see me and is going to hit me sort of can I be as predictable as possible and all that sort of thing," (Interview participant).

" I (like most cyclists) stop for red lights and slow and yield at stop signs. The laws for bicycles related to stop signs don't align with common sense or physics, and I strongly advocate for an "Idaho Stop" rule for Portland. I would always follow the law if I felt it were practically possible," (Survey respondent).

"And then it's like, you know, so that kind of riding, I just want people to respect each other and ride as if I was a car and the cars are seeing the same thing about me. Like I know I'm going a little slower than some of them, but when all of the traffic is said and done, we end up at the same place at the same time. And so if we're, you know, like at the next red light, we'd get there at the same time," (Interview participant).

"It also depends on where you are because bicyclists have the sort of hybrid status and what part of the right of way you're in you're treated like a pedestrian or you're treated like a motor vehicle," (Interview participant).

Despite the intergroup conflicts with other road users, surprisingly almost all participants described their experiences bicycling as generally positive. Of course every response to this question had a qualifier attached to it, a horror story about a near miss, a crash, or generally unpleasant interaction with drivers, busses,

and even other bicyclists. Participants on the whole though seemed to view these experiences as outliers, which makes sense because if they were everyday occurrences we might expect they might have given up on bicycling and never agreed to participate in this study. However, ingroup conflicts were definitely something many bicyclists pointed out. These conflicts were mostly about other bicyclists not adhering to what are deemed to normative rules for behavior; the behaviors assumed to be associated with the prototypical bicyclist.

> "You'll see clip less pedals and the spandex in the winter. You start to see it now, and both those groups I find kind of antisocial in various ... they don't necessarily follow the rules," (Interview participant).

> "The new, in really different ways. Brand new riders just are still ignorant, right? They're often slow, but then they'll pass you at a red light. I'm like, you know, a. you ran a red light which makes us all look bad, and b. like "I'm just going to pass you in two seconds!" I'm slow, but some of these folks, you wouldn't believe it. The racers are obviously operating ... the speed between them and the rentals is just high. It's just like, all right," (Interview participant).

> "Anyone who's biking everyday does. I see rain pants on everybody. I see fenders on all the bikes. That's what you start to see in the spring, people

riding without fenders. That's another explicitly antisocial thing to do because it sprays the person behind you," (Interview participant).

"It bugs me when people run red lights, because I think it reflects badly on other people who bike, but I don't feel like I'm seeing that so much. Though it'll be spring soon, and out will come the racers and new bike riders? Neither of those groups conforms particularly well to the rules and expectations that other bikers follow. But it's not such a big problem," (Survey participant).

"The brand new bicyclists don't know the routes that are better for riding, and they will bike on the streets they drive on. They'll be like "This sucks! Why does anyone do this?" They'll go on Powell, MLK, or, and I'm like well," (Interview participant).

Interestingly though respondents mostly reported that this is exactly how they became bicyclits; through observation and trial and error. So while bicyclists expressed frustration about this situation they didn't seem interested in rejecting these bicyclists from the group as they still referred to them as bicyclists. Since some participants defined being a bicyclist as having some level of competency, it seems maybe new bicyclists are given a temporary group membership status

until they are able to become bicyclists by becoming competent riders who understand the rules of the road or stop riding.

"Just to look at the sort of over time trajectory, there are a whole lot more people riding their bikes now, particularly the transition when, um, if you will the rookies get back on their bikes, the, you know, the fair weather riders or whatever it might be, those are really dangerous there a couple weeks there where it feels very dangerous because the rules of the road go out the door," (Interview participant).

"My favorite time of riding is this time of year because there are no, there are very few fair weather bikers. So I just get annoyed I love that people are bike commuting in the summer. I think it's fantastic and so I don't want to put the negative spin on it, but it's a slower bike commute in. There are people without helmets on, which I think is awesome. Awful. People are going slowly, people riding next to each other and just chatting on the Hawthorne Bridge which causes delay and the people who are aggressive. Um, so that's annoying," (Interview participant).

"Someone who knows how to ride a bike and enjoys doing so. When I say 'knows how to ride a bike' I'm not talking about someone who can operate the handle bars, brakes, and pedals in order to self-propel themselves on

two wheels. I'm talking about someone who understands how to operate the bike safely on city streets," (Survey respondent).

"Being a bicyclist means you value the opportunities a bicycle presents to you. You ride safely and respectably while on the road, knowing that you represent cyclists as a whole, whether you intend to or not. You stop at stop signs, wait on red lights, and treat cycling on the road more like driving a car," (Survey respondent).

So it seems that while some bicyclists are included in the group, and even referred to as bicyclists they still have not become bicyclists yet. Doing bicycling is enough to grant them membership, but they are seen as another type of bicyclist until they are able to conform to normative group behaviors, which they learn to do through a somewhat haphazard process. Strangely while the barriers to being a bicyclist are low, the barriers are also high in that other bicyclists will view new bicyclists as a fringe group members until they've completed the process of becoming a competent and confident rider. This seems to relate back to the themes of hypervigilance and conflict avoidance so perhaps these behaviors really are at the core of the prototypical Portland bicyclist identity.

Chapter 6: Conclusions, implications, and future research

In summary it seems that bicyclists are indeed a social group in Portland, and this identity is influenced by some of the processes laid out in the theoretical framework that loosely guided this study. Many of the research questions underlying this study were answered. The questions of what it means to be a bicyclist and how bicyclists conceive of this identity were answered as participants in this study indicated that they have an understanding of what this identity is but also made clear that there are different types of bicyclist identities in Portland. Future research on this topic might explore how this identity intersects with other social identities such as race and gender and whether there are aspects that these social identities have in common with one another. The questions of how people become members of this group and how they come to adopt a group identity were also answered by participants in this study. The process of becoming a bicyclist beyond simply doing bicycling seems to be one that is not particularly straightforward and easy to navigate and also seems to be where a lot of ingroup conflicts occur. Notably these findings certainly relate back to the questions about how bicyclists think about other group members and what behaviors they associate with the bicyclist group identity. Future research focused specifically on these conflicts might be helpful in exploring not only how people take up bicycling but how they ultimately become bicyclists. Additionally many respondents indicated that this was a somewhat solitary process while

others did not, so it might be worthwhile to explore how much role social

influences from other bicyclists really plays in that process.

It was interesting to find that the barriers to becoming a member of this

social group are at the same time low but in other ways also quite high. If policy

makers are interested in getting more people to choose bicycling as a mode of

transportation this might be something to consider addressing. Someone who

chooses to ride a bicycle for transportation for the first time will likely immediately

be thrown into a contested space where they are not only confronted with real

dangers from other road users but are expected to learn how to navigate this

contested space on their own. It's easy to see how this could be a daunting

prospect and might be an experience that would turn off new bicyclists quite

quickly. On the positive side though it doesn't appear that bicyclists are overly

interested in marginalizing new group members and instead seem to have a level

of tolerance for these bicyclists even if they find their behavior aggravating or

worry that it is dangerous. The minimal amount of policing the boundaries of the

bicyclist identity that respondents were engaged in seemed to be more about

promoting normative bicyclist behavior rather than rejecting new group members

out of hand.

The fact that some respondents referred to a bicyclist community also

seemed to be a positive in this regard, and is probably something that should be

encouraged if policy makers want to get more road users to choose bicycles for transportation and continue using them. Without some amount of group cohesion and agreed upon norms it is easy to see how many could successfully do bicycling but fail to become bicyclists and ultimately give up on bicycling. Because the process of becoming a bicyclist does not seem very clear and easy to navigate, more research on this process could inform policies that could potentially make this process more predictable and less daunting. There are certainly people out there who will get on a bike and ride it to work one day on a whim, will inevitably encounter discouraging situations or have negative experience, and will continue on the path to becoming a bicyclist anyway. There are undoubtedly others who will not overcome these barriers without assistance that it seems they may be unlikely to receive from other bicyclists in great amounts.

Respondents in this study were very clear in their preference for facilities that were not contested spaces, even though those spaces are obviously unavoidable given the infrastructure that currently exists. Policy wise encouraging more people to choose bicycles for transportation may come down to providing infrastructure that bicyclists want, and this research suggests that the facilities that bicyclists want are those that minimize their interactions with other road users. As I pointed out earlier though, making bicyclists more invisible might be at odds with normalizing bicycling in Portland, assuming that is a goal

that policy makers share with bicyclists. While it couldn't be said that this study

completely defined the prototypical Portland bicyclist, it definitely identified

certain normative behaviors that could very well be at the core of this social

identity and might be worth further exploration. What has also been

demonstrated is that bicyclists do have a sense of how this identity relates to

other transportation identities, and the broader social context. So while many

bicyclists may claim that simply "riding a bike to get places," makes someone a

bicyclist it seems clear that there is much more to it than that.

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Appendix A: Recruitment Flyer

Bicyclists of Portland

Do you ride your bike to work, to school, to the grocery store? If so I want to hear **your story** about being a bicyclist in Portland! The purpose of this research is to develop a better understanding of why people choose to ride a bike for transportation, how people become bicyclists, and what it means to be a bicyclist. This study will help planners and policy makers find new ways to encourage others to choose to ride a bicycle for transportation.

You can share your story about being a bicyclist in Portland by completing an online survey, or by taking part in a brief interview. To find out more, to take the survey, or to schedule an interview go to:

www.bicyclistsofportland.com

Appendix B: Survey instrument

The Portland State University

Consent to Participate in Research Exploring Bicyclist Identity

Introduction:

You are being asked to participate in a research study that is being done by Jennifer Dill, who is the Principal Investigator and Chris Johnson from the Department of Urban Studies and Planning, at Portland State University in Portland, Oregon. This research is studying the social identity of people who use bicycles for transportation.

You are being asked to participate in this study because you use a bicycle for transportation.

This form will explain the research study, and will also explain the possible risks as well as the possible benefits to you. We encourage you to talk with your family and friends before you decide to take part in this research study. If you have any questions, please ask one of the study investigators.

What will happen if I decide to participate?

You will complete a preliminary survey about your demographic characteristics, bicycling behavior, and your experiences as a bicyclist in Portland, you will complete a one-on-one interview, or both.

How long will I be in this study?

If you complete the online survey and do not wish to participate in an interview your involvement in this study will end. If agree to participate in an interview your

involvement in this study will end upon completion of the interview. Participation in this study will take a total of no more than 1 hour over a period of 1 month.

What are the risks or side effects of being in this study?

There are risks of stress, emotional distress, inconvenience and possible loss of privacy and confidentiality associated with participating in a research study. For more information about risks and discomforts, ask the investigator.

What are the benefits to being in this study?

There will be no direct benefit to participants.

How will my information be kept confidential?

We will take measures to protect the security of all your personal information, but we cannot guarantee confidentiality of all study data. Your personal information will not be directly shared with anyone outside of the investigators involved in this study except under the conditions described below in bold text. All data associated with this study, including survey data, interview recordings, and interview transcripts will be stored on password protected digital media or on secure servers and will not be made accessible to anyone except the investigators involved in this study except under the conditions described below in bold text. If you are selected and agree to participate in an interview you will be sharing your personal story about using a bicycle for transportation so there is a possibility that someone reading the results of this study could identify you from transcript excerpts included in the findings. To minimize this risk information that is not relevant to this study that could be used to identify you personally will be omitted from the findings. Examples include your place of employment, the street you live on, etc. For specific concerns about confidentiality not addressed here please contact Chris Johnson at any time by email at cjohn@pdx.edu or by phone at 503-853-5972.

Information contained in your study records is used by study staff. The Portland State University Institutional Review Board (IRB) that oversees human subject research and/or other entities may be permitted to access your records, and there may be times when we are required by law to share your information. It is the investigator's legal obligation to report child abuse, child neglect, elder abuse, harm to self or others or any life-threatening situation to the appropriate authorities, and; therefore, your confidentiality will not be maintained.

Your name will not be used in any published reports about this study.

Will I be paid for taking part in this study?

You can choose to enter to win a $50 Amazon gift card.

Can I stop being in the study once I begin?

Your participation in this study is completely voluntary. You have the right to choose not to participate or to withdraw your participation at any point in this study without penalty or loss of benefits to which you are otherwise entitled.

Whom can I call with questions or complaints about this study?

If you have any questions, concerns or complaints at any time about the research study, Chris Johnson, or his/her associates will be glad to answer them at 503-853-5972. If you need to contact someone after business hours or on weekends, please call Chris Johnson.

Whom can I call with questions about my rights as a research participant?

If you have questions regarding your rights as a research participant, you may call the PSU Office for Research Integrity at (503) 725-2227 or 1(877) 480-4400. The ORI is the office that supports the PSU Institutional Review Board (IRB). The IRB is a group of people from PSU and the community who provide independent oversight of safety and ethical issues related to research involving human participants. For more information,

you may also access the IRB website at

https://sites.google.com/a/pdx.edu/research/integrity.

CONSENT

You are making a decision whether to participate in this study. Your agreement below indicates that you have read the information provided (or the information was read to you). By signing this consent form, you are not waiving any of your legal rights as a research participant. You have had an opportunity to ask questions and all questions have been answered to your satisfaction. By signing this consent form, you agree to participate in this study. Please save a copy of this consent form for your records.

Please indicate whether you consent to participate in this study

○ Consent
○ Do not consent

What is your age?

○ Under 18
○ 18 - 24
○ 25 - 34
○ 35 - 44
○ 45 - 54
○ 55 - 64
○ 65 - 74
○ 75 - 84
○ 85 or older

What gender do you most identify with?

○ Male

○ Female

○ Neither

What ethnicity do you most identify with?

○ White

○ Black or African American

○ American Indian or Alaska Native

○ Asian

○ Native Hawaiian or Pacific Islander

○ Other

What is your current relationship status?

○ Single

○ In a relationship

○ Married

○ Divorced

○ Widowed

Are you currently a student?

○ Yes

○ No

Please indicate the highest level of education you have completed.

○ Less than high school

○ High school graduate

○ Some college

○ 2 year degree

○ 4 year degree

○ Professional degree

○ Doctorate

Please indicate your current household income in U.S. dollars

○ Less than $10,000

○ $10,000 - $19,999

○ $20,000 - $29,999

○ $30,000 - $39,999

○ $40,000 - $49,999

○ $50,000 - $59,999

○ $60,000 - $69,999

○ $70,000 - $79,999

○ $80,000 - $89,999

○ $90,000 - $99,999

○ $100,000 - $149,999

○ More than $150,000

Which of the following best describes the type of housing you currently live in?

○ Apartment

○ Condominium

○ Townhouse

○ Duplex

○ Single family home

○ Other, please describe

[ ]

Please indicate what area of Portland you live in

○ North Portland

○ NW Portland

○ NE Portland

○ SW Portland

○ SE Portland

Please provide your zip code

[   ]

What state were you born in?

[   ]

How long have you lived in Portland?

○ <1 year
○ 1-3 years
○ 3-5 years
○ 5-9 years
○ >10 years

How long have you been riding a bicycle for transportation in Portland?

○ <1 year
○ 1-3 years
○ 3-5 years
○ >5 years

If you moved to Portland, did you ride a bicycle for transportation where you lived before?

○ Yes

○ No

In an average week how many days do you ride your bike for transportation?

[   ]

What destination do you ride your bike to most frequently?

○ To work
○ To school
○ 3-5 years
○ Personal errands

[   ]

Do you have regular access to an automobile?

○ Yes
○ No

In an average week how many days do you drive?

[   ]

Do you ride transit?

○ Yes
○ No

In an average week how many days do you ride transit?

[   ]

Explain why you choose to ride a bicycle for transportation. You may also explain under what circumstances you might choose not to do so.

Describe how you started using a bicycle for transportation. In particular, how did you become interested, how did you learn the rules of the road, and who if anyone introduced you to bicycling?

Describe your experiences, both positive and negative, riding a bicycle for transportation in Portland. In particular, describe your interactions with other transportation users (bicyclists, drivers, etc.)

Would you describe yourself as a bicyclist?

○ Yes
○ No
○ Not sure

What does being a bicyclist mean to you?

How would you describe bicyclists?

If you would like to be entered into a drawing for a $50 Amazon gift card please provide an email address

Use this space to add anything that you feel was missing from this survey or additional comments