

Vehicular Cycling Advocacy

A Case Study of Chapel Hill

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1. Abstract

Since bicycles first became popular in the late 1800s there has been significant debate about the appropriate way to integrate them into the transportation system. During the 1970s cities found renewed interest in building and planning bicycle infrastructure. However, some cyclists felt these facilities diminished their rights and safety. These cyclists refer to themselves as vehicular cyclists and argue that bicycles should have the same rights and responsibilities as any other vehicle (i.e., motor vehicles) on the road. This paper seeks to understand the motivation of cycling advocates in a local context. Four local bicycling advocates from Chapel Hill and two national experts were interviewed to identify major themes in the controversy between advocates for vehicular cycling and advocates for bicycle separation. Two main issues emerged from these interviews: safety and social status. The solutions proposed by vehicular cyclists do not include separate bicycle facilities; however, the overlapping concerns suggests that middle ground that provides well constructed separate infrastructure that meets the needs of bicycles as vehicles would address many of both groups concerns.

2. Introduction

This paper examines vehicular cycling advocacy to gain a better understanding of who the advocates are and why they advocate for shared roadways. With many planners pushing to separate bicycles from vehicular traffic, vocal advocates for sharing road space are often seen as an obstacle to overcome in promoting cycling for the broader population.

Vehicular cycling is a term coined by John Forester, whose principles centered around the idea that cyclists should be treated as drivers of vehicles, and should be entitled to the same rights and responsibilities (Forester, 1993, 1994). According to the vehicular cycling principles, cyclists should behave like regular traffic, which includes passing on the left, making left-hand turns from the left lane, stopping at stop signs and red lights, and following all other rules expected of automobile drivers (Forester, 1993, 1994). This movement began in reaction to efforts by some cities in the 1970s to designate some off-road paths and sidewalks mandatory for bicyclists (John Pucher, Komanoff, & Schimek, 1999). Vehicular cycling advocates generally support initiatives to educate cyclists on how to ride with traffic, improve road maintenance, and construct wide outside lanes; however, they oppose many other bicycle planning initiatives. Infrastructure projects and policies that attempt to differentiate bicycle traffic from motorized traffic are generally opposed by vehicular cyclists (Herlihy, 2004; John Pucher, et al., 1999).

3. Methods

This study of the local Chapel Hill, North Carolina bicycle advocacy debate is based in the history of the bicycle. Before delving into issues on a local level, the study first explores bicycle history, particularly as it pertains to the United States. The diversion of the approach taken in the US and that taken in the Netherlands is briefly highlighted to give a glimpse into varying levels of bicycle use as a mode of transportation.

The history section is followed by a discussion of the two main camps of bicycle advocacy. The first camp is that of the vehicular cyclists – who prefer to be treated as any other vehicle on the road, sharing the same space and the same rights and rules. The second camp is that of those who argue for separate bicycling facilities, such as separate lanes and bike paths, giving cyclists a space in which they do not have to contend as directly with motorized vehicles.

Both of these camps of bicycle advocacy play a vocal role in local discussion. The core of this study is taken from interviews with people from both camps, in order to conduct an in-depth analysis of local viewpoints regarding cyclists and the best ways to incorporate them into the local transportation network. For this study, I have chosen to interview six people. The first four interviewees are local bicycle advocates, two vehicular cyclists choosing to ride mixed with traffic and two cyclists who speak out for increased bicycle specific infrastructure. Each of them is introduced below. The last two interviewees are well-published experts. Because of a request for anonymity, their introductions are omitted.

- **Wayne Pein:** A local fixture in any debate involving bicycles, the council and board minute records provide only a small taste of the countless hours Pein has spent advocating for his version of vehicular cycling. Pein also served for a number of years on the Chapel Hill Bicycle and Pedestrian Advisory Board, including a term as chairman. He rides a bicycle almost daily for commuting and recreational purposes.
- **Udo Reisinger:** An active member of local recreational bicycling groups, Reisinger is an employee of UNC. He has attended some meetings and workshops on bicycling, but has not publicly spoken out against projects. He rides a bicycle everyday, including with his son to elementary school. Reisinger used to ride competitively, but now just for pleasure and transportation.
- **Doug McLean:** Is a faculty member at UNC and currently serves as chair of the group planning the Campus to Campus Bicycle Connection. He also serves on the Pedestrian and Bicycle Advisory Board for Chapel Hill. He rides most days, when the weather is nice, for both recreation and commuting.
- **Jim Ward:** Is a council member and Mayor pro tem for Chapel Hill. He serves as the Council's liaison to the Pedestrian and Bicycle Advisory Board. He rides almost exclusively for recreation on weekends and holidays.

This research project received IRB approval for research with human subjects. Each interview lasted between 45 minutes and 1.5 hours, and in one case there was follow-up email communication. The interviews were semi-structured based on one of two pre-written questionnaires (attached as Appendix A and Appendix B). All of the

interviewees are male, and thus the opinions and themes that emerged from the interviews may miss important issues relevant to female cycling activists.

Nevertheless, several key themes emerge from these interviews, each of which takes its place in this study, ultimately leading to a conclusion about the state of cycling in Chapel Hill, and the direction it is likely to take in the future.

4. History

4.1 Cycling from the late 1800s to 1970:

The bicycle has invoked strong passion from both proponents and opponents since the invention of the velocipede in the early 1800s. While many admired the novelty of the new invention, others ridiculed the riders as “vain dandies” (Herlihy, 2004, p. 24). It would not be until the 1860s that the first wave of popularity occurred in the United States. Although the velocipede was prohibitively expensive for all but a small minority of the population, it spread to all the major cities. There were signs immediately that this new machine would lead to a prolonged debate and struggle for space in American cities. In 1869 in Lawrence, Massachusetts, five cyclists were arrested for riding on the sidewalk, despite the fact that no pedestrians were present. The court fined them a hefty sum at the time of \$5.55 because the “presence of the machines had deterred would-be occupants” (Herlihy, 2004, p. 120). The early controversy for space would intensify when Albert Pope began manufacturing bicycles in the United States in 1878. In 1881 *The American Bicyclist* wrote that bicycle riders had no rights to the streets or roads (Smith, 1972). It was such an acute problem that Pope financed the litigation that paved the way

for cyclists to ride in public parks and on highways (Smith, 1972). Nevertheless numerous ordinances were proposed across the country to limit where cyclists could ride.

Prior to the paving of most roads, smooth sidewalks offered the most appealing place to ride a bicycle. However, pedestrians across the country demanded that laws be passed to prevent bicyclists from riding on the sidewalks. Some people even took their cases to court, and after the city of Newark was held liable for damages to a pedestrian struck by a cyclist while on a sidewalk, many cities banned them from using the smooth sidewalks (Smith, 1972).

Cyclists relegated to the roads did not have an easy time of it. Roads at the time were mostly for horses and streetcars, and cyclists certainly were not welcomed with open arms. Teamsters disliked the bicycles using their road space and argued that the bicycles were scaring the horses. Some cities passed cumbersome rules for cyclists requiring them to dismount in the event of an encounter with a horse. Considering that many bicycles at the time were the high mount style, this was hardly a practical rule. There were many stories in the press of charges of harassment that cyclists received when riding on the roads, and even documented cases where teamsters intentionally drove them off the roads. That is not to say that cyclists were always benevolent, as many of them openly expressed their views that the horse was passé (Smith, 1972).

While the open arguments about cyclists on the roads were with teamsters who felt the space was rightfully theirs, cyclists probably encountered greater logistical problems from the poor state of the country's roads. Prior to the bicycle there was little pressure to fix this problem. However, considering roads in poor conditions rendered the bicycle useless or very dangerous, cycling groups organized to promote the paving of

roads. The most prominent of these groups was the League of American Wheelmen, which was the predecessor to today's League of American Bicyclists. The league organized the nation's first good roads movement by circulating handbooks for making good roads and astutely comparing the poor roads of the United States to the paved roads of Europe. They also marketed their goal by basing it on the importance of roads for moving goods, as argued in "The Gospel of Good Roads," of which the League circulated 60,000 copies. Additionally, they kept the issue relevant by publishing *Good Roads Magazine*, focused on the construction of improved streets and highways (Smith, 1972).

At the same time cycling groups were fighting for better roads, many of them were also arguing for separate paved facilities for exclusive bicycle use. Much like the present day vehicular cyclists, a minority of cyclists at the time were concerned that the "hard-won recognition of wheelmen's rights on the highways would be jeopardized, for cycle-paths would be 'class legislation' and therefore bound to create an unfavorable reaction against cyclemen. As a result, they might lose the right to use public roads and instead be confined exclusively to paths" (Smith, 1972, p. 214). This quote indicates that even before the automobile came about or bicycle paths started being constructed in greater numbers in the 1970's, separation of facilities was already a hot topic in the 1890s.

Most of the grand plans for separate bicycle paths at the turn of the century went nowhere (with a few popular exceptions). However, a cheaper solution was built on many unpaved streets. Strips of roadway were paved adjacent to the curb to provide a smooth riding surface for cyclists (Smith, 1972). Thus, the first cycle lanes in the country were actually better facilities than the rest of the roadway. This led to conflicts with

cyclists complaining that others were encroaching on space intended for them. In response to complaints, the New York legislature passed a law that made driving a wagon on a cycle lane punishable by a \$50 fine, which in today's dollars would be equivalent to \$1,282.

Despite this flurry of bicycle infrastructure construction at the turn of the century, the bicycle lost its allure in the eyes of the public. Utilitarian cycling did continue, but American's fascination with cycling declined from 1900 onwards. With the decline in enthusiasm for cycling and the rise of the inter-urban and the automobile, the bicycle also lost its status as a mode of transportation for the future.

There was a brief period of revived interest in the bicycle during World War II when gas was being rationed. However, much of bicycle manufacturing remained focused on the youth market and the renewed popularity of the bicycle decreased once again in the 1950's with gas rationing over and Americans rekindling their sustained love affair with the automobile (Herlihy, 2004; Smith, 1972).

Much like during the 1940s, when the oil crisis hit in the early 1970s Americans began to rediscover the bicycle. Unlike World War II, when the shortage of oil was due to the war and could be written off as a temporary problem, the oil crisis reinforced to many national and international politicians how fragile oil dependency made the economic sustainability of their countries. One of the most visible measures was that the Netherlands, Germany, Denmark, and, to some extent, other countries invested significant amounts of resources in building separate infrastructure for cyclists to promote bicycle safety and bicycle use.

4.2 The beginning of the vehicular cycling movement:

In the United States there was no major national movement or investment in bicycle infrastructure, but the resurgence in bicycle popularity in the 1970s, as well as local interests and concerns led many cities to consider building separate infrastructure for bicycles. Without major new federal legislation that promoted the funding of separate bicycle facilities, new facilities were concentrated in specific regions or cities in the country, particularly along the west coast. The west coast had key features that made it a likely area for this movement to be the strongest. On the one hand there was a lot of new growth, so there were considerable amounts of money being spent on local infrastructure projects, which, when coupled with a liberal and environmental political climate, made bicycle infrastructure appealing. These communities looked to the example of some of the European countries, particularly the Netherlands as a role model for bicycle separation. However, some cyclists who were used to riding on roads strongly opposed this Dutch style separation.

5. Positions

5.1. View of the vehicular cyclists:

Forester (1994; 2001) argues that separate infrastructure for bicycles is designed by motorists in order to remove bicycles from traffic. Furthermore, he argues that today many bicycle facilities' advocates are anti-motorists who have the false hope that new infrastructure will attract people to switch from driving to cycling (Forester, 1994, 2001, 2007). The crux of vehicular cyclists' argument is that separate bicycle facilities are not as safe as riding according to the current traffic rules on the road. Vehicular cyclists

argue that bicycle paths and tracks that are separate from the road only reduce the occurrence of accidents from behind, which make up a small proportion of bicycle/vehicle collisions (Forester, 1994). Additionally, they maintain that the separate track increases conflicts at driveways, cross streets, bus stops, and turns (Forester, 1994, 2001; Haake, 2009). A main component to their safety argument is that the separate tracks are not safe at the speed an adult cyclist can travel along a major arterial (Forester, 2001). Therefore, if one can cycle safely, but it requires doing so at a slower speed, Forester (2001) maintains that the safety has been degraded. Bicycle lanes and other on-road separation also are opposed, because they suggest that the bicyclists do not have access to the whole road. Forester and others also claim these side lanes and separations induce inexperienced cyclists to stay dangerously close to the curb and make left turns across traffic (Forester, 2007; Haake, 2009)

Forester (2007) defines vehicular cycling in the context of the adult cycling tradition, while advocates for separation of facilities, he claims, belong to the child cycling tradition, which he terms “cyclists-inferiority cycling” (p. 2). There appears to be some evidence for current adult cyclists’ preference for shared facilities. Ipek Sener et al. (2009) finds that the bicyclists they surveyed preferred general purpose lanes to bicycle lanes. They caution though that their survey drew responses from listservs of bicycle enthusiasts who perhaps had a “road warrior” mentality. Forester (2007) and Haake (2009) both make the case that adults and most children can learn to ride with traffic as indicated by the students who took their courses, and infrastructure provisions should not be made for those that do not wish to learn. The hope that those without experience will switch to using the new infrastructure in any significant number is thought to

underestimate the convenience and practicality of the automobile for most people.

Forester (2007) argues that it is likely that no modern city will have a significant bicycle mode-share, and that cycling will remain dominated by people who cycle for enjoyment.

5.2. Arguments for separate facilities:

There are several arguments for increasing the degree of bicycle separation: it promotes equity for young and old cyclists, increases safety along high-speed roads, increases the perception of safety, and increases the number of bicycle trips. Pucher and Buehler (2008; 2009) find that countries with higher degrees of separation have a much more diverse group of cyclists than the USA, Canada, UK, or Australia—countries with very little separation. Jan Garrard et al. (2008) finds that women prefer the maximum separation from motor vehicles, and believe their findings suggest traffic separation is an important component to attracting women to cycling.

Paul Schimek (1996) notes that bicycles are not the model vehicle for roads, which results in road designs that are uncomfortable or dangerous for cyclists. Additionally, arterial streets are generally the most direct routes, but they are typically the most difficult for cyclists. This discomfort translates to perceived risks according to a study by Robert Noland and Howard Kunreuther (1995), which finds that bicycling is perceived to be the riskiest mode by commuters, including bicyclist commuters themselves. Because most bicyclist commuters in this country are, by necessity, on-street cyclists for most of their journey, this indicates that many of them feel vulnerable under current conditions. To avoid riding on streets without any bicycle provisions Nebiyou

Tilahun et al. (2007) finds that cyclists are willing to travel up to 20 minutes longer to ride on a completely separated route.

Unlike the vehicular cyclists, advocates for separation believe that there is a strong potential for the total number of cyclists to increase, and that infrastructure is one means of achieving this goal. Jennifer Dill and Theresa Carr (2003) found a positive correlation between the density of bicycle lanes and paths per square mile and the level of bicycle commuting in the city. In trying to get one step closer to a causal relationship Kevin Krizek et al. (2009) finds that in the Twin Cities bicycle commuting increased at a higher rate between 1990 and 2000 in areas where bicycle infrastructure improvements had been made. However, there is still no true causal evidence to tie infrastructure to bicycle mode share, because other factors such as the population's interest in cycling could be the cause of where high levels of bicycle infrastructure are found.

5.3. The Dutch Model:

One of the biggest arguments for separation is research that shows the success of the Dutch model. John Pucher and others have shown that the Dutch, Danish, and German policies over the last 35 years have lead to increased bicycle use and increased safety (Pucher & Buehler 2008, Ministry of Transport 1999). The Netherlands has been a particular focus of advocates because they have the highest bicycle mode share and lowest accident rates of all of Europe and North America. While Pucher and Buehler (2008) discuss a multifaceted approach to bicycle promotion, the infrastructure component is the most controversial. Forester (2001) argues that the Dutch style traffic separation is a result of motorists' desires to remove bicycles from the street. While this

was perhaps a desire for some, a more in-depth historical account of the history of the Netherlands' bicycle network shows other political and safety concerns were more important than congestion issues for developing a policy to separate bicycle traffic along arterials (Ministry of Transport, 1999). The declining bicycle mode share and the increase in motorization following World War II led to a steady increase in bicycle accidents and fatalities, while more space in a small country was consumed by roads. These issues, combined with the oil crisis in 1973, led the government to announce its first major demonstration projects for bicycle traffic separation (McClintock, 1992; Ministry of Transport, 1999). Following installing a complete and integrated network of separate bicycle facilities in Delft, authorities saw a 40 percent drop in accidents while mode share stayed constant after a brief increase (Ministry of Transport, 1999). Nationally, in the Netherlands, mode share has seen some modest gains since the 1970s, while bicycle travel continued to fall in countries that did not intervene (John Pucher & Buehler, 2008).

6. Chapel Hill Interviews

While this debate has, to a great degree, been a very national one, cycling occurs on a local scale. I chose the town of Chapel Hill to examine how this controversy has played out locally. Chapel Hill is an appropriate place to look, because as a town it has had conflicting views on the subject of how bicycles should be integrated. On the one hand, it has a large university with many students, and, as a result, there are more utilitarian cyclists than would be found in other areas of the state. On the other hand, there is an active cycling club and many residents cycle only for sport. How the town

has chosen to accommodate bicycles has been dynamic over recent years and has moved from less emphasis on separation prior to 2004 to more emphasis since 2004.

The discussions with advocates about cycling were open-ended, but key information that was sought were the backgrounds that have that led them to advocate their specific views, their solutions for other types of cyclists, and their visions of the future. In addition to formal interviews, I reviewed past Chapel Hill town council meeting minutes and spoke informally with others from the cycling community.

6.1. Reframing history:

In retelling the history of separate bicycle infrastructure, Forester (1994, 2001) frames separation as a creation of motorists in order to remove bicycles from traffic. This frame helps him to legitimize his claim that he is writing on behalf of cyclists, while the other side must, therefore, be advocating for the benefit of the automobile. Wayne Pein, a local advocate who holds views similar to Forester's, also framed his opinion about a picture of a Dutch bicycle track by telling his version of the Dutch history of bicycle infrastructure. Pein recalled a version of history in which the bicycle tracks were built originally for moped riders, but when the government began requiring moped riders to wear helmets, they switched to bicycles. While the substance of the story differs from what Forester wrote about, the narrative serves a similar purpose, namely to turn what was a huge public investment for a non-motorized mode of transportation and spin it as a product for motorized traffic. This version of the narrative also implies that the resurgence in cycling in the Netherlands did not correspond to the construction of the paths, but a law requiring moped riders to wear helmets.

While Pein's narrative is an interesting reframing, it is not supported by the Dutch Ministry of Transport's historical account (1999). Although there was a period of moped popularity that coincided with the construction of the bicycle tracks, the bicycle remained the dominant mode of transportation. These tracks were not built with the moped in mind, rather, the government's major national public works projects to build separate facilities were focused on the bicycle (Transport, 1999). Additionally, the design speed of 20 km per hour for tracks and paths suggests that bicycles were the intended users (CROW, 2007). Considering moped riders on slower mopeds are not required to wear helmets, this aspect of the narrative also seems to fit to well with the (perhaps unintentional) goal of discrediting the separation before he explains why he finds it problematic for cyclists.

6.2 Travel purpose:

In some ways, riding to work or riding through the countryside must have some similarities; after all, a bicycle for both purposes works much the same way. Yet, people certainly differentiate between taking a discretionary trip by bicycle as compared to a work trip. In fact, all of the interviewees own multiple bicycles and choose a specific bicycle to use based on the activity in which they are engaging. Each of them has higher-end road bikes that they use for longer country rides. Interestingly, none of them ride their high-end bicycles to work. Many people drive high-end cars to work, considering their luxury vehicles to be a point of pride, yet these cyclists approach their ride to work very differently. They do not want to risk parking a high-end bicycle at the office, and therefore take a more basic model to work when they choose to commute by bicycle.

While these interviewees do not express many safety concerns for themselves, despite the risks their bodies are exposed to by riding a vehicle that can be lifted with a finger, there is a certain delicateness conferred to their lightweight road bicycles that influences their choice not to park them at work. On occasions when the interviewees choose to ride their lighter high-end road bicycles, it is implied that they are riding in a distinct style that differs from how they ride to work. Light road bicycles are built for speed. The interviewees' willingness to invest and maintain multiple bicycles, with at least one road bike included in each of their collections, suggests that speed is a priority for their recreational riding. Reisinger and McLean both admit to being more consistent about wearing helmets when they are riding their road bikes for recreation, indicating that riding on the longer recreational rides makes them feel more vulnerable than riding around in town.

How one uses a bicycle turns out to be very important to his or her perception of what infrastructure is needed. Take, for example, McLean, who rode a bicycle exclusively for recreation before moving to Chapel Hill. When he rides recreationally he rides away from town and into the surrounding rural areas as quickly as possible and does not need or necessarily want bicycle lanes. For this type of road riding he feels that automobile drivers respect for bicycles is important, rather than the provision of separate space for bicycles. If he only rode recreationally, his views might align closely with the principles of vehicular cycling; however, for riding around town he dislikes riding with traffic. On busy streets through Chapel Hill he desires separation and, in certain places, he chooses to ride on the sidewalk to get out of traffic, which sacrifices the speeds that he seeks when riding recreationally.

Reisinger, as a point of contrast, feels much more comfortable riding on streets in town. For his purposes of maneuvering around Chapel Hill, he does not feel the need to be separated from the urban automobile traffic, as he is comfortable riding with the flow of low speed traffic. While he is willing to ride on roads with high-speed traffic, he finds that riding with vehicles traveling 55 miles per hour is nerve-racking. Yet, his dislike of high-speed rural traffic does not deter him from taking country rides recreationally. Reisinger's comfort zone is directly opposite that of McLean's. This helps to explain McLean's contrasting desire to have the security of separation in town, where Reisinger does not feel the need for it.

6.3 User characteristics:

In discussions about whether separate infrastructure is better, the interviewees often turned to the difference in users of the roadway. Certainly in the literature there are stereotypes of certain users preferring things one way or another. Forester characterizes experienced cyclists as preferring vehicular cycling, while inexperienced cyclist express a preference for separation (Forester, 2001, 2007). One of the expert researchers that was interviewed characterizes vehicular cyclists as a fringe group who want to ride as fast as possible.

Pein's view is not that far off from Forester's. He says that people who like bicycle lanes tend to be on the beginning side of the spectrum, and echoes Forester's sentiment that less experienced cyclists are more concerned about traffic from behind than the more dangerous threat of turning traffic. Rather than build infrastructure for less experienced cyclists, he argues that education and advocacy are the way to address their

feeling of disempowerment on the roads. In regards to younger children who lack the skill and coordination needed on busy streets, he suggests that they should ride neighborhood streets and work towards graduating to busier streets when they are older.

Reisinger differs; he has two strings pulling his opinion. On the one hand, he prefers for roads to be clear of separate paths and lane markings, but on the other hand he appreciates them when he rides with his elementary school-aged son. The lane helps his son to know where to keep his bicycle and indicates to cars to stay out of their zone.

While Ward understands Pein's sentiments, he places a high importance on the existence of separate bicycle infrastructure. He acknowledges that there are women and, particularly, men who are capable of riding the speed limit on a bicycle and are competent in traffic. However, he views separate bicycle facilities as vital to providing a viable mode of transportation to the community as a whole, including, but not limited to, mothers, fathers and teens.

6.4 Types of separation

No one in the group saw the issue of separation as black and white, claiming that separation is always a bad thing; however, the places they called for it and the type of facilities varied greatly. Using visual photographs of different cycling infrastructure designs, I sought to dig deeper into the elements of certain designs that the interviewees particularly liked and disliked.

6.4.1 Paths

Picture 1: Bolin Creek Trail



Image Source: Town of Chapel Hill

For the purposes of this paper “paths” refers to off-road facilities that are not parallel to a road. Interviewees were shown the picture above of the Bolin Creek trail as an example of an off road path in Chapel Hill. This type of facility provided mostly positive responses. Everyone felt positively about places where paths give the cyclist exclusive opportunities for time saving short cuts. The Libba Cotton Bike Path, a well used short cut from Carrboro towards the University of North Carolina along a freight rail line, was particular popular among the interviewees, because it enables cyclist to skip a couple of automobile intersections while traveling a shorter distance. On a smaller scale,

Reisinger noted there were a number of cul-de-sacs with cut-throughs for bicycles in his neighborhood, which he really liked. In part because of cut-throughs and the Libba Cotton Bicycle Path, he can bike to work in the same time it would take him to drive. For Reisinger, some of the appeal of these cut-throughs is a feeling of accomplishment in taking the back routes. One of the underlying benefits of off-road paths is that they help to level the total travel time differences between a bicycle and an automobile. Reisinger and Pein also do not take the same objections to the short cuts as they do to bike lanes, because they do not go along a road. Therefore, bike paths do not give them the impression that road space is being taken away in exchange for the path.

Some of the interviewees note that they prefer paths that are marked with some sort of separation between bicycle and pedestrian traffic. Without separation between the two users, as is the case on the Bolin Creek trail, Pein says that paths may be much more chaotic than the streets and, therefore, require cyclists to go much slower. On the one hand he acknowledged that the Bolin Creek trail's built intention was not for cyclists to be able to bike at high speeds, but he feels that since transportation dollars were used to build it, speed and separation between bicyclists and pedestrians are important for it to be a transportation corridor. He cited the Libba Cotton Path as an example where separation between bicycles and pedestrians enables both transit modes to use the space at their own speeds side by side. Interestingly, on that path it is the pedestrians who are marginalized to the side of the path and often ignore the separation in favor of walking together or the middle of the path. This discrepancy between his desire for cyclists and pedestrians to be separated from each other and cyclists and automobile drivers to share the same space as each other seems contradictory. When he is riding as the larger and faster unit on a path

(as a cyclist), he wants the convenience of separation from the slower and smaller unit (namely pedestrians.) Yet, when he is the smaller and perceptually the slower unit on the road (again as a cyclist) he wants respect from the larger and potentially faster units (namely car drivers) to share the same space. Pein explains his views by saying that he considers separation between pedestrians and bicycles justified because pedestrians are not drivers of vehicles whereas cyclists are.

Pein is not alone in his desire for separation of trails and greenways. McLean noted that the Bolin Creek Greenways is a very pleasant place to ride a bicycle, but it is currently at capacity. In order for it to be used as a transportation corridor by many more cyclists, there would ideally be a wider path with some separation between the cyclists and pedestrians. While both would support separation, McLean considers it much more relaxing and enjoyable to ride the Bolin Creek Trail than a roadway, while Pein finds it chaotic and less predictable. Both views are credible, because if a person is riding a bicycle at a slow leisurely pace when a child swerves on the path or a dog leaves its leash, they are not really worried because it is easy to slow down further or stop to avoid the obstacle. However, if a cyclist is speeding along quickly, like one is able to do on most roads, a child swerving and a dog running around may seem chaotic and frustrating due to their desire to negotiate the space at a faster pace.

6.4.2 Tracks

Picture 2: Bicycle tracks in Delft, the Netherlands



Photos taken by: Robin Michler

Bicycle tracks are very similar to a bicycle path, with the exception that they run along an existing roadway. There are a few examples of these in newer areas of Chapel Hill, but it is not the norm here. This type of design is the common pattern across the Netherlands and Germany. Pein really dislikes the ones that were built in Chapel Hill and considers them slightly wider sidewalks rather than mixed use paths. Interestingly, one of Pein's biggest objections to them is how he was treated in an area with bicycle tracks when he chose to forgo them and continued to ride on the road. When there were signs on North Martin Luther King that said "bike path," he was harassed by automobile drivers for riding on the road. In his effort to get the town to remove the bicycle path signs he went to the length of doing an accident analysis to find that accidents had occurred at driveways with bicyclists along the paths. Reisinger is less principally against the separation, but recalls some of his experiences when he found separate tracks confusing or windy. He felt they reduce the predictability of roads that he finds so important. At the same time, McLean notes that he believes separate tracks are safer and

will lead to more people choosing to ride a bicycle. It is true that the literature is mixed on the safety of bicycle tracks, with some studies showing a safety is improved and other studies showing that safety is harmed. One challenge to these studies is that there is often no accurate data of cyclists' volumes. So, in a way both Pein and McLean can be correct in the sense that there may be more accidents along a current path, but if that path eventually attracts more cyclists than a comparable road with no paths it may in fact become safer. A recent study by Paul Schepers (2010) tries to address this issue and found that one-direction bicycle tracks were significantly safer than on-road bicycle lanes. Naturally, the safety of bicycle tracks depends on drivers knowing to look for cyclists, which might be more problematic in Chapel Hill than in the Netherlands.

6.4.3 Lanes

Picture 3: Bicycle lanes in Carrboro, NC (left) and Chapel Hill, NC (right)



Photos taken by: Robin Michler

Bicycle lanes are the most visible separate bicycle infrastructure in the local community. Cameron Street, one of the main arteries to the university campus, is marked with bike lanes (Picture 3, right), as are most of the arteries in Carrboro (Picture 3, left), which is the town adjacent to Chapel Hill. Pein considers the lanes in Carrboro

substandard, because they tend to include the drainage gutter as part of their width measurements (although this is permitted under some circumstances, he feels that it shouldn't be). Even if the road crew creates a smooth seam, giving cyclists the gutter is an insult in Pein's mind. Ward's opinions on bicycle lanes have been particularly dynamic over time. When he first joined the Chapel Hill Pedestrian and Bicycle Advisory Board as the Council Liaison, he thought bicycle lanes were the ultimate goal. However, he was strongly influenced by the convincing arguments of Pein and understood his and other community members' concerns that bicycle lanes relegated them to the side of roads full of debris. Yet, over time, the voices of so many people in the community who need the separation to feel comfortable cycling brought his opinion back full circle to supporting bicycle lanes on many streets. McLean feels that the issues cited about bicycle lanes are elements of design that can be dealt with and easily overcome. His only major qualm with the bicycle lanes in the area is that they do not go far enough in separating bicycle traffic from motorized traffic. There is general consensus among the interviewees that debris is a problem in bicycle lanes. The solution for dealing with the debris from the lane's supporters was to have lanes more regularly maintained, rather than the vehicular cyclists' desire to abolish the bicycle lane altogether.

6.4.4. Sharrows

Picture 4: Sharrow along Martin Luther King Blvd, Chapel Hill, NC



Photo taken by: Robin Michler

The new experimental treatment called sharrows or shared-lane markings is designed to indicate where on the road to ride and remind automobile drivers to expect bicyclists. Sharrows consist of a picture of a bicycle with chevron symbols pointing in the direction of traffic flow (see picture 4, above). This road marking lies to the side of a vehicular lane, but does not actually block that section of the lane off for motorized traffic. Rather, it is designed to indicate where on the road cyclists should ride and to serve as a reminder for automobile drivers to expect bicyclists. While one of the expert

researchers interviewed indicated that the early results from a study show that they are effective, these symbols elicited some strong response from other interviewees. Pein calls the sharrows “methadone for bike lane advocates,” which is not much harsher than McLean, who, from the opposite end of the spectrum, calls them “a prime example of not taking bicycles seriously.” While their dislike of the sharrow is equal, their reasoning differs. Pein once again sees this infrastructure as another tool for pushing bicyclists off to the side of the road. While the symbol is to the right of the lane, the intent is actually to signal to cyclists to ride further inside the lane and away from the drains than many otherwise would. Pein however, would rather see them in the middle of the lane suggesting to people that bicycles have the right to use the entire lane width. In his mind, since buses have the right to stop regularly in the right lane, bicycles should have the ability to ride slowly in any area of the right lane. Pein argues that cars could utilize the left lane if they needed to pass a slow-moving bicyclist, just as they would to pass a slow-moving vehicle. Yet, Pein’s suggestion would require pushing the general pool of cyclists into the middle of the lane with him. Here, one can make the argument that education and empowerment will help people overcome their discomfort. However, the extent of the ability to empower a population of cyclists is somewhat limited. While the cyclists that I interviewed are all highly experienced and willing to ride along any road in town, even they express varying degrees of discomfort about their experiences riding along busy roads like Martin Luther King Boulevard. Reaching the general pool of cyclists, and would-be cyclists, in order to educate and empower them with the goal of making them feel comfortable and confident riding down the middle of a lane of traffic on a road that makes even the most experienced cyclists feel uncomfortable, seems to be

an unrealistic goal. This is not to say that placing sharrows on the right of the lane is necessarily a good solution. Despite the fairly unanimous criticism of the sharrows from the advocate interviewed, Ward did add that with increased citizen advocacy for bicycling, people want to see visible signs of supporting bicycles and sharrows are one way of showing visible support.

6.5. Environmental and economic considerations:

One of the striking differences in the literature between writers such as Pucher, Buehler (2008) on the one hand and Forester (2007) on the other is a different vision of the future. Pucher and Buehler and others believe providing space where more cyclists felt safe would help more people start to bicycle. They point out that 40 percent of all trips in this country are less than two miles and that bicycling is an extremely cost effective way to travel these short distances. On the other end of the spectrum, Forester (2007), Haake (2009) and others write that they expect cycling rates to remain similar regardless of infrastructure. They credit this with the American culture, low density of American cities and low cost of car ownership. Locally, the interviewees expressed views along a similar spectrum, adding topography as a factor of people's interest in cycling locally, due to the large hills in the area.

The interviewees who supported separation have a noticeably more positive future outlook for cycling. McLean noted how congested the main arteries of Chapel Hill are becoming at rush hour, resulting in cars using smaller roads to the detriment of livability in those neighborhoods. Bicycling, he feels, has to be part of the solution to the price of congestion that the town is currently facing.

The difference in perception also projects itself onto the bus system in the area. Pein, in discussing his view of cycling use in the future, noted that he has seen a decline in cycling, which he attributes to the free buses. He compares using the buses to taking an escalator versus the stairs, pointing out that people will more often take the escalator because it is easier. Ward also sees the bus as a type of lift, but in a positive and integrated way. He sees the bus as a way for people to use their bicycles despite the hills, because they can take the bus up the hill one direction and then ride down the hill in the other direction. He also notes that the buses can provide a back-up for cycling in the event of inclement weather.

Reisinger concurred with Pein's skepticism of a large bicycle mode share, by discussing the American concern for image. He argues that people do not want to show up to work sweaty. He also notes that some people lack the physical fitness necessary for using a bicycle as a main mode of transit. He remarks that some people will even drive to a neighborhood gathering. However, he joins Ward and McLean in observing that an increasing number of people started thinking about bicycling, even if they didn't start cycling, when gas prices hit a high in the summer of 2008. Interestingly, even though Reisinger or Pein do not feel like most bicycle lanes are necessary or good, they were willing to entertain the idea that separation may help some people ride who would not otherwise think to do so, unlike Forester (2007), who does not concede this point.

6.6. Enforcement:

The issue of enforcement provides an interesting test case to examine how similar a bicycle is to an automobile in a context other than infrastructure. Part of the principal

of vehicular cycling is that, because bicycles should have equal rights to the road as vehicle, they are equally responsible to obey the rules. One of the key arguments that Forester (1994) claims makes vehicular cycling safer is that cyclist behavior is thereby predictable and standardized.

On the surface, Pein agrees, although like the other cyclists interviewed, there are rules that he does not consistently obey. For example, Pein feels that bicycles should not be expected to come to a complete stop at a stop sign. However, he feels that neither should automobiles. In his mind, the solution to the problem of breaking rules such as this is to change the road rules for all vehicles. In this particular example he would like to see the replacement stop signs with yield signs. This being said, he does acknowledge the downside of enabling cars to travel faster through a residential neighborhood. Additionally, bicycles could generally navigate an intersection much more easily than a car without the implementation of any of type of traffic control. These are also limitations that Pein recognizes, but he considers it too risky and a slippery slope to start legally differentiating between bicycles and motorized vehicles even where there are clear differences in operation and potential threat to others as based on size and mechanics.

An interesting juxtaposition to Pein's take on bicycles and road rule comes from Reisinger. Like Pein, Reisinger prefers integration, but his opinions are formed more from his own experiences rather than from over-arching policy goals and objectives. Reisinger frankly expresses that he has no idea what he would think if he were stopped for violating a traffic rule. He went further to say that he would likely feel that being stopped for a traffic violation on a bicycle was unfair, because there is no precedent for

police holding bicycles to the legal rules of the road in this area. Reisinger follows those rules that he feels are important for safety, and disregards the ones the he feels need not apply to cyclists. He justifies this by the ability of a cyclist to react quickly as well as a major difference between the threat of a bicycle injuring someone and the threat of a motor vehicle injuring someone. Because motor vehicles are more dangerous, he feels they should be held to higher standards. He would like to see more severe punishments for drivers of motor vehicles who injure or kill a pedestrian or bicyclist.

Ward had not considered different rules and regulations for cyclists prior to the interview, but found the idea interesting. He cautions that enforcement of road rules could easily have a more negative bias towards bicycles and pedestrians because they are more noticeable and easier to stop than motor vehicles. Ward also noted the challenges of managing rules for cyclists in a college town with a high population turnover every year. Every year the new community members have to be educated about a whole array of behaviors that may differ from their home communities.

6.7. The promotion of cycling

There is a unanimous consensus among the interviewees on the importance of education to safe cycling. Even the recommended content of this education suggested by interviewees did not differ much. Their general idea is that it is important to teach bicyclists how to ride safely, and that there must also be safety education and information provided to motorist about cyclists, their behaviors, and their rights to the road.

The bigger discrepancy for the advocates is what role signs should have. For Reisinger a sign along the road telling motorists to watch out for bicyclists is a positive

amenity, but for Ward the “share the road” sign is no more than a euphemism for “watch out, no bike lanes ahead.” The signs are an easy way to indicate to people that the town is thinking about cyclists, but no interviewee really described their impact on the behavior of motorists towards cyclists (besides the ‘bike path’ signs). This silence suggests that the interviewees like or dislike the signs not because of their function, but because of what they represent.

7. Conclusions:

The controversy over separation highlighted two major themes: safety and status. “Safety,” as referred to in the interviews, is not necessarily the empirically tested safer design, but rather safety is a more abstract concept and takes on different meaning besides injury or fatality counts. For interviewees who prefer riding in the same lane as vehicles, safety means vehicles acknowledging and reacting to their presence, while safety for those who prefer bicycle lanes and tracks means being as removed from the threat and movement of the automobile as possible, even if it means lower speeds for bicycles. While safety was a reoccurring theme in the interviews, the status of bicycles played an equally large role in how people thought about infrastructure. While vehicular cyclists feel separation degrades their status as legitimate road users and marginalizes them to the less desirable peripheral space, other cyclists seek the visual and physical reassurance of separation that indicated to them that they are legitimate road users, and that people are taking them seriously.

While this paper looked at the vehicular cyclist and the local arguments opposing and supporting bicycle separation, these opponents of bicycle separation are not

necessarily seen as the main obstacle in increasing local infrastructure for bicycles. The challenge to bicycle separation that was cited by advocates of separation was not cyclists opposing them, but whether or not there was available funding. With progressively more availability of funding for bicycle projects, and a recent shift in sentiment on the local Council towards more separate facilities, it is likely that, for now, advocates of separation will see more of their goals implemented locally.

The intent of this analysis is not to provide more concrete policy recommendations, as this would best be accomplished through a broader survey to the local general and cycling populations. Rather, this paper set out to look into the underlying motivations and problems that have shaped the solutions for which people advocate. This is useful because, while on the surface it seems unlikely that a middle ground exists between the two sides, some of the problems with separation cited by vehicular cyclists can be addressed when providing the rest of the population the separation they desire from the automobile traffic. For example, road shoulders and wide sidewalks that are meant to accommodate cycle travel may not be an ideal model for this community. While this infrastructure may address some of the desires of separation, it also reinforces the vehicular cyclists' claim of feeling like second-class road users. Instead, elevating the quality and status of bicycle lanes and tracks that are constructed, improving maintenance, and designing them for the needs of a bicycle as a vehicle, would elevate the bicycle's status on the road, while improving the quality of the separation desired by other cyclists.

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Appendix A

This interview instrument is targeted towards the local advocate. It presumes that the person is familiar with local roads, and it emphasizes their riding behavior in the local context.

Interview Instrument: Local Advocate

Date:_____ Location:_____

Beginning Time: _____ Ending Time:_____

Interviewee:_____

Background:

1. About how often do you ride a bicycle?
2. Are there certain weather conditions in which you do not ride?
3. For what purposes do you ride (e.g. fitness, fun, to get somewhere)
4. What type of bicycle(s) do you ride (e.g. road bike, fixed gear, city bike)
5. Do you follow the road rules consistently?
6. When did you first start to ride a bicycle regularly?
7. If you have children, do they regularly bicycle?
8. What does the term “vehicular cycling” mean to you?

Experiences riding with traffic:

9. How do you feel riding on busy streets like Franklin Street?
10. How about Rosemary Street?
11. Do you feel comfortable riding where there is little room for a car to pass, like on South Greensboro or Estes extension in Carrboro?
12. Do you ever choose to ride on the sidewalk? -If so, when have you made that choice?
13. Do you alter your route to avoid certain streets?
14. What busy roads, if any, do you feel comfortable riding on?

Infrastructure

15. What do you like and dislike about the follow designs:
- a. Picture of Cameron (bike lane with parking)
 - b. Picture of Greensboro (bike lane without parking)
 - c. Picture of MLK (sharrows)
 - d. Picture of Bolin Creek Trail (greenway)
 - e. Picture of 15th Street, Washington, DC (Contraflow bike lane)
 - f. Picture of bicycle track (German or Dutch Style track separated from the roadway)
 - g. Picture of bicycle road (Picture of a bicycle road with auto traffic from Holland)

Enforcement and Rules:

16. Should cyclists follow all the same rules as cars?
- a. If yes: Should there be exceptions, such as stopping at stop signs?
 - b. If no: What exceptions do you think should be made?
17. Do you think the penalties and tickets should be equal for cyclists as motorist?
18. Do you think all cyclists should wear a helmet? (If yes, should this be mandatory?)
19. Should cyclists be required have lights on their bicycle?

Open ended questions to gage priorities and the subject's future vision:

20. What policies to you think are the most effective to promote cycling safety?
21. What policies do you think are the most effective to promote bicycle use?
22. What role do you foresee the bicycle having in this community in the future?

Appendix B

This interview instrument is targeted towards national researchers, and it does not presume prior knowledge of local Chapel Hill riding conditions. These questions seek to gain an understanding of the researcher's perception of vehicular cyclists in addition to their opinions on separation.

Interview Instrument: Expert/Researcher

Date:_____ Location:_____

Beginning Time: _____ Ending Time:_____

Interviewee:_____

About Vehicular Cyclists

1. What does the term "vehicular cycling" mean to you?
2. Who comes to mind when you think vehicular cyclists?
3. What role do you feel they play in policy?

Infrastructure (with pictures only for local interviews)

4. What do you like and dislike about the follow designs:
 - a. Bike lane with parking (Picture of Cameron)
 - b. Bike lane without parking (Picture of Greensboro)
 - c. Sharrows (Picture of MLK)
 - d. Greenway (Picture of Bolin Creek Trail)
 - e. Contraflow bike lane (Picture of 15th Street, Washington, DC)
 - f. German or Dutch Style track separated from the roadway
 - g. A bicycle road with auto traffic

Enforcement and Rules:

5. Should cyclists follow all the same rules as cars?
 - a. If yes: Should there be exceptions, such as stopping at stop signs?
 - b. If no: What exceptions do you think should be made?
6. Do you think the penalties and tickets should be equal for cyclists as motorist?

7. Do you think all cyclists should wear a helmet? (If yes, should this be mandatory?)
8. Should cyclists be required have lights on their bicycle?

Background:

9. About how often do you ride a bicycle?
10. Are there certain weather conditions in which you do not ride?
11. For what purposes do you ride (e.g. fitness, fun, to get somewhere)
12. What type of bicycle(s) do you ride (e.g. road bike, fixed gear, city bike)
13. Do you follow the road rules consistently?
14. When did you first start to ride a bicycle regularly?
15. If you have children, do they regularly bicycle?

Open ended questions to gage priorities and the subject's future vision:

16. What policies to you think are the most effective to promote cycling safety?
17. What policies do you think are the most effective to promote bicycle use?
18. What role do you foresee the bicycle having in the future?