

# Cycling for a Few or for Everyone: The Importance of Social Justice in Cycling Policy

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## Introduction

In his article "The Importance of Bicyclist Education," Bjorn Haake, a professional cycling trainer, criticizes the research findings reported in our article "At the Frontiers of Cycling" (Pucher and Buehler, 2007). Our case study analysis of cycling trends and policies in six cities and three European countries concluded that a multi-faceted approach is the most effective way to encourage cycling. In particular, Haake rejects our finding that an integrated, comprehensive network of well-maintained, well-designed cycling facilities, such as bike paths and lanes, is a key element in any package of policies to promote cycling.

At the outset, we would like to emphasize that separate cycling facilities should not be the only approach to encouraging more cycling and making it safer. Our research shows that such facilities are not sufficient but must be complemented by a host of other measures, such as:

- Improving roadway design to facilitate cycling on roads without separate cycling facilities (e.g. fixing potholes, clearing of debris, wide outside lanes, bike-friendly drain grates, etc.)
- Ample bike parking, including secure and sheltered facilities
- Full integration of cycling with public transport
- Comprehensive traffic education and training of both cyclists and motorists
- Severe penalties for motorists who endanger cyclists, especially in those cases resulting in serious injury or death

- Traffic priority for cyclists at intersections, combined with various intersection design modifications to mitigate car-bike conflicts at crossings
- Promotional, marketing, and informational events to generate enthusiasm and wide public support for cycling
- Restriction of car use, especially in residential neighbourhoods and city centres
- Greatly increased taxes and fees on car ownership, use, and parking to reflect the high social and environmental costs of the car
- Land use policies that discourage low-density suburban sprawl and foster compact, mixed-use developments that generate shorter and thus more bikeable trips.

## Importance of bicyclist education

As readers can confirm, our cycling publications have always emphasized the crucial role of education and training, both for cyclists and for motorists (Pucher, 1997; Pucher et al., 1999; Pucher and Dijkstra, 2000 and 2003; Pucher, 2001; Pucher and Buehler, 2005, 2007, 2008a, 2008b). We have never expressed opposition to the sort of on-road cycling training offered by professional cycling trainers such as Haake.

Moreover, our research highlights the importance of comprehensive, mandatory cycling training for all school children so that they can have the necessary cycling skills and knowledge even at a young age. Haake criticises the cycling training

efforts in Berlin's schools. On the basis of his personal experience as a child, he maintains that there is only theoretical and off-road training of schoolchildren. Our own survey indicated that many Dutch, Danish and German cities do indeed offer on-road training, accompanied by a police officer. Even in those cities where on-road instruction is not offered, surely it is preferable to provide schoolchildren with at least theoretical and off-road cycling training rather than nothing at all, as in American cities.

As so often in his critique of our article, Haake finds one or two specific examples of problems with this or that program and then condemns the entire category of such programs on the basis of a few particular instances of problematic implementation. The solution to inadequate training programs in schools is improving them, not eliminating them. We did not claim in our article that the cycling training in Dutch, Danish, and German schools is perfect, but surely it is better than nothing at all. And since it is already in place and accessible to every young schoolchild free of charge, it is surely the best basis for any improvements.

Haake claims that the only good cycling training is the kind of on-road cycling training that he and his fellow trainers offer, with their exclusive focus on cycling together with vehicular traffic on regular roads. Surely, this is also an important skill, and such training programs make a contribution to overall cycling safety, but they cannot be the only answer. Although such vehicular cycling training courses are offered in many cities in North America, only a tiny percentage of cyclists take such courses on a voluntary basis. Thus, limiting cycling training to the sorts of courses

that Haake teaches would reach only a minute percentage of the population. By comparison, the cycling training courses offered in the Netherlands, Denmark, and Germany reach almost all schoolchildren by the 3<sup>rd</sup> or 4<sup>th</sup> grades. Whatever their limitations, there can be no question that they have far more impact than the fee-based, voluntary courses offered by Haake, however good those on-road training courses might be. Social justice is also at issue here, since cycling education in the schools is free and available to all, while the vehicular cycling training courses offered by Haake usually involve a charge.

Haake claims that his cycling courses are successful, since many participants report feeling more comfortable cycling on roads after completing the course. It is important to note that those participants voluntarily sought out his on-road bicycle training course. Thus, Haake observes individuals who were committed to on-road cycling before the course even began. This self-selection of participants undermines the validity of his conclusion. Few Americans would even consider taking the sort of on-road cycling course offered by Haake and his colleagues. Most people would feel uncomfortable looking backward while cycling forward, a technique that Haake teaches his students and considers essential to vehicular cycling skills.

### **Importance of motorist education and law enforcement**

In his critique, Haake ignores the equally important problem of inadequate motorist education and training. As we have documented in all our publications, it is crucial that motorist training and licensing procedures focus on the need for motorists to share the road with cyclists and to avoid endangering them.

In fact, that is a central part of motorist education and testing in the Netherlands, Denmark, and Germany, while it is totally neglected in the USA. Furthermore, it is crucial that the legal rights of cyclists on roadways be strictly enforced, and that motorists who violate them be punished in a meaningful way to reinforce what is taught in driver training. The police and courts in the USA have almost entirely ignored cyclists' right to be protected from motorists while riding on the road (Komanoff, 1999). Even in cases where motorists are unquestionably at fault, summonses are rarely issued to motorists for causing crashes that kill cyclists.

In short, we find Haake's call for focusing solely on on-road cyclist training too narrow. Traffic education must be far more comprehensive, including both cyclists and motorists. And it cannot be limited to vehicular cycling training courses for adults but must start with schoolchildren, as in northern Europe, at an age young enough that children can cycle to school on a daily basis and continue cycling for the rest of their lives.

### **Separate cycling facilities**

Haake acknowledges the potential of separate cycling facilities between cities or in rural areas, and specifically cites the American River Trail near Sacramento, California. However, he opposes any sort of separate cycling facilities within cities, where almost all daily trips are made. There are many different kinds of cycling facilities, which vary in location, design, and degree of separation from other modes. Depending on cost, space availability, and roadway traffic conditions, different facilities are appropriate in different situations. There is no universal consensus on the exact

terminology, but the general categories of cycling facilities include the following:

- **Urban cycle tracks**, which are bike-only on-road lanes protected from motor vehicle traffic by barriers of various sorts. Such cycle tracks provide separation from both pedestrians and motor vehicles while keeping cyclists in view of motorists to a greater extent than bike paths (sidepaths) on the sidewalks.
- **On-street bike lanes** that are not protected by physical barriers and are often blocked by double-parked cars, delivery vehicles and endangered by car doors being opened into the path of on-coming cyclists. The main advantage of such lanes is that they are cheaper and easier to build and place the cyclist in view of motorists. Their main disadvantage is that they provide no physical protection at all from motor vehicles.
- **Protective lane striping for cyclists** ("Suggestivstreifen" or "Angebotsstreifen" in Germany), which are similar to bike lanes but narrower (due to space limitations on the particular roadway) and are demarcated by dashed striping instead of a solid stripe. They provide less protection than a full bike lane, but help signal the presence of cyclists to motorists.
- **Combined bus-bike lanes**, which are extra-wide lanes for accommodating both buses and cyclists, common in many northern European cities.
- **Bike paths on sidewalks (sidepaths)**, which have a distinctive pavement or color to demarcate them from the footpath.
- **Off-road bike-only paths** parallel to urban roads but set off from the

roadway and completely separate from footpaths.

- **Bike-only paths through parks,** forests, and open space, sometimes referred to as green cycle tracks
- **Shared-use paths (often in parks)** that are separated from motor vehicle traffic but permit use by pedestrians, joggers, in-line skaters, skateboarders, rollers, and various other non-motorized users.
- **Bicycle streets,** which are common in many northern European cities, and give cyclists absolute right of way priority over the entire width of a narrow urban street with light traffic. Car use is permitted provided it is at very low speed and does not interfere with cyclists.
- **Bike boulevards,** which are being implemented in North American cities, generally on lightly traveled roads with minimal truck traffic, and with specific signage directing motorists to share the road with cyclists. While bicycle streets in Europe give cyclists absolute priority, bike boulevards simply emphasize cyclists' equal rights to the road with pavement markings and signage.
- **Traffic-calmed residential streets,** which reduce speed limits to 30km/hr in Europe (20mph in the UK), both by posting reduced speed limits and by various kinds of physical modifications to roadway to prevent high speed use by motor vehicles. The greatly reduced speeds and light traffic volumes make these traffic calmed streets ideal for cycling without any special cycling facilities of any kind.
- **Super traffic-calmed residential streets,** called Woonerfs in the Netherlands, Spielstrassen in Germany and Home Zones in the UK.

Speeds are further reduced in these zones to walking speed (officially 7km/hr).

- **Bike boxes, advance stop lines, special bicycle traffic signals, special marking and coloration of bike lanes, and various other intersection modifications are also an integral part of the overall cycling network infrastructure.** European cities have been constantly improving the design of these intersection facilities for cyclists to improve safety, especially by reducing the problem of conflicting traffic streams at intersections.

Haake rejects virtually all of these special cycling facilities in cities as unnecessary, inconvenient, and dangerous. Similar to Forester (1992), Haake insists on one and only one way to bike: vehicular cycling. According to this approach, all cyclists should be forced to learn to operate their bikes as they would motor vehicles and ride in mixed traffic on roadways, even on urban arterials. No special protection or physical separation is to be allowed for cyclists, regardless of the speed and volume of motor vehicle traffic, the presence of large vehicles such as trucks and buses, and the carelessness or outright hostility of motorists toward cyclists on the roadway. Haake cites a few anecdotal examples of cycling facilities that are badly designed or poorly maintained. He explains why specific cases of such facilities are unsafe and inconvenient, and then concludes that all separate cycling facilities are unsafe. For example, Haake shows a photo of a bike path covered with leaves one particular day in autumn and suggests that all bike paths are poorly maintained. One could just as easily

show a photo of a roadway perforated by dangerous potholes or littered with glass, trash and other debris. Both are specific examples of bad situations but hardly provide proof of a general problem. There can be no question that some cycling facilities are badly designed and poorly maintained. But many roads are also badly designed and poorly maintained. The solution is to work on improving the design of both cycling facilities and roads, not doing away with them.

The more general argument of Haake is that separate cycling facilities, by their very nature—even if well maintained—are intrinsically unsafe and inconvenient, and thus should rarely if ever be built, although Haake makes the exception of inter-urban trails. He provides no empirical evidence to back up his views. He makes a variety of theoretical arguments about the dangers of separate facilities and cites a few especially egregious examples of badly designed facilities. But he does not provide a comprehensive statistical analysis that actually measures cycling speed, volumes, and safety in a large sample of representative facilities.

In fact, the overwhelming evidence is that cycling is much safer and more popular precisely in those countries where bikeways, bike lanes, special intersection modifications, and priority traffic signals are the key to their bicycling policies. As shown in our article “At the Frontiers of Cycling,” the modal split share of cycling is more than ten times higher in the Netherlands (27%), Denmark (18%), and Germany (10%) than in the USA, where less than one percent (0.9%) of urban trips are made by bike. Moreover, the fatality rate per 100 million km cycled is almost six times as high in the USA (5.8) as in the

Netherlands (1.1) and over three times as high as in Germany (1.7).

Haake does not dispute these statistics, and he cannot explain away the greater safety and popularity of cycling in northern Europe. If bikeways and bike lanes are so dangerous, slow, and inconvenient—as he claims—then why is cycling overall so safe and popular in the Netherlands, Denmark, and Germany? Conversely, if vehicular cycling is so much safer, faster, and more convenient, then why is cycling so unsafe and so unpopular in the USA? Vehicular cycling, as Haake points out, is already possible on most urban roads in the USA (except limited access highways). Yet with vehicular cycling already possible, and with Forester-inspired ‘effective cycling’ classes offered all over the country, cycling still accounts for less than one percent of all trips.

Within the USA, Davis (California), Portland (Oregon), and Boulder (Colorado) are famous for their extensive systems of separate bicycling facilities. Moreover, they are the only three American cities that have earned the coveted “platinum” level status awarded by the Bicycling Friendly Community program of the League of American Bicyclists—for which Haake himself is a cycling trainer. Davis, Portland, and Boulder all have high cycling rates (relative to other American cities) and excellent safety records. That directly contradicts Haake’s claim that separate facilities are slow, unpopular, and dangerous.

Haake fails to provide empirical evidence for his claim that separate facilities are unnecessary and that on-road cycling training is sufficient for everyone’s cycling needs and abilities. He does not provide any specific examples of cities in Europe or North America that have raised

the share of bike trips to ten percent or more by focusing exclusively on vehicular cycling, while providing no separate cycling facilities at all. If cycling on roads is so safe, convenient and popular, then surely he must be able to find that sort of evidence. In fact, he provides no such evidence, while he ignores the overwhelming empirical evidence that separate facilities are crucial to raising cycling levels and improving cycling safety.

Haake criticizes several aspects of bicycling policy in Berlin, especially its extensive cycling network. Berlin has over 1,000km of separate cycling facilities: 620km of separate cycle tracks and bike paths, 60km of on-road bike lanes, 50km of bike lanes on sidewalks, and 190km of off-road bikeways through forests and parks. There are also 70km of combined bus-bike lanes and 100km of shared-use paths (City of Berlin, 2009a). In addition to that separate cycling infrastructure, 3,800km of residential streets are traffic calmed with a speed limit of 30km/hr or less. Thus, the total network of separate cycling facilities and traffic calmed streets in Berlin is almost 5,000km long.

As the network of cycling facilities in Berlin has expanded in recent decades, bicycling has boomed. The bike mode share in Berlin increased from 7 percent in 1992 to 10 percent in 2006. That is the highest bike share of trips in any European city of comparable size, and about ten times higher than any American city of comparable size. At the same time, cycling safety increased. Between 1992 and 2006 cyclist fatalities decreased by over 60 percent (from 24 to 9) (City of Berlin, 2009b). Clearly, the bicycling facilities and training programs in Berlin cannot be as terrible as portrayed by Haake. Most large American

cities would consider it an unimaginable success to have a tenth of their trips by bike.

In short, those countries and cities with extensive bicycling facilities have the highest cycling mode shares and the lowest fatality rates. Those countries and cities without separate facilities have low bike mode shares and much higher fatality rates.

### **Importance of social justice in cycling policies**

Our research shows that separate paths and lanes are especially important for those unable or unwilling to do battle with cars for space on busy roads such as arterials with heavy traffic and many large vehicles such as trucks and buses. Training courses may help, but they do not eliminate the inherent danger of cycling on the same right of way with motor vehicles, particular for those whose mental or physical conditions limit their ability to safely negotiate heavy traffic. The slowed reflexes, frailty, and deteriorating eyesight and hearing of many elderly make them especially vulnerable. Limited experience and unpredictable movements put children at special risk on streets. Moreover, regardless of age, many people prefer to avoid the anxiety and tension of cycling in mixed traffic, aside from the safety hazards. Most Europeans believe that bicycling should not be reserved only for those who are trained, fit, and daring enough to navigate busy traffic on city streets.

In the vehicular cycling model, cyclists must constantly evaluate traffic, looking back, signalling, adjusting lateral position and speed, sometimes blocking a lane and sometimes yielding, always trying to fit into the 'dance' that is traffic. Research shows that most people feel

very unsafe engaging in this kind of dance, in which a single mistake could be fatal. Children as well as many women and elders are excluded. While some people, especially young men, may find the challenge stimulating, it is stressful and unpleasant for the vast majority. It is no wonder that the model of vehicular cycling, which the USA has followed de facto for the past forty years, has led to extremely low levels of bicycling use.

Once more, the important issue of social justice arises. As documented in detail in our July 2008 article "Making Cycling Irresistible," countries with extensive cycling facilities (such as the Netherlands, Denmark, Germany, Belgium, and Sweden) have roughly the same number of women as men cyclists. By comparison, men account for 75%-80% of cyclists in countries such as the USA, Canada, and Australia, with far fewer and less integrated cycling facilities. Similarly, cycling is fairly evenly distributed among all age groups in countries with extensive cycling facilities, while in countries without them, cycling is mostly for young adults.

Here, then, is perhaps the strongest argument of all for separate cycling facilities: they enable a wide spectrum of the population to cycle at the same time they raise overall cycling levels. And that is the real choice. Do we really want to restrict cycling to a tiny percentage of the population and exclude most women, children, and seniors? Or should we be truly inclusive and design our cycling policies for everyone? Clearly, most people will not cycle without separate cycling facilities. They are not a panacea for cycling, but combined with the full range of pro-cycling measures listed at the outset of this paper, separate facilities are the key to raising overall cycling levels by appealing to the

broadest possible range of social groups. Cycling should be for everyone, not just for the few who are willing to undergo extensive training as vehicular cyclists and only ride on the road.

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