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## **Two Systems for Bicycle Operation: Obeying the Rules of the Road or Cyclist-Inferiority; with Some Discussion of the Dutch System**

This is the paper on which I will base my keynote speech at the iCSC Cycling Safety Conference, Helmond, the Netherlands, 20 November, 2013

### **1 Operating Systems**

There are two American systems for operating bicycles in traffic. In one, cyclists operate by obeying the rules for drivers of vehicles. In the other, cyclists operate subservient to motorists in the cyclist-inferiority manner invented by American motordom.

In Britain, cyclists operate as drivers of vehicles. In Northern Europe cyclists operate by rules different from those for motorists. My discussion takes it as proved that if all roadway users obey the same rules, they can all use one set of facilities, while if there are two groups of users who obey conflicting rules, they must each have their own facilities. I also make an explicit assumption that ought to be generally obvious: all operations occur on ground level.

With one set of rules, delays must exist where streams of traffic cross each other. These conflicts are settled by right-of-way rules, assisted by traffic signals. With two sets of rules, each class of traffic creates its own delays, to which must be added the additional delays caused by interaction of one class with the other class. As well, two sets of facilities will occupy more space than a single set of equal carrying capacity.

#### **1.1 Amsterdam Example**

By this analysis, one would guess that the single rule system would be best for cities with cramped space, such as Amsterdam. But that is not what occurred. Amsterdam had functioned as a walking city, assisted with bicycling, and with some motoring, largely for freight. However,

modernity intruded. In a very short time period, mass motoring became available and proved so desirable that cars filled up every available space. Traffic slowed to snail's pace and casualties increased, particularly to children. This proved that a walking city cannot be operated by individual motor transport, and this change proved faster than society can adapt. Faced with the cost of adapting the city to motor transport and the social revulsion at the death of children, Amsterdam revolted against motoring by greatly restricting motor access, limiting the space available for motoring, and reserving space for cycling and walking. By these means, the city was able to return to its historic mode of operation as a walking city assisted by cycling. Amsterdam was not alone with this history, and this system became the general model for cities in this area. Given the initial decision to base their bicycle transportation model on a walking city with separate spaces for motor and bicycle traffic, the Northern European nations have done a reasonable job of working out the problems created by that mode of operation.

Every traffic system has to have its own rules. Because mass motoring was a recent, sudden, and disruptive innovation, the Dutch were able to use the revulsion against it to establish rules that favored cyclists over motorists. The typical Dutch cyclist loves his system; cyclists have their own space, their own traffic signals, and laws favoring them.

However, things are not perfect. Some cyclists notice, with disapproval, the additional delays. The latest and most careful studies from

Copenhagen (Jensen) conclude that their system for ameliorating the hazards created by cycle tracks still allows more car-bike collisions than would occur on a normal street.

## 1.2 California (and USA) Bikeways

The USA has very few walking cities today: the older parts of Boston, New York City, Philadelphia, and San Francisco might be so considered. The rest, no matter how they started, have developed as automotive cities. (Those listed above, with the addition of Chicago, can also be listed as mass transit cities.) Furthermore, America has never had a cycling society; the peak membership in the League of American Wheelmen was attained in 1898, long before mass motoring occurred. Bicycle transportation was limited to home delivery of telegrams (before telephones became ubiquitous), home delivery of newspapers (before young men obtained cars), delivery of documents and such in very crowded urban centers (now lessened by electronics). Some poor people used bicycle transportation, but they did not make themselves conspicuous and looked forward to obtaining cars. And, of course, by children, looked on either as recreation or as school-directed. Since children belonged to voting parents, children were the only cyclists noticed by government and society.

However, there were always a few adults who cycled for pleasure and amplified their pleasure by cycling for transportation. Some of them were European immigrants who brought their habits with them, some were Americans who had visited Europe, while most were native born and raised. We obeyed the rules of the road and that worked fine. Some parts of America, particularly California, have major hills; every morning I hurtled downward through commuting traffic as fast as the cars, sometimes faster.

Government paid no particular attention to us, and we had no need to pay attention to government, just so long as we obeyed the rules of the road. However, we recognized that the other cyclists we saw on the road, mostly children, stuck close to the edge of the road or else made dangerous movements. We knew how to cycle properly, while most Americans did not and taught their children to ride incompetently in fear of traffic. Once I decided to discover the content of the bicycling instruction, I described it. "The cyclist who rides in traffic will either slow the cars, which is Sin, or, if the cars don't choose to slow down, will

be crushed, which is Death, and the Wages of Sin is Death."

That was the official situation until 1970, but it was preceded by the 1960s. Besides the social turmoil of the 1960s there was demographic change. The rapid expansion of American suburbia produced a cohort of transportationally deprived young adults: no mass transit and insufficient cars. They took to cycling. So too did many older adults who added the pleasures of cycling to their motoring experiences. Most of these cyclists tended to obey the rules of the road because that worked best for them.

The rules of the road arrange that the interplay between drivers is reasonably safe while providing effective transportation. These rules are in accordance with the characteristics of wheeled vehicles and of their human drivers. These rules have had more than a century of experience and development; they now work extremely well and define almost all traffic situations. The driver who understands how these rules work (which is not the same as understanding the legal verbiage in which they are stated) can just enter traffic and go wherever the roads go. It is freedom of travel, granted to all drivers of vehicles.

This is the freedom that increasing numbers of American cyclists enjoyed in the 1960s. We had very little more concern for traffic than does the typical motorist. Certainly, there were times when traffic was jammed up and a nuisance, but then there were the times when we cyclists got through jams faster than motorists, and we had the enjoyment of cycling while doing so. Cycling in traffic is far more enjoyable than motoring in traffic, which is mostly a bore. Those who are afflicted with the cyclist-inferiority phobia cannot understand this; that's one more problem their phobia causes them.

This freedom to operate by the rules for drivers of vehicles is what American motordom had tried to prohibit us since about 1940. They were lowering us from equality as drivers to be subservient to motorists, to limit us to the edge of the roadway (or off it), and to require us to operate dangerously by prohibiting us from obeying the safe rules of the road. All done to make motoring more convenient.

American motordom, believing bicycle transportation was obsolete (except for children) had ceased worrying about it. But the sight of increasing numbers of adult cyclists woke them up to the fear that the roads that they considered theirs would be plugged up by hordes of bicycles.

Whether or not their fears were realistic, they decided to do something about this menace.

California took the lead. They already had a traffic law restricting cyclists to the right-hand edge of the roadway. We didn't worry much about that, but, of course, we tried to make room for motorists to overtake on our left and matters seemed to be working out satisfactorily. Because we did not pay attention to legislative matters, we did not know the arguments that had been presented, in 1963, to the legislature when discussing adoption of this far-to-the-right (FTR) law. The California Highway Patrol, a very big wheel in traffic and traffic-law matters, argued that traffic law for bicycles had to be so simple that any child could understand it. Therefore: stay right for fear of death became the belief produced by the law.

But by 1970 California's motordom feared that the FTR law was insufficient. To control this oncoming horde of bicycles, they determined to produce a bikeways system and a law restricting cyclists to bikeways, wherever they chose to build them. They contracted with the traffic operations section of the University of California in Los Angeles (UCLA) to produce bikeway designs, which were drawn from Dutch and German cycle track practice. The legislature then set up a committee to work out the required restrictive laws. This California Statewide Bicycle Committee consisted of eight representatives of motoring and highway organizations, entirely of motordom. This was all done in secret; cyclists had no idea of what was coming.

I read a short newspaper announcement that a state committee about bicycle traffic law would hold its second meeting within reach of my house. Because I had already been in the fray when my city tried to restrict cyclists to sidewalks, and I had a day free, I attended to see what was going on. Many good words, eventually meaningless, were said. I suggested that they needed cyclists on the committee, and I offered myself as a thoroughly law-abiding cyclist. That's where the differences started. By law-abiding, I meant obeying the rules of the road for drivers of vehicles, while the committee thought that I meant I would obey any damned-fool and dangerous law they would invent. The committee never told me of the existence of the UCLA bikeway designs, and never told me that the committee's only purpose was to strengthen the laws restricting cyclists to the edge of the roadway and to bikeways.

I had to work out the committee's goal from its actions; then I had to discover the existence of

the UCLA bikeway designs. Once I had done those things, I purchased a mimeograph machine, stencils and paper, and many postage stamps, and started publishing a newsletter informing all the California cyclists I knew of the plan for what was going to be done to them. That raised an uproar. The California Association of Bicycling Organizations (CABO), which had rather gone to sleep, became revitalized at this challenge to our cycling, and other cyclists started attending meetings.

Many years later, Dutch cyclists and American bicycle planners ask why California cyclists objected to so safe a system as was being offered. The plain fact is that motordom paid no attention to cyclist safety. Motordom wanted only to shove cyclists aside for the convenience of motorists. That they did, without considering, refusing to consider, any of the safety features required to ameliorate the additional dangers so caused. As long as cyclists were out of the way of same-direction motor traffic they would be safe and all would be well. Besides, cyclists were not capable of operating in the complicated system of traffic law. That was, and is, motordom's belief system. Forty years of propaganda had produced this belief system. Motor vehicles are by far the best transportation system, the roads are made for them, slow obsolete traffic endangers motorists, and only trained motorists are capable of obeying the rules of the road.

When looked at from the cyclist's viewpoint, this motorist-superiority superstition becomes the cyclist-inferiority superstition. The cyclist travels along oppressed by feelings of guilt for trespassing on the motorists' road and for slowing motorists down, by feelings of fear about being hit by same-direction motor traffic, and by feelings of helplessness for being utterly incapable of doing anything about his situation. This is not merely a superstition. It is a phobia, the cyclist-inferiority phobia. A phobia is a greatly exaggerated fear of a rather minor hazard that causes its victim to act contrary to his best interests. That is exactly what we have here.

Consider the two salient points of the cyclist-inferiority superstition. The first is that same-direction motor traffic constitutes by far cyclists' greatest danger, so great that the hazards caused by turning and crossing motor traffic are relatively insignificant. The second is that cyclists are not capable of obeying the rules of the road for drivers of vehicles. At the time California was starting its bikeway program we cyclists knew that neither of

these superstitions was correct. We had the experience to know these things, but, without scientific evidence, we were overruled by motordom's motorists who were ignorant of cycling. However, halfway through the operations of the Statewide Bicycle Committee, the first superstition was proved entirely wrong. Motordom had contracted with Ken Cross, an expert about military helicopter crashes, to study California car-bike collisions. In this, Cross's first study, of car-bike collisions in the county where he lived, collisions caused by straight-ahead motorists hitting straight-ahead cyclists were only 0.5% of all. Motordom had expected Cross's study to support their superstition, and held a meeting for its presentation. Copies were handed out at the meeting, but when motordom discovered that the data completely refuted their superstition they suppressed the study. I kept my copy for later reference.

Despite the fact that this first Cross study completely refuted motordom's desires, they refused to follow the facts; just kept on with the same old arguments. The second Cross study, of a pseudo-random national sample, provided much greater detail. To put things crudely, 95% of car-bike collisions involve turning or crossing movements, while only 5% involve straight-ahead cyclists and same-direction motorists.

To make a long story short, we California cyclists managed to get the most dangerous bike-way designs and most dangerous bikeway laws rejected and replaced with less dangerous ones. The California designs and laws became accepted in almost all states of the United States.

### 1.3 Vehicular Cyclist Training

The second part of the cyclist-inferiority phobia, justifying restricting cyclists to the edge of the roadway or to bikeways, is the claim that cyclists are not capable of obeying the rules of the road for drivers of vehicles. In 1971, when California attempted to make us cyclists ride as if we were incompetent children, we knew that this was incorrect. We knew it was incorrect because we had obeyed the rules of the road for years; in my case, since I was a child in England. Just as when the collision statistics refuted the claim of the great danger of same-direction motor traffic, the motorists who controlled the California Statewide Bicycle Committee kept insisting on cyclists' incapability, despite the statements of many cyclists. At one point California put up money for a study to see whether cyclists could turn their

heads and see behind. Maybe they expected this study would support their superstition, but instead it demonstrated that cyclists could look and see behind.

Defeated at this point, California's motordom retreated to calling my associates "professional cyclists", although we were all amateurs devoting unpaid time to public service. This enabled motordom to maintain that the amateur general public was not capable of cycling in accordance with the rules of the road. It took ten years to sort this all out.

To save time and space I'll discuss only teaching of children, which most people think is most difficult. It is not. There has to be one critical initial assumption: road design and the rules of the road form one coherent and consistent system for the reasonably safe and effective operation of traffic. There has to be an initial teaching assumption: don't teach the words of the rules, teach the sequence of thoughts and movements that each rule requires. Furthermore, instruction takes place on real roads with real traffic, starting with very easy conditions and progressing to more difficult ones.

Traffic operates on very few basic principles:

- 1: First come, first served
- 2: Ride on the right part of the roadway, not on the left and not on the sidewalk
- 3: When meeting crossing traffic, know when one must yield and how to yield
- 4: When moving laterally on the roadway, yield to traffic in the new line of travel
- 5: Between intersections, slow traffic is near the edge, faster traffic to its left
- 6: When approaching intersections, right-turning traffic is far right, left-turning traffic is near the center, and straight-through traffic is between them

Teaching the proper side of the roadway is easy. Now consider the first traffic action of any ride, entering the roadway. The cyclist approaches the edge of the roadway and looks both ways. "What are you looking for?" "No, you are not looking for traffic; you are looking for no traffic. When you see that no traffic is approaching, then you can enter the roadway." This movement is repeated, under the eye of the instructor, as often as needed until the student reliably makes the movement properly.

The course of instruction starts with the easiest movements under the easiest conditions, and builds from there by progressing to more compli-

cated movements and more complex conditions, preferably built into interesting rides. I have demonstrated instruction with classes of students aged eight, aged ten, and aged thirteen. In each case, the length of instruction was fifteen class hours. The number of students taught at one time varied. For eight-year-old students, I had one assistant instructor for each group of six or seven students. For ten-year-old students, the number of students per group increased to ten or so. For thirteen-year-old students, the number of students per group went up to fifteen. The eight-year-old students learned all that was required for cycling on two-lane residential streets. The ten-year-old students learned to ride on multi-lane streets with low-speed traffic, such as is found on shopping streets. The thirteen-year-olds learned to ride on multi-lane streets with faster traffic. All students were tested and their performances scored during rides in streets of the type for which they had been trained. The scoring system awards positive points for each movement made and negative points for each mistake observed. This is set up according to the safety importance of each movement and each mistake, so that the minimum passing score is 70%. My student groups earn about 95% on these tests, while typical American adult cyclists riding to work score only about 55%.

#### 1.4 The American Situation

Starting in the early 1920s, American motordom conducted a campaign advocating motor travel as being the prime purpose of streets and highways. This had the following results with respect to bicycle traffic.

- 1: It restricted cyclists to the edge of the roadway, or off it where paths existed
- 2: It threatened cyclists with death should they leave the edge of the roadway
- 3: It reduced cyclists to second-class road users, subservient to motorists
- 4: It prevented or prohibited cyclists from obeying the rules of the road
- 5: It claimed that cyclists were incapable of obeying the rules of the road

This motorist-superiority/cyclist-inferiority superstition became the entire American belief concerning bicycle traffic. To the extent that this system's strongest driver is the deliberately produced, greatly exaggerated fear of same-direction motor traffic, this system produces a phobia. That is, the unrealistic fear of same-direction motor traf-

fic makes cyclists prefer to ride dangerously than to ride safely in accordance with the rules of the road, a situation which matches the definition of a phobia. Equally, it makes motorists believe they are entitled to dangerously overtake cyclists.

Both the motoring and the bicycling portions of the population believe this motorist-superiority/cyclist-inferiority superstition. Therefore, both believe that any method of getting cyclists out of the traffic flow must have enormous safety benefits.

As remarked earlier, America never had a bicycle transportation culture. Only a few cities transformed from walking cities through mass transit cities to automotive cities. Most American cities moved directly from cities with minor mass transit to automotive cities. These cities and the lives of their residents are suited to automotive transportation; they are not suited to walking, cycling, or mass transit. The idea that Americans will experience a revulsion against motoring, as did the residents of Amsterdam, is nonsensical.

Some Americans do oppose motoring, arguing for greater densification, mass transit, and bikeways. Most urban planners believe in this, and government supports this with some money. I think that this will not produce much change, except in the adverse direction of making housing less affordable. There is a school of urban studies, of which I discovered that I had long been one, that holds that the modern distributed automotive city is the world's most productive pattern. Densification and mass transit are merely means of transferring community wealth to owners of central land.

So, what is the place of cycling in this American city? The first thing to note is that American motordom has controlled all highway affairs. American cyclists have not been given anything; they have had imposed on them only the conditions that motordom desires for them, including bikeways and restrictions. However, because of the American phobic fear of same-direction motor traffic, most American cyclists desire more of this second-class, subservient treatment. I see no reason to expect this social situation to greatly change.

Despite the general American approval of the idea of bikeways, I think that the American street designs and traffic patterns are not suitable for a Dutch-style system, and I am sure that American motordom will never allow having its status lowered to suit such. What will come will be more of the same, not much better, if at all.

The actions of motordom have forced America to have three conflicting sets of bicycle traffic law. There is the original law giving cyclists the rights and duties of all other drivers of vehicles, the right to obey the rules of the road. Then motordom contradicted many of those rights by restricting cyclists to the far right of the roadway (the FTR laws). Then California cyclists proved the existence of many situations in which the FTR position was much more dangerous than obeying the rules of the road. The legislature agreed, enacting a set of exceptions under which the FTR requirement does not apply. This system spread through the nation with few differences. In summary, cyclists have the right to obey the rules of the road, which right has been largely superseded by a law prohibiting the use of that right, while under some circumstances, sometimes, somewhere, the original right has been returned. Nobody understands this system.

American cyclists exhibit a wide variety of behaviors. These range from obeying the rules of the road, through frightened effort to stay out of traffic, to outright defiance of the rules. This is a reasonable result of motordom's policy of keeping cyclists frightened and ignorant, and inflicting on them rules that cannot work.

Change is coming from the application of scientific and engineering knowledge to the American cycling situation. When starting the discipline of bicycle transportation engineering, I had to consider many aspects of this field: traffic engineering, human factors, psychology, sociology, and the like. Today, this field is growing under the care of many hands. A most illuminating development is Dual Chase Video. Its processed images show a pair of windows, one showing the cyclist and the traffic situation ahead of him and the other the cyclist and the traffic situation behind him, both synchronized together. It demonstrates what the cyclist and traffic do, rather than what has been claimed for them. We have new audio-video presentations of the sociological aspects of motordom's anti-cyclist program, and how to escape from under it. Likewise for how to discover that cycling in traffic does not require courage. One of the leading audio-visual presenters remarked: "Once I learned to cycle properly, all the motorists on the streets around me suddenly became competent." We have lectures to transportation departments demonstrating that designers need to consider three types of bicycle operation:

- 1: Cyclists obeying driver's rules
- 2: Cyclists preferring the edge of the roadway

### 3: Cyclists preferring paths out of traffic

These are not types of cyclists. They are only types of behavior between which any one cyclist may choose for any part of his trip.

After seventy years of motordom's policy and practice of keeping cyclists frightened, ignorant, and incompetent it is now impossible to have cyclists obey any one set of rules. If it were proposed that cyclists obey the rules of the road (which is part of the actual law today), most cyclists would revolt in fear. But requiring cyclists to operate in the cyclist-inferiority manner created by motordom doesn't work either, because it conflicts with real-world traffic engineering facts and principles.

Therefore, American cyclists have to be allowed to operate in any style that does not violate the rules of the road, thereby causing collisions. But for this to work at all, American cyclists must be allowed to obey the rules of the road for drivers of vehicles. All of us who have been working on these improvements, no matter what our differences, all have one common purpose. **The FTR laws that motordom imposed on cyclists for the convenience of motorists must be repealed.**

## 2 The Official Response and Further Discussion

### 2.1 Why the so called 'vehicular cycling' concept is creating a false dichotomy

20 Nov 13

Review of John Forester's 'Two systems for Bicycle Operation: Obeying the Rules of the Road or Cyclist-Inferiority'

Tom Godefrooij, senior policy advisor Dutch Cycling Embassy

20 November 2013

It is not difficult to agree with a number of observations and conclusions of John Forester. Just to mention a few:

- Yes, a bicycle is a vehicle. And that has a bearing on the requirements for infrastructure to be used by cyclists. A cyclist is not a pedestrian and thus doesn't belong on the sidewalk.

- There is some truth in the observation that cycle tracks and cycle lanes sometimes are implemented to free the road of what motorists consider

as 'annoying elements' on the road, that is cyclists. It is obvious that if this is the case, those cycling facilities will not be designed in the best possible way.

- There is a culture of fear beyond reason that is counterproductive. This culture of fear is often reinforced by good intentions of road safety officers but does more harm than good as it stops people from cycling.

- And yes: cycle tracks are, from a safety point of view, not effective if intersections and crossings are not properly designed as well.

The question is: what do we conclude from these observations? To me it seems that John is much more clear about what he doesn't want than about what he wants.

As John is referring to the developments and debates around cycling infrastructure in the 1960s and 1970s, I too will refer to that time. Those days were the start of what I call 'modern cycling policies' in the Netherlands. Between 1950 and 1975 we have seen a sharp decline of cycling in the Netherlands. At first this was perceived as the inevitable effects of progress. Traffic engineers considered cycling as something that eventually would disappear and both policies and infrastructural design reflected that view. But in the 1970s also the drawback of that development manifested itself: increasing road safety problems, erosion of the liveability of cities and the quality of public space, loss of the freedom of movement of those that don't have access to cars, just to mention a few. And more and more people became aware of the importance of cycling as a mode of transport worth to be fostered. In 1976 the government decided to fund two experimental schemes in Tilburg and The Hague: the implementation of so called 'demonstration cycle routes'. These routes mainly consisted out of segregated cycling facilities, some stretches were 'car restrained', and much attention was given to the design of intersections to combine 'right of way' for cyclists with safety. The two projects were extensively evaluated on various aspects: their impact on bicycle use, appreciation by the users, road safety effects, impact on the local economy and the like. To be honest: the impacts on road safety were rather limited. The most striking outcome, though, was that cyclists very much liked the fact that they could cycle 'undisturbed'. Their perception of safety improved considerably. And the experimental routes attracted many cyclists from parallel routes.

If our society, our cities, have the ambition to

take advantage of all the benefits that (increased) bicycle use can yield, then the challenge is to make cycling attractive. Road safety is not the ultimate goal of cycling policies nor the only criterion for the success of interventions. Road safety and road safety perceptions are an important pre-condition for cycling promotion. Nothing more, and certainly nothing less! A culture of fear, permanently stressing and exaggerating the dangers of the road for cyclists won't help. But people won't cycle just because it is safe either! (As we don't chose a restaurant for their food safety, but rather for the good taste of the meal!) Cycling has to be a practical, efficient, convenient and enjoyable mode of transport.

Let's face it: a road system, cities, designed primarily for cars don't offer an attractive environment for cycling. Bicycles are vehicles, but the differences with motor vehicles are substantial. And car environments can be pretty intimidating to cyclists. Indian cities (still having a substantial share of cycling) show how problematic the co-existence of motor traffic and cycling is when road design doesn't take into consideration the specific needs of cyclists. The mere recommendation to follow or 'obey' the rules of the road is simply not sufficient. Even if we believe that cyclists training potentially could turn people into confident cyclists that are capable to deal with a car dominated road environment, this road environment will still be experienced as being hostile! Let me quote Steven Fleming in his book 'Cycle space': "As a manly pursuit, effective or 'vehicular' cycling – just like John Forester taught me to do with his book – was once, for me, a great source of pride. I asserted my right to the road. I dazzled kid in the back seats of their parents' cars. They would wave at the cyclist keeping pace with the traffic. Then I grew up.... Sure, when I have no better option, I will risk my life among trucks and cars, but given the choice I would rather ride on a bike path flanking a river. It was the requirement to commute on rainy nights that taught me to seek alternative routes. I found at night I was safer on quiet back streets. (...)"

In all it is not that strange that many planners and cyclists alike have concluded that high volumes of (speeding) motor traffic and cycling are incompatible. The fact that this conclusion in the past has resulted into banning cyclists from the road rather than to provide them better conditions is no reason to deny this incompatibility. The question is: how do we solve the problem. I refuse to accept that it is either 'obeying the rules of the

road' or 'cyclists-inferiority'. That is a false dichotomy.

Basically there are two ways to solve the incompatibility challenge:

1. Segregation: incompatible modes get their own space (territory) on the road.

2. Integration: minimising the incompatibility by adapting drivers behaviour to the circumstances; i.e. minimising differences in speed between cars and cyclists.

Both approaches don't exclude each other, rather they are complementary strategies:

When high volumes of speeding motor traffic are unavoidable, segregation is the obvious choice. In cases where segregation is undesirable or impossible traffic calming is required. Or: segregation when needed, traffic calming where possible. Both types of intervention have their own domain of application according to context and road function.

John Forester definitely has a point that segregation in itself is not enough to accommodate an efficient use of the bicycle as a fully fledged mode of transport. Even more so if only road sections get their segregated facilities and intersections remain untouched. It is not difficult to find many examples of badly designed dedicated cycling infrastructure that seems to have no other function than to provide an alibi to road authorities to clear the way for ever increasing volumes of motor traffic. That is why in the Netherlands we have formulated additional quality requirements to cycling infrastructure in general, that is the requirements that allow cyclists to effectively use the road network for any trip purpose. We call them the five main requirements:

- Coherence: cycling infrastructure should provide good connectivity between all origins and destinations in the area;
- Directness: road authorities should minimise detours and delays for cyclists;
- Safety: road authorities should minimise the number of conflicts between motor traffic and cycle traffic and minimise the outcome of remaining conflicts (forgiving road design);
- Comfort: cycling infrastructure should allow for comfortable manoeuvring and minimise the use of (precious) human energy;
- Attractiveness: as slower modes of movement are more sensitive for the quality of urban space, cycle routes should preferably use varied small scale environments.

We are convinced that this wider approach

(beyond safety-only considerations) is fully recognising the 'vehicular' character of cycling. In this approach we don't look down on those who don't dare to cycle in the midst of heavy motor traffic nor on the parents that won't allow their children the valuable freedom of movement because of their perception of insufficient road safety. We prefer to counter the culture of fear around cycling by the creation of a road environment that doesn't require permanent warnings against the dangers of the road, simply because we have effectively dealt with those dangers. We think that this is better than teaching and learning how to deal with them. Cycling is too important as a mode of transport to leave it only to the daring helmeted cycle warriors in conspicuous jackets. Cycling should not be elitist, but for all.

## 2.2 Forester's Response to Godefrooij's Reply

28 Nov 13

Tom Godefrooij remarks: "The question is: what do we conclude from these observations? To me it seems that John is much more clear about what he doesn't want than about what he wants."

This shows that TG has missed the point of my paper. My paper objects to the use of laws to prohibit cyclists from obeying the rules of the road for drivers of vehicles, which laws may be assisted by bikeways. Apparently the idea that cyclists are better when treated as drivers of vehicles than when reduced to a subservient status is so foreign to TG that he has failed to notice it (or has refused to acknowledge it). He shouldn't have failed in this way, because the paper's subject is clearly stated in two specific paragraphs, one describing the American situation and the final paragraph containing the recommendations.

The descriptive paragraph is:

"Starting in the early 1920s, American motor-dom conducted a campaign advocating motor travel as being the prime purpose of streets and highways. This had the following results with respect to bicycle traffic.

- 1: It restricted cyclists to the edge of the roadway, or off it where paths existed
- 2: It threatened cyclists with death should they leave the edge of the roadway
- 3: It reduced cyclists to second-class road users, subservient to motorists
- 4: It prevented or prohibited cyclists from obeying the rules of the road
- 5: It claimed that cyclists were incapable of obey-



ing the rules of the road”

The paper’s final paragraph is:

“Therefore, American cyclists have to be allowed to operate in any style that does not violate the rules of the road, thereby causing collisions. But for this to work at all, American cyclists must be allowed to obey the rules of the road for drivers of vehicles. All of us who have been working on these improvements, no matter what our differences, all have one common purpose. **The FTR laws that motordom imposed on cyclists for the convenience of motorists must be repealed.**” (emphasis in the original)

### 2.3 Tom Godefrooij

2 Dec 13

Dear John,

Arend copied me his answer to you and thus I read your thoughts about my speech. I feel a kind of obliged to react because I can understand you feel dissatisfied with the superficial debate that followed our presentations at the conference. I also want to correct some of your assumptions: First of all I certainly did read your paper. I appreciated your attempt to give credits to the Dutch system as the outcome of a different urban setting. And I tried to bridge between some of your observations and analyses of the shortcomings of American cycling policies and what you call 'the Dutch system'. Therefore I started off with mentioning the points we can agree upon. And I used the expression 'false dichotomy' because I feel that in the true sense of the word 'vehicular' the Dutch system is as much serving 'vehicular cycling' as your 'follow the rules of the road' approach. So I used the 'false dichotomy' wording rather to try to get rid of misunderstandings than as an attack. Obviously you felt it different. I am sorry for that.

What I tried to point out, but what obviously didn't come across is that if we start to be dissatisfied with the way the motoring society tried to marginalize cycling by condemning them to use badly designed facilities or even worse: the sidewalk, we have gone in different directions to counter that marginalizing. (By the way, somewhere in your paper you refer to bikelanes in Dutch and German style as these are similar. The German designs are certainly of a different standard compared to Dutch cycle facilities.) Where you are saying: "don't marginalize us, we can handle the system as it is", we are saying: "don't mar-

ginalize us and provide us with infrastructure that is meeting our needs as fully fledged road users acknowledging the differences between cars and bicycles as well." I don't think these approaches fully exclude each other. But I think that your fight against segregated cycling facilities has proven to be counterproductive in creating more cycling friendly cities in America.

Where we certainly have different views is your claim that 'following the rules of the road' will work for everyone. You claim that you can teach everyone to do this properly, and I believe that in principle you can. However, my observation is that in reality this approach keeps many people from cycling even if they, in principle, would be willing to consider to do so. And I think that this reality is a missed opportunity given all the benefits cycling can bring to society. (Yes, I am an idealist!) Therefore we in Europe, in the Netherlands, concentrate our efforts at creating an environment that is perceived as sufficiently safe for everyone and at the same time providing an efficient and convenient cycling system to get from any point A to any point B within cycling distance.

You asked me whether my recipe would work in American cities and I hope you can forgive me that I cannot answer such a question in two sentences. I am aware that American cities are different from European cities, and that urban sprawl is a serious impediment to develop an efficient cycling system everywhere. Thereupon each city (even here in the Netherlands) will need its own analysis of the problems and opportunities. However, if you refer to 30 years of bikeway programs as sufficient indication that this cannot work, then my answer is: you must be kidding. The American bikeway design has never tried to meet the requirements that would make them part of an efficient cycling transport system. And the main reason is, and you know this better than I do, that these bikeways only have been implemented where and as long as they didn't touch the existing dominating car based road system. This is indeed a recipe for marginalization.

When I said you have to start somewhere, I meant that cities can start to implement coherent systems of cycling connections in those parts of the city that are most suitable, often the Downtown area. Cycling connections need not necessarily to be segregated cycle track or cycle lanes but can also be low traffic streets. But this will be different in every city and needs to be looked at at that individual city level. And I am very much aware of the fact that making American cities

more cycling friendly will take time. One cannot undo in a few years what has been fostered for a century: the car based city. But I am convinced that the cycling conditions in American cities can be improved and that some of the Dutch principles can be applied to do this. We also understand that such Dutch principles will have to be modified and adapted to the American context. This will require a lot of creativity, engineering skills based on real understanding of cyclists' needs, political will and endurance. There is no magical simple recipe, but in my opinion the efforts needed are worthwhile.

Friendly regards,  
Tom

## 2.4 Tom Godefrooij

3 Dec 13

Dear John,

Thanks for your reply. You make me realize that I didn't elaborate on the last paragraph of your paper: "Therefore, American cyclists have to be allowed to operate in any style that does not violate the rules of the road, thereby causing collisions." For an individual cyclist this may be the essence of your paper, but I concentrated on the strategy that is needed to fully utilize the potential of cycling as a mode of transport. I remember that, within the ECF, there were debates about whether the use of dedicated infrastructure should be compulsory to be used by cyclists. At that time I suggested to turn around the argument: cycling facilities should be so well designed that compulsory use is no longer an issue. In other words: if cycling facilities have the quality that cyclists chose to use them, then we don't have to discuss the issue of whether they are obliged to do so or not. And I guess that is the big difference between your vision and mine: I do believe in the possibility of dedicated cycling infrastructure meeting the genuine needs of most if not all cyclists and I am fighting against substandard designs. You obviously don't share my belief. Maybe we can agree to disagree on this point.

Best regards,  
Tom

## 2.5 John Forester

2 Dec 13

Dear Tom,

I am happy to read your letter because there's much in it that explains the confusion between our two expressions. I now understand

that your false dichotomy about vehicular cycling refers to the common, in both nations, use of bicycles for transportation. But as the inventor of the phrase "vehicular cycling" I think that my definition of it should take priority over yours. My definition, repeated so many times, (even you repeat it) is that vehicular cycling is cycling according to the rules of the road for drivers of vehicles. In that respect it is a legal term which applies whether the bicycle is being used for recreation or for transportation. In that respect, cyclist-inferiority cycling is cycling in accordance with the laws that American motordom enacted to try to prohibit cyclists from obeying the rules for drivers, and that's what we get with American bikeways, laws, and society. While there are some similarities in shape between American bikeways and Dutch bikeways, it appears that the Dutch people do not feel as though the shape of their bikeways renders them subservient to motorists; although I have read a few complaints from Dutch cyclists on this point.

In my paper I pointed out that the two pseudo-scientific arguments on which motordom based its cyclist-inferiority program were that same-direction motor traffic is by far the greatest danger to cyclists and that cyclists were not capable of obeying the rules of the road. And I stated that these were both thoroughly disproved in the early years of the controversy. With those disproved, the only basis for the American program of cyclist-inferiority was the selfish desires of motordom. You understood my demonstration that all reasonable road users can learn to obey the rules for drivers to mean that I advocated such a program for all users. While I had such a hope in the 1970s, I gave it up in the 1980s as being politically and socially impossible. As I specifically wrote in my paper, American traffic law and society have so confused the legal operation of cyclists that nobody knows what the law requires and American cyclists operate in a variety of ways. So note my final paragraph: "Therefore, American cyclists have to be allowed to operate in any style that does not violate the rules of the road, thereby causing collisions. But for this to work at all, American cyclists must be allowed to obey the rules of the road for drivers of vehicles. All of us who have been working on these improvements, no matter what our differences, all have one common purpose. **The FTR laws that motordom imposed on cyclists for the convenience of motorists must be repealed.**" (emphasis in the original)

You assert: "I think that your fight against

segregated cycling facilities has proven to be counterproductive in creating more cycling friendly cities in America." Considering American laws and society, making a city more "cycling friendly" means carrying out the wishes of the superstitiously ignorant, regarding bicycle transportation, American public. And that, of course, means greater repression of those cyclists who choose to operate properly, safely, and efficiently in accordance with the rules of the road for drivers. Naturally, I opposed that program, and I am proud to have led that opposition.

It appears that you argue that if America adopted the Dutch system bicycle transportation would become a major part of personal urban transportation. That's predicting the future, which is a notoriously inaccurate process. However, I disagree on both of your assumptions. I think it most unlikely that America will adopt the Dutch system. I also think that, even if that were to occur, bicycle transportation would not become a major part of personal urban transportation. American cities are set up for motoring, and motoring is too easy and accessible. If, indeed, some world-wide situation produced major changes in American society, then that society would react and adapt in accordance with that situation, rather than to the hopes of bicycle advocates.

My statement that America started its bike-way program thirty years ago was not joke. America has what its society could decide to produce. To argue what some other society, or some future American society, might produce is a pointless exercise in counterfactual fiction.

You assert: "We also understand that such Dutch principles will have to be modified and adapted to the American context. This will require a lot of creativity, engineering skills based on real understanding of cyclists' needs, political will en endurance. There is no magical simple recipe, but in my opinion the efforts needed are worthwhile." Yes, indeed. We have seen the latest bunch of errors, the NACTO designs. But my point is that while these experiments are going on those cyclists who are operating in the safest, most lawful, and most efficient way should not have their operations jeopardized by the laws that attempt (if only by creating confusion) to prohibit operation in accordance with the rules of the road for drivers.

On the basis of considerable reading from both sides of the ocean, I have concluded that Americans have better scientific understanding of their own system than the Dutch have of theirs, and that Americans have a better understanding

of the Dutch system than the Dutch have of the American system.

I hope that such reasonable discussions can be continued,

With best regards,

John Forester

## 2.6 John Forester

3 Dec 13

Dear Tom,

You have suggested that we should agree to disagree about one point, "the possibility of dedicated cycling infrastructure meeting the genuine needs of most if not all cyclists." I'm sorry, but I find much else in your latest letter to disagree about, and, probably, about many other aspects of bicycle transportation. Personal transportation moves people from place to place, and, in American terms, the criteria for how well it does this are the safety and convenience of the traveling public. Convenience is a loose term, but, from observed behavior, the most important factor appears to be the time spent on the trip. Bikeways, both Dutch and American, are ostensibly designed to prevent car-bike collisions caused by same-direction motor traffic. For American conditions, the statistics of car-bike collisions provide no support for the hypothesis that bikeways will reduce car-bike collisions, and there has been no supporting empirical evidence. In short, bikeways increase the hazards and difficulties of traffic operation while failing to better meet the genuine needs of cyclists. Prof Peter G. Furth (Chapter 6 of *City Cycling*, eds Pucher and Buehler, MIT Press 2012) gets around this difficulty by postulating that there is a "fundamental human need" for separation from same-direction motor traffic (Conclusions section). Likewise, the lead editor of that book had to admit, in public meeting, that he paid no attention to engineering but recommended what was popular. To put things bluntly, in the American context one's view of bikeways depends on whether or not one has allowed American motordom's propaganda to frighten one into the cyclist-inferiority phobia. Those who suffer from the phobia like bikeways. Those who recognize the superiority of obeying the rules of the road for drivers use bikeways only when that use is consistent with those rules. Since these vehicular cyclists operate most safely (car-bike collision rates only about 25% of those of the general bicy-

cling public) and most efficiently (the road system generally provides the best routes), their operation should be encouraged rather than, as at present, discouraged by laws that attempt to prohibit it.

That's the outline of our difference about "genuine needs".

Now consider your aim "to fully utilize the potential of cycling as a mode of transport." I regard that phrase as being a nastily messy expression smacking of ideological imposition of social engineering concepts. In a milder tone, I ask about the society in which this goal is to be promoted. In America, the bicycle advocates advocate anti-motoring concepts such as raising the price of fuel, limiting parking spaces, limiting road capacity, establishing congestion taxes, and similar, quite frequently on the pretense that these are "good for bicycling". I happen to be one of those in the urban design field who recognize that decentralized automotive cities are more economically productive than are centralized pre-automotive cities. In short, it is better to live in a modern decentralized city than to live in a centralized city, and the difference between the two, nowadays, is the availability of personal automotive transport and the absence of urban growth boundaries. The decentralized city does increase the trip length, which reduces the proportion of the trips suitable for cycling, but it also increases the relative advantage of vehicular cycling over cyclist-inferiority cycling on bikeways. My advice to cyclists is to recognize and largely accept the city and society in which they live and operate, to work out the best way to cycle under the conditions then existing, and to choose to cycle for those trips for which cycling provides the most benefits to the cyclist. Of course, in America, few people do either of the last two actions. It is most appropriate that people be taught the advantages of vehicular cycling and the extent to which this increases the proportion of trips for which cycling is the best choice. Also, in America, the only current organizations undertaking these two programs are operated by current cyclists without the support of government. Well, that's the society and its laws that we have.

Best regards,  
John

## 2.7 Tom Godefrooij

4 Dec 13

Dear John,

Reading your letter I can only agree that we disagree on many more points than only the usefulness of well designed segregated cycling facilities in their domain of application. You refer to a phrase of Peter Furth about segregation being "fundamental human need". That is 'heavy wording' indeed, and I would phrase it differently. As I pointed out in my talk in Helmond there is more to infrastructural design and road behaviour than only safety concerns. What Peter Furth is referring to is maybe not a "fundamental need" but certainly an "evidence based preference" of the majority of cyclists and those who would like to cycle if they would dare to. Now I can go along with you that the dangers of road for cyclists are often exaggerated, and that fostering this "culture of fear" does more harm than good. But apart from that cycling in the midst of busy motor traffic is also very unpleasant. I am a confident cyclist and will not easily be terrified by heavy traffic, but if I have the choice I will avoid those situations simply because it is no fun to ride those roads. What segregated facilities (where appropriate!) can do for cycling is making cycling more relaxed and enjoyable. And that is exactly what many cyclists want, whether you like it or not. Don't tell them that this is ignorant, or that they accept to be inferior. That is an offence, sorry to say. The only reasonable debate is not whether those facilities are desirable, but whether their use would be compulsory also for the minority of cyclists who don't want to use them.

And yes, we disagree to about urban design more generally. To characterise our difference of opinion: you support the "cities for cars" paradigm whereas I am in favour of the "cities for people" approach. This is pretty fundamental indeed. In the city for cars approach public space is nothing more than space for traffic. In the cities for people approach we want public space also to serve and accommodate other types of human behaviour. Upon that - and I suspect you will disagree again - I am convinced that the US car dependent society is not sustainable. US cities are a disaster for those who for what ever reason have no car available, and they are beyond an agreeable human scale. Like there is more to traffic than only safety, there is more to life than traditional economics. I think urban sprawl is a disaster, not because it is bad for cycling, but because they make unattractive cities. Investing in cycling friendly cities is investing in more liveable and also more efficient cities. And yes, part of that would be to restrict the dominance of cars in (parts of) the cities. In a way

it is ironical that on the one hand you stand up against American motordom's propaganda that suggests the inferiority of cycling, and that on the other hand you appear to be a dedicated apostle of the American car based city.

Yes we disagree! But it is good to spell out the arguments. Thanks for that!

Friendly regards,  
Tom

## 2.8 John Forester

4 Dec 13  
Dear Tom,

I find your first paragraph, about the desirability of bikeways, to be sadly confused. While we agree that exaggeration of the dangers of traffic cycling is to be deplored, I think that we have rather different views about that danger. You are also trying to argue that the provision of bikeways is merely a matter of increasing the fun (your own word) of cycling, "making cycling more relaxed and enjoyable", yet you are also trying to argue that bikeways make cycling safer by writing "would like to cycle if they would dare to". In addition, you assert that it is offensive for me to refer to those American cyclists who favor bikeways as ignorant and feeling inferior. I disagree on every one of these points.

You have not described the fear of traffic to which you have referred. I have done so repeatedly, and I repeat. The traffic fear felt by most American cyclists is the fear of same-direction motor traffic which was created by motordom's program of frightening cyclists off the road. That this is false, exaggerated is the word I like, was long ago shown by the car-bike collision statistics showing that 95% of car-bike collisions are caused by turning and crossing movements, only 5% (and that's generous) by same-direction motor traffic. If bikeways are designed according to some safety motive (which may or may not be correct), that motive must be to protect cyclists against same-direction motor traffic. Therefore, it is accurate to describe those who believe motordom's propaganda as ignorant and, from all the evidence, also feeling subservient to cars. I prefer accuracy to being politically correct, if that's your problem. Whether the situation is similar in The Netherlands, I have no direct evidence, but the

balance of the indirect evidence I have read indicates considerable similarity.

That leaves only the argument that bikeways are justified because they make typical cyclists or would-be cyclists feel better. When considering American conditions, I think it unreasonable to divert some of our already overloaded road transport facilities simply for the purpose of making the very small proportion of cyclists feel better. The force of this argument is strengthened because it is basically a lie, enticing people without preparation into an activity whose safety requires the driving skills that almost all Americans are expected to be able to learn.

Your second paragraph, about urban patterns, also has its mistakes. You assert that I support "cities for cars" while you support "cities for people". Not only did I not write that, but I explicitly denied it: "In short, it is better to live in a modern decentralized city than to live in a centralized city". That statement refers to the quality of life experienced by those in the suburbs, without any reference to pleasing their cars. You continue by writing: "I think urban sprawl is a disaster, not because it is bad for cycling, but because they make unattractive cities." Of course, that is a matter of taste, but the evidence shows that whenever urban people have the means and opportunity to move to the suburbs a majority of them do so.

You suggest that "it is ironical that on the one hand you stand up against American motordom's propaganda that suggests the inferiority of cycling, and that on the other hand you appear to be a dedicated apostle of the American car based city." No, I don't consider this irony. America has a pretty good road system, and treats its motorists pretty well, and these may well be connected to the growth of suburbia. Since the roads are public roads for the use of the traveling public, vehicular cyclists demand that it is right that they be allowed the benefits of using the public roads with the same rights and duties as have the other drivers of vehicles.

Haven't we so many things to think about in this enjoyable discussion?

Still, best regards,

John

## 2.9 Tom Godefrooij

5 Dec 13

Dear John,

Reading your response I get the impression that you still don't get my main argument. I will give it another try:

You keep referring to the only 5% of car bicycle collisions that happen between same direction traffic. I don't dispute those figures, they seem very likely to me. Of course this doesn't necessarily imply that those 5% can't be still a substantial number, but that is not the point. And I repeat it: the proper design of intersections is, with regard to cyclists safety, more important than the implementation of cycle tracks or cycle lanes. (Many of the 95% different direction collisions are at intersections, so from a safety point of view this priority is obvious.) But I keep insisting that there is more to this debate than crash records alone.

In the Netherlands we are making a deliberate distinction between 'objective' safety and 'subjective', 'perceived' or 'experienced' safety. (I am not sure which adjective is most accurate in English.) Now subjective perceptions or experiences are not always rational. To a certain level we can try to correct false perceptions, but to a large extent people's behaviour is driven by subjective interpretations of reality. Now you are saying that subjective interpretations of reality imply ignorance that we should not bother about, except maybe by educational efforts to 'restore' the objective truth. Although I don't reject such educational efforts, I think that we should also accept that this is the way human minds work. Also yours and mine, I am afraid. So in the Netherlands it is commonly accepted that we have to improve both the objective AND the subjective safety and that there should be a balance between the two. My phrase "... those who would like to cycle if they would dare to..." has much to do with the subjective experience of cycling. And many research shows that segregated facilities enhance the subjective safety. That is, as far as I am concerned, a much better way out of the "culture of fear" than simply telling people that they are wrong to be afraid. What certainly doesn't help is helmet propaganda with claims that cycling is inherently dangerous and to require people to armour themselves with helmets and flashy jackets. This is the motordom propaganda that I am fighting against as it is only enhancing the subjective feeling of insecurity.

And then there are the other aspects of the cycling experience. Even if I know that I am reasonably safe on a heavy trafficed road, I don't like to be overtaken at close distance by very fast riding cars. The noise and the air displacement are an attack at my nerves. That is not ignorant, but

the reality of my experience. That is why I prefer quieter roads or at least more distance between me and the cars. And I see much evidence that I am not alone in this preference. If you have other preferences, that's ok with me, but I can't see what is wrong with accommodating the wish of a large proportion of cyclists and would be cyclists by building special infrastructure where appropriate. Infrastructure that provides them with a coherent network of direct and comfortable, and yes also safe connections where they can cycle undisturbed by high volumes of speeding cars. What is wrong with wishing a pleasant ride? I don't accept that this wish is making me ignorant or inferior.

Maybe I shouldn't have suggested that you propagate "cities for cars", but for me it is the implication the preference of "a modern decentralised city". You didn't contemplate on how people without cars can live in such a city or even in suburbia. We probably could have long debates about suburbia and the wish of peopole to live there. Choices of people are of course dependent on the options they have. If the choice is to live in an urban environment with an overload of traffic, air pollution and noise or a quiet suburban environment, then the choice for suburbia is quite understandable. The irony is that this suburbia is the kind of urban development goes at the cost of the quality of life in the central parts of the city. Thus it is creating a vicious circle that destroys the essential of a good city: concentration of opportunities. But this should maybe the subject for another debate at some other time.

Best regards,  
Tom

## 2.10 John Forester

5 Dec 13  
Dear Tom,

It is not that I have failed to understand your main argument; I have understood it since I first read it many years ago in the words of American bicycle advocates (who may have acquired it from The Netherlands). I don't want American cyclists to be saddled with more of what American motordom wants when that power is strengthened by false arguments from Europe.

To start with, there is no such thing as 'subjective safety' or any other pair of weasel words

that bicycle advocates care to conjure up. In our bicycling discussion, the emotion to which you refer is the feeling of comfort in the minds of people who have a completely inverted belief concerning the hazards they face. I use the word comfort in all these discussions because it has nothing at all to do with safety, and promoting the connotation that it has anything to do with safety is a deliberate lie. You advise us to construct segregated facilities because that is "a much better way out of the 'culture of fear' than simply telling people that they are wrong to be afraid." That is, because of the fear created by American motordom to achieve precisely this result, to carry out motordom's desires, no matter what disadvantages and dangers are created for both the cyclists who obey motordom and those who are much better informed about traffic operations.

You write that you oppose propaganda about helmets and flashy jackets "as it is only enhancing the subjective feeling of insecurity." Comparing the problems created by these minor fears with those created by the cyclist-inferiority phobia, which is the subject of the previous paragraph, is plain ludicrous. The latter, as you admit and even recommend, has had an enormous social effect, while these others really have no discernible social effect. Your other error in this same sentence is considering the helmet and flashy jacket propaganda to be produced by motordom. There is absolutely no evidence that the motoring organizations, which collectively are named motordom, have ever promoted either cycling helmets or flashy jackets. The most that might be said is that these are promoted by persons afflicted with the cyclist-inferiority phobia.

Your basic argument appears to be that society (yours, mine, whose?) should devote a considerable portion of its transportation resources to making cyclists feel comfortable. For American society and conditions I disagree. There are too few cyclists, our urban and social patterns don't favor cycling, and I don't predict that making cyclists feel comfortable will raise the bicycle mode share to a significant proportion of urban personal travel. However, many of us vehicular cyclists have concluded that we cannot stop the bikeways juggernaut, so that we will get a system that motordom wants and caters to the cyclist-inferiority phobia, but without significant real value for cyclists. Therefore, we ought, in my view, concentrate on getting out from under the juggernaut by getting repeal of the laws that serve the cyclist-inferiority phobia by limiting us to the edge of the

roadway and to bikeways. That way, cyclists will have the freedom to choose, at any time and place, which system to obey, cyclist inferiority or the rules for drivers of vehicles.

Well, these are my views on these particular subjects,

Sent with my regards,

John

## 2.11 Tom Godefrooij

6 Dec13

Dear all,

With regard to Arend's and Andy's proposal: in my view both John and I did deliver an essay already, that is the papers we wrote for ICSC2013. The follow up e-mail debate we can readers help to better understand the agreements and disagreements between John and me and can help the reader to decide his/her position in this debate. I guess that both John and I have been perfectly clear!

Honestly after all the time I have spent in making my views clear, I don't see an added value in writing yet another essay. John is obviously disputing my authority to say anything about cycling outside the Netherlands. That is his good right and it is clear that I disagree with that. But I have no problem with John's final conclusion that cyclists should have the freedom of choice about the way they want to use the road system. This freedom of choice for the cyclist can be an incentive to traffic planners to design cycling facilities to the highest quality levels making them attractive to all (even vehicular) cyclists. John will of course reply that the latter will never happen.

The essence of my disagreement with John is that I consider his crusade against even considering the implementation of dedicated cycling infrastructure as counterproductive at all levels. I guess that comes out clearly out of my former contributions to this debate.

Best regards,

Tom

## 2.12 John Forester

6 Dec 13

To the readers of this discussion,

Tom has raised several new points of dis-

agreement.

The first is just personal. I have not claimed to limit Tom's competency to discuss cycling to only the Netherlands. I presented American history and problems, and it became clear, as I stated, that Tom did not have the competency to discuss the American situation and its problems. I think, though I did not feel the need to explicitly write such an obvious thought, that Tom's competency depends on how similar is the situation under discussion to the Dutch situation, and to Tom's study of that situation.

The second might indeed be of greater interest and significance. Tom writes: "The essence of my disagreement with John is that I consider his crusade against even considering the implementation of dedicated cycling infrastructure as counterproductive at all levels." My paper makes clear that I opposed motordom's imposition upon cyclists of laws and bikeways designed contrary to then-being-discovered traffic-engineering knowledge, reducing cyclists to second-class roadway users, purely for the convenience of motorists. That ought to speak for itself, but obviously it doesn't. I surmise that this is because of the widespread superstition that bikeways are to make cycling safe, or some similar superstition.

The laws and bikeways designed by motordom are what America has had from the 1970s to today. The additional NACTO bikeway designs, appearing in the last few years, are based even more obviously on the concept that the cyclist is incapable of obeying the rules of the road. So, yes, I do consider to be counterproductive "the implementation of dedicated cycling infrastructure" that is based on the concept that the cyclist is incapable of obeying the rules of the road. It is counterproductive to increasing the amount of safe and effective bicycle transportation. Tom asserts, and disagrees with me, that I have a crusade against all "dedicated cycling infrastructure" wherever it might be.

Well, consider the Dutch bikeway system as being within Tom's expert knowledge. From what I have learned, and I write subject to correction by those in possession of facts, the Dutch bikeway system, wherever it exists, is based on explicitly excluding cyclists from the right of obeying the rules of the road for drivers. Furthermore, despite looking for it, I have read nothing to indicate that the Dutch had knowledge, such as we had in America, of the types, causes, and relative frequencies of car-bike collision. That is, they had no information pertaining to the rational design of a

program to reduce car-bike collisions. And, again so far as I know, they failed to discern and distinguish the different ways to cycle in traffic. In short, at the start of its bikeway era, the Dutch government was no better informed than was America's motordom, with its self-imposed and self-maintained blindness, about how to reduce car-bike collisions. The similarity is so obvious that it would take quite significantly powerful facts to deny that similar effects result. However, as I have repeatedly written, for reasons of history, urban shape, and social and economic patterns, the Dutch appear to like the system they have produced, even though it is set up for slow cycling (and slow motoring, for that matter).

Tom could have argued, had he studied the American situation as presented on the internet, that the cyclist-inferiority on bikeways system is the official American system. It was imposed by motordom and government, as I explicitly described; peculiarly enough it is also advocated by the anti-motorists opposed to motordom, and it is officially promoted, and subsidized, by American governments, lately under the pretense of patriotism. As I wrote earlier, in the 1970s I hoped that America would adopt the vehicular cycling policy that one of its laws required. (American traffic laws regarding cycling are so confused that nobody knows what they require, as I wrote in my original paper.) But on observing the cyclist-inferiority on bikeways juggernaut I gave up that hope. That is why many of us vehicular cyclists have concluded that the most that we can hope for is to correct the laws so that cyclists, when and where they choose to do so, have the explicit right to obey the rules of the road for drivers of vehicles. That is the reason for the final paragraph of my original paper, to which I have referred before.

Do the new facets of this discussion interest anyone?

Best regards,

John

## 3 Reflections

### 3.1 John Forester

In presenting why some American cyclists prefer cycling according to the rules of the road, I compared that to the cyclist-inferiority cycling being more strongly imposed by American motor-



dom, purely for the convenience of motorists. I pointed out that the supposedly scientific arguments for cyclist-inferiority cycling (horrendous danger of same-direction motor traffic, cyclist incapability) were fraudulent and that the cyclist-inferiority bikeways were most unlikely to significantly reduce the car-bike collision rate. I also wrote that the cyclist-inferiority system was so popular that vehicular cyclists were reduced to trying to maintain their right to obey the rules of the road.

Rather than consider my presentation, the Dutch government proclaimed that my two systems were not the only ones and that its system was a third way and much better. The Dutch presentation was so full of errors, and generated more errors in discussion, that the discussion became largely devoted to correcting them.

In my original presentation I wrote that I intended to avoid criticizing the Dutch system. Perhaps I should have responded to the Dutch presentation by tackling the issue: that is, to what extent is the Dutch system a cyclist-inferiority system? Its arrangements are implicitly based on fear of same-direction motor traffic, its advocates say that it is based on the incapability of cyclists to maneuver in traffic, and it prohibits cyclists from obeying the rules of the road for motorists. But does its popularity mean that it is not a cyclist-inferiority system? Well, the American cyclist-inferiority system, designed and imposed by motordom for the convenience of motorists, is also very popular, both among the motorists it benefits and among the bicycle advocates who argue that it makes cycling safe. I think that the difference is that the Dutch, having always had a large cycling mode share operating in cities suited to cycling, and armed by the revulsion against the extremely rapid adoption of mass motoring, were able to implement measures to counteract the traffic problems created by separation from same-direction motor traffic. These problems arise with turning and crossing traffic movements, and the measures to counteract these problems often require space and delay both cyclists and motorists, but these delays seem acceptable to the Dutch.

There is also the difference in training, both of motorists and of cyclists. From all reports that I have read, the Dutch provide intensive training for both cyclists and motorists, with a stiff examination for motorists. Of course, it must be assumed that this training is specifically in the use of the Dutch system. American motorist training is much

less stringent. American cyclist training was limited to admonitions to stay out of the way of cars, signal your turns, and stop at stop signs, which, being presented from the motorist's viewpoint, was either useless or counterproductive.

The safety and popularity arguments are grotesquely intertwined. The American evidence is that bikeways cannot be expected to significantly reduce car-bike collisions, but might slightly increase them, and have not, in practice, reduced car-bike collisions. (The studies that make that claim have been done by professional bicycle advocates and are so full of errors that no useful results are possible.) The Dutch evidence, as stated by its spokesman in this discussion, is that its experimental bikeways had insignificant safety effect. However, both the Dutch government and American bicycle advocates claim, accurately, that being protected from same-direction motor traffic makes most cyclists feel quite safe, ignoring the fact that the hazards of crossing and turning movements have always been the cause of the great majority of car-bike collisions and are not reduced, sometimes increased, by the means of providing protection from same-direction motor traffic.

As I see it, there are two remaining issues. One is whether those American cyclists who so choose should be allowed to continue operating according to the rules of the road for drivers, and the law that so prescribes. I have always so maintained, and nothing that has shown up in this discussion opposes that. The other is the extent to which further implementation of the American cyclist-inferiority system will produce a transportationally significant switch from motor to bicycle transport. My prediction is that it will not do so; our cities are set up for motoring, which is easily available. Other conditions may force such a change, but not the cyclist-inferiority bikeway system.

### 3.2 Tom Godefrooij

I was asked to reflect on John Forester's paper "Two Systems for Bicycle Operation: Obeying the Rules of the Road or Cyclist-Inferiority; with Some Discussion of the Dutch System". In my reflection I started with my perception of what I thought we could agree upon: the vehicular character of cycling (although John is giving a very specific interpretation of the term 'vehicular'), the observation that sometimes dedicated cycling facilities are implemented rather to free the road of the 'annoying' presence of cyclists than to create

the best possible cycling conditions, the counter-productiveness of the culture of fear that is being created around cycling by disproportionately stressing its dangers, and last but not least the observation that proper design of intersections is essential to improve cyclists' safety.

Our disagreement is in how we deal with these observations. For John the implementation of dedicated cycling infrastructure is in all cases an expression of the acceptance of cyclists' inferiority. We, in the Netherlands, say: not necessarily so! It depends on how these cycling facilities are being designed. And we are open for the reality that the majority of cyclists appear to appreciate the opportunity of 'undisturbed cycling' offered by segregated facilities as it contributes to the enjoyability of cycling. For this reason and based on the characteristics of cycling and the needs of cyclists we have defined five main requirements for cycling infrastructure. Cycling infrastructure should be coherent, direct, safe, comfortable and attractive in order to take full advantage of the efficiency of cycling as a mode of transport. So instead of simply rejecting the idea of segregation altogether, the Dutch position is to formulate the conditions by which their potential disadvantages are avoided and upon that their positive contribution to a positive cycling experience can be maximised. By doing so we promote the use of bicycles as a fully fledged mode of transport by as many as possible people. In fact the voluntary use of cycling facilities by (the vast majority of) cyclists is the best indicator of their sufficient quality! If these quality requirements are being met discussions about the 'rules of the road' become irrelevant.

In the e-mail discussion that followed it appeared that our disagreements were larger than I had expected. While I tried to make clear that a 'cycling-friendly road environment' goes beyond merely road safety considerations and will address also the overall quality of the cycling experience, John is insisting on characterizing this as 'ignorant' and 'superstitious', repeating over and over again the small percentage of 'same direction' car bicycle collisions. Claiming that the majority of accidents happens at intersections he fails to give any specific recommendation to improve the design of intersections whereas I repeatedly have stressed the importance of proper intersection design. Neither John wants to seriously consider the observation that safety perception (or 'subjective road safety') in itself might be a serious impediment for promotion of bicycle

use. He considers the actual fears of potential cyclists as the result of a conspiracy of American motordom only. We, on the other hand, acknowledge that behaviour is strongly influenced by (subjective) perceptions. Therefore, if promoting bicycle use is the goal, improving 'subjective safety' is as important as improving the 'objective safety'. Therefore, if segregated facilities would only improve safety perceptions, their implementation would still be worthwhile.

John and I appear also to have different opinions on urban planning. As the need for travelling and the usability of the various modes is very much determined by the spatial spread of activities, dense urban environments with mixed land use will favour bicycle use. I am convinced that appropriate densities and mixed land use will contribute to a more sustainable development of our cities. John, on the other hand, is in favour of the decentralised American cities as, in his words, 'decentralized automotive cities are more economically productive than are centralized pre-automotive cities'. For the future of American cycling the debate on most desirable urban structures might even be more fundamental than the debate about the most appropriate infrastructure, but goes beyond the scope of this debate.

I have no problem with John's final conclusion that cyclists should have the freedom of choice about the way they want to use the road system. This freedom of choice for the cyclist can be an incentive to traffic planners to design cycling facilities to the highest quality levels making them attractive to all (even vehicular) cyclists. John will of course reply that the latter will never happen.

The essence of my disagreement with John is that I consider his crusade against even considering the implementation of dedicated cycling infrastructure as counterproductive at all levels. It is very clear we disagree on a lot of points. I trust that the readers of this debate will be able to understand both positions and make up their mind. Given the fact that we in the Netherlands combine the highest share of cycling with the lowest risk per km cycles, we must have done at least some things right!

Tom Godefrooij

Dutch Cycling Embassy

## 4 Forester's Analysis (unofficial)

It appears that Tom has learned little from this discussion. He is still fussing about our supposed disagreement about the vehicular character of cycling. "In my reflection I started with my perception of what I thought we could agree upon: the vehicular character of cycling (although John is giving a very specific interpretation of the term 'vehicular')..." I have to guess that Tom considers the word "vehicular" to apply only to a means of producing transportation work, moving people from place to place, a bicycle as a vehicle rather than a toy. But that issue was never raised: Tom and I, and our respective nations, all consider cycling as a normal means of producing transportation work. The discussion in my paper concerned the value to the cyclist of the right to obey the rules of the road for drivers of vehicles, versus the prohibition against doing that. That has nothing to do with the amount of transportation work, but only with the style with which that work is produced.

I had referred to the American statistics that about 95% of American car-bike collisions were caused by crossing or turning movements by either party. Tom distorted my statement, ignorantly and/or intentionally, to say that 95% of car-bike collisions occurred at intersections.

I had demonstrated that the arguments for the American cyclist-inferiority and bikeway system were fraudulent. But I had also stated that most Americans believed the deception and wanted more bikeways. Tom offered no reason to believe that the Dutch situation was any different.

I had described the pleasures and safety of cycling in accordance with the rules of the road. Tom misleadingly sidestepped this issue by writing: "In fact the voluntary use of cycling facilities by (the vast majority of) cyclists is the best indicator of their sufficient quality! If these quality requirements are being met discussions about the 'rules of the road' become irrelevant." Dutch cyclists are not voluntary bikeway users; they are prohibited (either by law or by society) from using the roadway where bikeways exist. It is obviously true that in major parts of the Netherlands there are very strong motivations for bicycle transportation. That being so, the restriction to the mandatory bikeways would reduce bicycle transportation only if it was noticeably less convenient than motoring. And with motoring already inconvenient, the bar is much lower.

Tom expresses no understanding of how a safety program should be operated. A proper safety program must understand the mechanisms by which accidents occur, the frequencies of each type, and the social costs of each type. That information should be used to set the priorities for working out and implementing mitigating actions. Such a program will place a much higher priority on ameliorating turning and crossing car-bike collisions than on car-bike collisions caused by same-direction motor traffic.

Tom will have none of this. He defends the greatly exaggerated fear of same-direction motor traffic, and therefore separation from that traffic, by conflating reduction in that fear with a reduction in car-bike collisions. That, of course, is the popular superstition held by those ignorant of car-bike collision statistics. Then he tries to deflect my criticism of that superstition by misleadingly applying to other characteristics of the cycling experience. "While I tried to make clear that a 'cycling-friendly road environment' goes beyond merely road safety considerations and will address also the overall quality of the cycling experience, John is insisting on characterizing this as 'ignorant' and 'superstitious'."

Tom then states his purpose. "Therefore, if promoting bicycle use is the goal, improving 'subjective safety' is as important as improving the 'objective safety'. Therefore, if segregated facilities would only improve safety perceptions, their implementation would still be worthwhile."

Both my paper and this discussion show that consideration of bicycle transportation excludes the welfare of cyclists for the purpose of serving other goals. Before there was scientific knowledge of car-bike collisions, those desiring those goals created superstitions to serve their purposes: in America, to serve motorist convenience; among 'greens' in America and elsewhere, to serve anti-motoring agendas. Even though these superstitions were disproved by the earliest scientific knowledge, they continue to be used by those serving either the pro-motoring or the anti-motoring agendas. Meanwhile, the welfare of cyclists is ignored amid the clash of political agendas.