Ideas in Motion

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Cycling Safety on Bikeways vs. Roads

by John Pucher

In his spring 2001 *Transportation Quarterly* (TQ) article, John Forester argues that separate facilities for cycling are unnecessary and dangerous.[1] He claims that cycling in mixed traffic on roadways is far safer than any sort of bike lane or bike path. Thus, he strongly opposes the current efforts at federal, state, and local government levels to construct systems of bike paths and lanes. Furthermore, Forester opposes special provisions of any kind for cyclists, such as turning lanes at intersections or priority traffic lights. His recommendation is that all cyclists be forced to cycle on the roadway and learn to operate their bikes as they would motor vehicles. Forester calls this concept "vehicular cycling."

Although Forester makes a number of theoretical arguments why bikeways are unsafe, his empirical test of the superiority of vehicular cycling is based on a sample of one—a single bike ride he took on a new bike path in Palo Alto, California. Cycling at the rapid speed he was accustomed to (from cycling on roadways), Forester estimates that the "risk rate was at least a 1,000 times greater on the sidepath than on the roadway."

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 summer 2000 TQ article "Making Walking and Cycling Safer: Lessons from Europe," the modal split share of cycling is more than 10 times higher in the Netherlands (28%), Denmark (20%), and Germany (12%) than in the United States, where fewer than one percent of urban trips are made by bike.[2] Moreover, the fatality rate per 100 million bike trips is less than a tenth as high in the Netherlands (1.6) and in Germany (2.4) as in the U.S.A. (26.3).

Forester 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 very dangerous, slow, and inconvenient—as he claims—then why is cycling overall so safe and so 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 United States? Vehicular cycling, as Forester points out, is already possible on most urban roads (except limited access highways). Yet, with

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vehicular cycling already possible, and with Forester-inspired "effective cycling" classes offered all over the country, cycling still accounts for fewer than 1% of all urban trips.

Within the United States, Davis, California is generally recognized as having the most elaborate system of cycling facilities of any American city. It also has, by far, the highest bicycling modal split share (22%), and a very low fatality and accident rate, among the lowest in California. If Forester were correct that separate facilities are so dangerous, one would certainly expect Davis to be overwhelmed by all the resulting bicycling injuries and deaths. Yet cycling in Davis is extraordinarily safe.[3]

In short, those countries and cities with extensive bicycling facilities have the highest cycling modal split shares and the lowest fatality rates. Those countries and cities without separate facilities have low modal split shares and much higher fatality rates. Forester claims that this is pure correlation and proves nothing. Nevertheless, the differences we have cited are dramatic—indeed, an order of magnitude or greater—and they directly contradict Forester's claim that separate facilities are so unsafe and inconvenient. Whatever the merits of separate cycling facilities, they cannot be the sole policy to promote safe and convenient bicycling in the U.S. In our summer 2000 TQ article, we recommended a multi-faceted approach that includes a wide range of measures to improve bicycling conditions:

- traffic calming of residential neighborhoods
- urban design oriented to people and not cars
- restrictions on motor vehicle use
- better traffic education of both motorists and nonmotorists
- enforcement of traffic regulations protecting cyclists

Our summer TQ article specifically recommended accommodating the sort of "vehicular cycling" that Forester advocates, but certainly not to the exclusion of separate facilities. Moreover, in an earlier article cited by Forester, my colleagues and I insisted on enforcement of the legal rights of "vehicular cyclists" to use most urban roads. We also recommended that roads be made more "bikable" through wider curbside lanes and shoulders, drain grate replacement, pothole patching, clear lane striping, and bike-activated traffic signals.[4] In short, our policy package would permit vehicular cycling as well as cycling on separate facilities. Forester, by contrast, favors eliminating all choice by forcing all cycling onto roadways, regardless of what cyclists themselves prefer.

Forester's policies are aimed at serving fast cycling by well-trained cyclists. All of his comparisons in the spring 2001 TQ article are made only for the high cycling speed he advocates. He completely ignores the willingness, desire or need of most people to cycle at slower speeds. Thus, his analysis and policy recommendations apply mainly to the small group of high-speed, well-trained vehicular cyclists.

Separate paths and lanes are especially important for those unable or unwilling to do battle with cars for space on streets. Training courses may help, but they do not eliminate the inherent danger of cycling on the same right of way with motor vehicles, particularly for those whose mental or physical conditions limit their capacity to safely negotiate heavy traffic. The slowed reflexes, frailty, and deteriorating hearing and eyesight 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. Bicycling should not be reserved only for those who are trained, fit, and daring enough to navigate busy traffic on city streets.

Forester admits in his article that virtually all surveys of the American public indicate that most people believe bikeways would be safer than cycling on roadways. Moreover they explicitly state that they would be far more likely to cycle if they had bikeways available. Clearly, Forester does not trust the preferences of ordinary people, whom he explicitly deems "most ignorant of the subject." Thus, he finds all such surveys to be irrelevant. But if most people prefer cycling on separate facilities, why not at least offer them that possibility, so they can make the choice for themselves, instead of being forced onto the roadway by Forester's proposed policy of no separate facilities at all?

Endnotes

1. Forester, J., The Bikeway Controversy. *Transportation Quarterly* 55(2), Spring 2001.

2. Pucher, J. and Dijkstra, L., Making Walking and Cycling Safer: Lessons from Europe. *Transportation Quarterly* 54(3), Summer 2000.

3. See case study of bicycling policies in Davis, California, in Pucher, J., Komanoff, C., and Schimek, P., Bicycling Renaissance in North America: Recent Trends and Alternative Policies to Promote Bicycling. *Transportation Research* 33A(7/8): 644-645, September-November 1999.

4. Pucher, J., Komanoff, C., and Schimek, P., Bicycling Renaissance in North America: Recent Trends and Alternative Policies to Promote Bicycling." *Transportation Research,* 33A(7/8): 648-649, September-November 1999.

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