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ROADWAY BEHAVIOR:
IT ALL DEPENDS ON PERCEPTION

A dissertation explores the social-psychological roots of roadway interactions between drivers and cyclists.

The Issue

Road safety concerns are a significant obstacle to increased bicycle use. Currently, bicyclist traffic fatalities and injuries present both a public health concern and a disincentive to people taking up or continuing to bicycle for transportation. Bicycling is not an inherently dangerous activity; automobile drivers pose the most risk of harm in crashes with bicyclists. Despite that, drivers' attitudes and behaviors toward bicyclists have not enjoyed much systematic study, particularly in the United States.

Psychology teaches us that implicit biases—attitudes we hold on a level below consciousness, and may not even be aware of—can have a heavy influence on split-second decisions. In a fast-paced activity like driving, with a lot of moving parts in a complex environment, people make those snap decisions all the time. There are obvious safety implications to this, particularly for the most vulnerable road users. That's why TREC researchers are becoming more and more interested in studying implicit bias and social psychology as it relates to transportation behavior.

The Research

NITC dissertation fellow Tara Goddard focused her research on the dimensions of drivers' attitudes toward bicyclists, including implicit bias and social attitudes, and examined the relationships between these attitudes and drivers' self-reported safety behaviors by means of an online survey. Her dissertation uses methods drawn from psychology to test drivers' subconscious biases about bicyclists.

THE ISSUE
Understanding drivers' attitudes toward bicyclists, and to what degree those attitudes predict behaviors, is integral to advancing livability and safety goals.

THE RESEARCH

• Used a cognitive test to measure respondents' implicit attitudes;

• Examined the relationships between drivers' attitudes and self-reported behaviors;

• Explored the usefulness of the implicit method and the attitude measures.

IMPLICATIONS
This work presents an analysis of drivers' attitudes and the factors that predict more positive attitudes toward bicyclists.
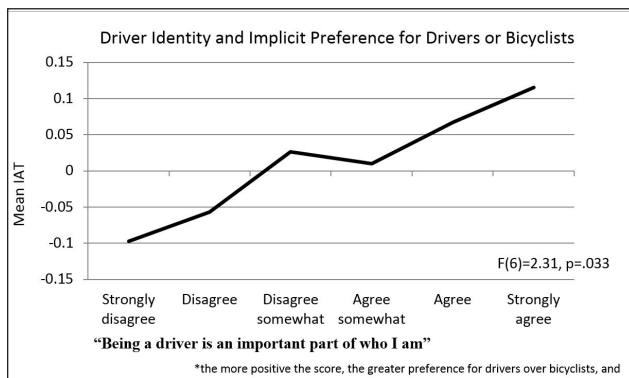
Photo: A cyclist passes a truck in southwest Portland, Oregon

Goddard incorporated several established social psychological concepts and applied them to interactions between roadway users. She introduced a conceptual model of roadway interactions as a framework for understanding the potential impacts and interactions of physical, individual, and sociocultural factors on the interactions of drivers and bicyclists. This model suggests that explicit or implicit biases, both at the individual and system level, might help explain the increased perceptions and realities of danger for bicyclists. Implicit bias between drivers and bicyclists was tested via a cognitive test, a well-established tool for measuring bias that had not previously been applied to roadway users. The goal of the study was to explore drivers' attitudes toward bicyclists using theories and methods from the social psychological science of intergroup relations.

Implications

Findings from the study indicate, first of all, that it is possible to measure an implicit preference for drivers or bicyclists. This result fits with existing research into implicit attitudes in many other areas. It supports the hypothesis that roadway user groups have socially-constructed meanings, which evoke subconscious bias even abstracted from contextual issues of trade-offs of resources like parking or funding. Implicit bias against bicyclists, for example, helped predict whether or not a driver habitually checked for bicyclists before making a right turn.

The perceived pressure to overtake a bicyclist who is going slowly was found to be widely felt by drivers, and was not related to personal travel behavior, the built environment, or most sociodemographics. Another key finding is that implicit attitudes toward bicyclists are related to, but distinct from, consciously-held attitudes toward bicyclists. Implicit bias provides additional explanatory power in prediction of attitudes and behaviors.

Driver Identity and Implicit Preference for Drivers or Bicyclists

$F(6)=2.31, p=.033$

"Being a driver is an important part of who I am"

*the more positive the score, the greater preference for drivers over bicyclists, and

Driver Identity and Implicit Preference

Identity affects preference. The more strongly respondents agreed with the statement "Being a driver is an important part of who I am," the more they subconsciously preferred drivers over bicyclists.

Goddard demonstrates that drivers' attitudes toward bicyclists can be understood through social psychological theories of intergroup relations. She also presents an analysis of the factors that affect these attitudes. One significant factor is personal experience. Drivers who had personal experience as a bicyclist often improved both attitudes and behaviors toward bicyclists. Additionally, support for bicycle infrastructure came from all directions, even from drivers who held negative attitudes toward cyclists. The surveys show that regardless of demographics, travel behavior, or location, there was broad support for public investment in bicycle infrastructure. Contrary to anecdotal data, even the most pro-driver respondents generally considered bicycle infrastructure to be a good investment of public funds.