Social comparisons, status and driving behavior

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The establishment of desirable social norms is an integral part of a well-functioning civil society. While recent evidence has demonstrated that social comparison can affect behavior in a variety of contexts, it is not clear what type of comparative social information is most effective. Using a large-scale field experiment to study driving practices, we sent text messages containing different types of social information to drivers in Tsingtao, China. We find two types of social information to be particularly effective in reducing traffic violations: the driving behavior of those similar to oneself and the driving behavior of those with high-status cars. Our results indicate that the combination of descriptive norms with social status is a cost-effective yet powerful intervention for establishing better driving behavior in emerging markets.

1. Introduction

Social information has been shown to affect behavior in a variety of domains. It is well-documented that social comparisons can cause people to reduce household water consumption (Ferraro and Price, 2013) and overall energy consumption (Allcott, 2011; Allcott and Rogers, 2014), increase contributions to public goods in online communities (Chen et al., 2010), and influence voter turnout (Gerber and Rogers, 2009). Despite the increased interests in social comparison research, several open questions remain. In particular, what type of social information is most effective to influence behavior? Who are influenced by social comparisons? And lastly, what is the role of status in social comparisons?

While sociologist Gabriel Tarde acknowledged that the superior could both influence and be influenced by the inferior, he asserted that “the radiation of examples from above to below is the only fact worth consideration” (Tarde, 1888, page 187). Despite the increased interests in social comparison research, several open questions remain. In particular, what type of social information is most effective to influence behavior? Who are influenced by social comparisons? And lastly, what is the role of status in social comparisons?

— Gabriel Tarde (1888, page 187)

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† Gabriel Tarde (1843–1904), a French sociologist, is considered one of the founding fathers of sociology.

2 We review this literature in detail in Section 2.
Traffic fatalities have become a widespread problem. In 2010 alone, 1.24 million people were killed on the roads in various countries in the world. Of these, 80% were in middle-income countries, where only 50% of the world’s registered vehicles were owned and driven (United Nations General Assembly, 2013). In addition to the loss of life, these accidents result in billions of dollars in costs for drivers and insurers (Jacobs et al., 2000). The growing awareness of the devastating scale of road traffic injuries as a global public health and development concern prompted the governments of the world to declare 2011–2020 as the Decade of Action for Road Safety (World Health Organization, 2013).

Many measures have been proposed to reduce fatalities from road accidents, including increasing road capacity; passing stricter road safety laws; increasing penalty for drinking and driving; increasing the use of seat belts, helmets and child restraints; and improving post-crash responses (World Health Organization, 2013). While many countries managed to lower the number of fatal car accidents quite effectively by the use of these measures, implementation takes time and resources. This study explores alternative ways to increase road safety through social comparison.

Specifically, our study focuses on China. Car ownership in China has an annual growth rate of 24% in recent years and China is projected to overtake the United States as the country with the largest car fleet in the world by 2030 (Chamon et al., 2008). As private car ownership is a relatively recent phenomenon in China, social norms about driving have not yet been established. Consequently, the use of social comparison can be particularly effective in influencing behavior (Buunk and Mussweiler, 2001).

In this paper, we systematically vary and evaluate the role of status on driving behavior in our interventions. The use of status-based social comparison to influence driving behavior in China is particularly promising, as the type of car one drives increasingly reflects one’s social status (Barton, 2011; Branigan, 2012). As status symbols, cars signify not only stability and maturity, but also marriageability in a society with rising sex ratios. Therefore, in our study, we link social information with car status to influence driving behavior.

Based on social comparison theories in economics and psychology, as well as empirical findings from lab and field experiments, we implement a large-scale field experiment in Tsingtao, a prosperous coastal city in China. In our field experiment ($n = 395,204$), we send a text message to 75,247 drivers who had received at least one ticket in the first nine months of 2013 that indicates one of the following: his or her own number of tickets, the average number of tickets among drivers of the same car brand, or the average number of tickets among drivers of a high-, medium-, or low-status car. Our results show that, compared to the control condition, drivers with an above-average number of violations reduce their future violations by 6% after receiving information on the average number of violations for drivers of their own car brand. This result replicates the effect of descriptive norms of similar others found in the lab and field. Furthermore, we find that drivers reduce their future violations by 5% after receiving information on what drivers of high-status cars do.

The effect is the largest among male drivers of an economy car who receive a treatment message in the earlier study. Given that our experiment was conducted in the same city, it is important to compare the two studies. In Lu et al. (2016), all text messages were sent in April 2012, 18 months before ours. Furthermore, Lu et al. (2016) find that the treatment effect faded away in eight weeks. Lastly, less than 5% of the drivers in our experiment received a treatment message in the earlier study. Therefore, we think that driver behavior in our study is unlikely to be affected by the earlier study, given the 18-month gap between the two.

Our study adds a new element to the social comparisons and social influence literature by interacting social information with

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3 The rising sex ratio has been proposed as one of the motives for household savings in China (Wei and Zhang, 2011).

4 As we only look at a selective sample of those who had at least one traffic violation, we might have been overestimating the effect such an intervention would have on the broad population.
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