Simulated Driving and the Question-Behavior Effect

Laura Tamburini, Carlo Fantoni, Walter Gerbino
Psychology Unit “Gaetano Kanizsa”, Department of Life Sciences, University of Trieste, Italy

Keywords: new drivers, simulated driving, driving behavior, reflective thinking, question-behavior effect

In industrialized countries and in countries in the developing world, motor vehicle accidents are the leading cause of injury and the most important cause of death and disability in the first half of life [1,2] In Italy traffic accidents are the leading cause of death among young people aged between 15 and 20 years. Per mile driven, teen drivers aged 16-19 years are four times more likely than older drivers to crash.

A previous study of ours [3] provided strong support for the occurrence of a question-behavior effect [4,5] within the context of a safe driving program. We demonstrated that a specific action of a prevention program involving reflective thinking [6] (i.e. answering a questionnaire on driving and traffic safety between two simulated driving tests) alerted a sample of 55 high school students (including 24 with car driving license) and induced a concern capable of modifying driving performance. Simulated driving behavior of young adults (with/without driving license) proved to be malleable. Obtained effects emerged from an experimental design including a control group of 61 participants (including 22 with driving license) involved in reflective thinking on a distracting topic only partially related to road safety.

In this study, we analyzed correlations between simulated driving performance improvements, measured by reductions of traveling speed, emergency braking reaction time, and number of offences during motorway driving (excess speeding, unsigned lane changes, collisions, traveling in the emergency lane) and students’ answers to specific questions about risk perception and self-confidence, included in the driving safety questionnaire.

In the second session participants who answered the driving safety questionnaire changed their performance according to greater carefulness, compared to participants in the control group. This behavioral change was positively correlated with students’ answers to items related to the perception of risk on the road. Furthermore, simulated driving performance was more reckless (less reduction of driving speed) in participants who expressed greater self-confidence in their driving skills.

In general, our study demonstrated that objective changes in simulated driving performance can be reliably induced by answering specific questions during participation in a safe driving program.

Acknowledgments: We thank Automobile Club of Trieste for providing the driving simulator designed by ACI safe driving center at Vallefunga.

2. Elvik, R. (2010). Why some road safety problems are more difficult to solve than others. *Accident Analysis and Prevention*, 42, 4-1089-1096.


