Driving distractions – What is wrong with us?

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Keywords: driver distraction; research; regulation; manufacturing; design; marketing

In this talk, I will briefly review the short history and current status of distraction research. I will discuss the recognized key deficiencies of the research discipline, foremost the lack of a useful definition of distracted driving. I argue that the lack of a proper and common definition in the research community has led to poor operationalization(s) of the construct, lack of standards, incommensurable points of view within the community, and even contradictory research findings. This in turn has led to insufficient and incoherent guidance to stakeholders, such as in-car user interface designers, as well as legislators and governmental organizations who are trying to regulate drivers' behaviours behind the wheel and the automotive manufacturers from bringing tempting but poorly designed secondary activities in the fingertips of the drivers. Bans and/or fees on the use of mobile devices while driving do not seem to work; the drivers are still willing to engage distracting activities while driving, as revealed by several polls in several countries (e.g., Finnish Road Safety Council, 2014). This highlights the need to develop safer means for the driver to conduct secondary activities while driving, but despite of good efforts (e.g., AAM, 2006; NHTSA, 2013), there are currently no reliable verification criteria or test method to verify that an in-car user interface is safe for use while driving. The automotive industry has taken the marketing advantage of the research results indicating how risky it is to use mobile devices while driving, but at the same time there are more and more in-car services and applications available on the embedded infotainment systems in our cars, of which distraction effects has not been sufficiently studied. The industry is demanding, and thus, some researchers are pushing for low-cost distraction evaluation methods, although several studies have indicated that the low-cost methods are often unreliable. At the same time a lot of financial resources are spent on developing other safety-critical systems in the car. This is understandable and a great thing, but one can ask why always, when it is about user interfaces, industry demands for quick, cheap and dirty methods. Autonomous self-driving cars would be the ultimate solution for the problem but as long as there is even one human driver on the roads, the risks of driver distraction are among us. Furthermore, the way to the fully autonomous cars is paved with yet unseen risks, as the driver is partially relieved from the responsibility of driving, but only partially.

The talk tries to pinpoint areas of development, and suggests that all of us, researchers, automotive manufacturers, in-car user interface designers, as well as the government officers creating regulations, standards, and guidelines could do better work on this safety-critical area. The presentation concludes by highlighting some key proposals on how we could together proceed towards safer future.

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