

Understanding driver self-regulating behavior: how does phone use influence vehicle control in real world?

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In the last few years, research on driver distraction focused on assessing the extent to which using mobile phones is compatible with safe driving. Many studies employing driving simulators suggested that using a phone while driving is definitely unsafe. Nevertheless, so far, naturalistic studies, as well as aggregate crash statistics, did not match these results, keeping open the debate, and promising guidelines for new countermeasures to distraction alternative to bans and based on understanding driver behavior in the real world.

Naturalistic data collected from 108 drivers in the Integrated Vehicle-Based Safety Systems (IVBSS) program in 2009 and 2010 was employed to determine how drivers change their vehicle control when engaging in a conversation on, or manipulation of, a phone. Drivers were also divided into three age groups 20-30 (young), 40-50 (middle-age), and 60-70 (older) to determine the possible interaction between age and phone use while driving on vehicle control.

Using a phone for calling affected lateral control differently than manipulating a phone (as while dialing or texting). However, no difference was found for longitudinal control. Young drivers used a phone while driving more often than older and middle-age drivers. In addition, young drivers exhibited smaller safety margins while using a phone as well as faster reactions. Finally, the results suggest that drivers tend to interrupt phone interactions when the driving context becomes more complex.

In conclusion, this study suggests that driver self-regulating behavior is the key to assess the net safety effect of using a phone while driving. Consequently, countermeasures able to support the drivers' inherent self-regulating behavior may be a more successful, and more widely adopted solutions, than phone bans toward addressing the potential for distraction posed by phones while driving.