

## **Dissociation between driving performance and drivers' subjective estimates of performance and workload in dual-task conditions.**

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**INTRODUCTION:** The current study measured how concurrent driving and in-vehicle activities of different levels of engagement varied in terms of performance and subjective estimates of demand and performance. **METHOD:** In this test track study, 41 younger and older drivers completed a series of cognitive tasks while driving an instrumented vehicle. One task involved an engaging guessing game where drivers tried to guess the identity of an object. The other task involved a simple mental arithmetic task. **RESULTS:** We observed some dissociation between drivers' performance and their subjective reports. For instance, drivers tended to estimate their performance as better for the more engaging guessing task than the arithmetic task, though their performance was actually worse. At the same time, subjective estimates of workload across the two tasks did not vary in the dual-task condition even though they did in the single-task baseline conditions, suggesting that drivers failed to account for the added demands in dual-task situations. **CONCLUSIONS:** We discuss the implications of these findings for driver safety. **IMPACT ON INDUSTRY:** Crashes due to distraction can carry tremendous costs for employers, in terms of injury, disability, and loss of potentially productive work years, whether these crashes occur on or off the job.

## **Effects of simulator practice and real-world experience on cell-phone-related driver distraction.**

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**OBJECTIVE:** Our research examined the effects of practice on cell-phone-related driver distraction. **BACKGROUND:** The driving literature is ambiguous as to whether practice can reduce driver distraction from concurrent cell phone conversation. **METHODS:** Drivers reporting either high or low real-world cell phone usage were selected to participate in four 90-min simulated driving sessions on successive days. The research consisted of two phases: a practice phase and a novel transfer phase. **RESULTS:** Dual-task performance deficits persisted through practice and transfer driving conditions. Moreover, groups reporting high and low real-world experience exhibited similar driving impairments when conversing on a hands-free cell phone. **CONCLUSIONS:** These data indicate that practice is unlikely to eliminate the disruptive effects of concurrent cell phone use on driving. **APPLICATION:** Multiple regulatory agencies have considered, or are currently considering, legislation to restrict in-vehicle cell phone use. Findings reported herein may be useful to inform these public policy decisions.