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COMMENT

FROM THE GUEST EDITORS Science and Technology of Driver Distraction: Introduction to the Special Issue

A challenge for drivers, regulators, and product developers is to manage this array of potential distractions so that the overall driving experience is not compromised.

“Cars are quickly becoming mobile Internet devices.” This phrase has been heard more frequently in the last few years as the use of electronics and telematics technologies in vehicles has rapidly increased. In contrast with 1977 – when the first vehicle to implement a microprocessor was introduced (controlling a single function) – today’s high-end vehicles contain 70 to 100 distributed computer processors that run more than 100 million lines of code, 20 million of which may be required for a navigation system alone (Charette, 2009). And beyond these developments in vehicles themselves, drivers bring their own technology into the vehicle to use while driving: cell phones, smartphones, music players, and portable navigation systems, to name just a few.

The evolution of electronics promises more pleasant and efficient driving and carries with it the possibility of active safety technologies intended to help drivers avoid crashes. However, electronics in the vehicle can also introduce activities that may draw drivers’ attention from the road, if the new technologies are not carefully integrated with the driver and the task of driving. The problem of distraction is not new, but the potential for distraction represents a particularly salient and rapidly changing concern.

If the car is thought of as a mobile Internet device, it presents a particular challenge because it dissolves boundaries between life outside and life inside the car. In the past, the sources of driver distractions were largely limited to passengers, food, cigarettes, and billboards, but today, new technology promises a greatly expanded array. A challenge for drivers, regulators, and product developers is to manage this array of potential distractions so that the overall driving experience is not compromised and so that products support a focus on the road rather than distract from it.

This special issue of *Ergonomics in Design* brings together a selection of articles that describe the challenge of balancing the economic pressures, desires, and behaviors of drivers with the limits of human attention. The articles in this issue are organized around three topics.

The scientific basis for action on distraction. Articles on this topic provide an overview of key empirical findings that form the foundations of our understanding about driver distraction. These articles take an integrative approach to the literature.

Action through design: applying knowledge to prevent or mitigate distraction. The articles on this topic illustrate how human factors/ergonomics professionals can take action to prevent or mitigate distraction through design. These articles include a case study of product design, a case study of a process that can be used to develop products that prevent or limit distraction, and an article on advanced-technology countermeasures.

Action through outreach. Two companion pieces explore the challenges of outreach from the vantage point of science; one on taking action through advocacy, and the other on science-based policy development.

Although technology trends are affecting vehicles and drivers in new ways, National Highway Transportation Safety Administration administrator David Strickland recently said, “A car is not a mobile device.” In the midst of technology trends, his words are an important reminder that reducing distraction-related crashes and injuries deserves the focus of the joint efforts of researchers, practitioners, and policy makers. We hope that the set of articles in this issue will stimulate thought toward issues and potential solutions for preventing and mitigating driver distraction.

Linda S. Angell and John D. Lee
Special Issue Guest Editors