

3rd International Conference on Driver Distraction and Inattention

September 4-6, 2013

Gothenburg, Sweden

www.distractionconference.com

Co-organisers: SAFER and UNSW

KEYNOTE SPEAKER ABSTRACT 1:

Title:

Driving by the seat of your pants!

A multisensory approach to capturing driver attention

Keynote Speaker:

Prof. Charles Spence, Crossmodal Research Group, Oxford University, UK

Abstract: The increasing availability of complex in-vehicle technologies means that ‘driver inattention’ constitutes one of the leading causes of car accidents. The question therefore arises as to how best to alert ‘distracted’ drivers to potential road dangers.

I will review the latest laboratory- and simulator-based studies from the Crossmodal Research Laboratory in Oxford detailing a novel brain-based approach to the design of auditory, tactile, and multisensory warnings signals. I will highlight research demonstrating the potential for improving driver behavior in potentially dangerous situations and so reducing the incidence of road traffic accidents that such multisensory warning signals offer.

I will also outline the results of recent studies showing that multisensory stimuli can capture the attention of the driver in the simulator (and the average participant in the psychology laboratory) far more effectively than unisensory stimuli.

The importance of spatial co-location in multisensory warning signal design will also be discussed, as will new evidence regarding the potentially beneficial effects of presenting warning signals in near-rear peripersonal space (i.e., from the headrest) on drivers’ head-turning responses. Finally, I will take a look at the latest evidence concerning the potential benefits of using looming auditory and/or tactile alerts.

References:

Ho, C., & Spence, C. (2008). The multisensory driver: Implications for ergonomic car interface design. Aldershot: Ashgate Publishing.

Ho, C., & Spence, C. (2009). Using peripersonal warning signals to orient a driver’s gaze. *Human Factors*, 51, 539-556.

Spence, C. (2012). Drive safely with neuroergonomics. *The Psychologist*, 25, 664-667.