The road towards ecological validity: from laboratory research to applied relevance

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Studies in cognitive psychology typically involve simplified task conditions and abstract geometric shapes to isolate specific processes that give rise to behaviour. However, tasks in real life involve complex scenarios and require the allocation of cognitive resources to multiple subtasks to achieve behavioural goals. Driving is an example of such a real-life task requiring the coordination of multiple cognitive skills and subtasks.

In this talk I will present some of the work I have been involved in during my time at the Transportation Research Institute of Hasselt University in Belgium. In the first part I will focus on the measurement of electrophysiological processes of spatial attention during driving-related tasks. In the second part I will elaborate on measurement, prediction, and training of driving ability in older drivers. Our research highlights the fine balancing act between experimental control on the one hand and applied relevance on the other hand that many researchers investigating real-life tasks encounter.