Situational awareness is defined as the perception of elements in the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future. With regard to the relationship between situational awareness and the efficacy of DTM measures three aspects are relevant: spatial awareness, system awareness and task awareness. A driving simulator study was performed to analyze to what extent complex interaction with other traffic and the complexity of DTM measures influence spatial awareness and system awareness. The complexity of interactions with traffic was simulated by the induction of speed changes of the lead vehicles. Whereas the complexity of DTM measures was induced by exposing participants to maximum speed limit signs and route information with an increasing level of complexity and ambiguity. Spatial awareness and system awareness were measured through eye fixations using a new data collection and analysis technique. Furthermore, a psycho-spacing car following model was estimated to measure spatial awareness, while the compliance to the DTM measures was considered another measure for system awareness. The influence of complex interactions with other traffic as well as of the complexity of DTM measures was analyzed through Multivariate Analyses of Variance.

Driving Behavior Model from the Brain Science point of view and the applications to safe-driving training program
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Many People have believed that human behavior is explained as cognition-judgment-operation loop. But recently, the brain scientists have been elucidating the fact that there is anticipation before cognition in the brain processing. The TP-theory (Temporal Predictive behavior model) is a model which applies anticipation-operation-comparison loop as new information processing with temporal frame to human behavior including car driving. Driving behavior is separated into five different levels of temporal anticipation windows. Each window consists of both feed-forward loop and feed-back loop. Why people feel stress in driving? Why people can synchronize traffic environment, or not? This TP-theory can also give answers for these questions from subjective (feelings) point of view, although the model is developed for human behavior. This article firstly gives the general explanation about the TP-theory. Next, one example is illustrated where we created and conducted curriculum for safety driving training based on the TP-theory, and the validity of the application of the theory is discussed.

Facets of driver behaviour: the benefit of hindsight
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Groeger (2000) identified four facets of driver behaviour which were hypothesised to underlie drivers’ responses to risk: Detection, Option Appraisal/Evaluation, Response Selection and Action Implementation. Together these were thought of as incorporating cognitive, somatic and motor determinants of whether, how, and how successfully drivers might respond to risks of which they may or may not have awareness. In the decade since this framework was published a wide variety of results have been published which, I will argue, fit very well with the four facet framework, and can be used to make explicit not only the operation, interaction and the neurological underpinnings.