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MEETING REPORT

REPORT FROM THE 20TH INTERNATIONAL ROAD SAFETY ON FIVE CONTINENTS (RS5C) CONFERENCE, LEEDS, UK, SEPTEMBER 3–5, 2025

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Abstract: This article reports on participation in the 20th international Road Safety on Five Continents (RS5C) conference, held in Leeds, United Kingdom, on September 3–5, 2025. Organized by the Swedish National Road and Transport Research Institute (VTI) and Virtuocity at the University of Leeds, the event brought together researchers and practitioners from diverse disciplines. Key themes included the global burden of road crashes, fatigue management, cultural influences on driver behaviour, and effective preventive interventions. Particular attention is given to the author's research on associations between age, anxiety, cognitive ability, and time to collision (TTC) estimation accuracy. Higher fluid intelligence was associated with more accurate estimates, whereas older age and higher anxiety were associated with greater errors. High anxiety strengthened the association between age and estimation errors. The report also reviews research on distraction, young and older drivers, the effects of medical conditions and medications, and vulnerable road users. The conference highlighted the importance of interdisciplinary collaboration and interventions tailored to specific driver groups. The research presented may also inform aviation psychology, particularly studies of fatigue, task demands, and cognitive influences on operator performance.

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REPORT

From September 3 to 5, 2025, I had the opportunity to participate in the 20th international Road Safety on Five Continents (RS5C) conference, held in Leeds, United Kingdom. The event, organized by the Swedish National Road and Transport Research Institute (VTI) and Virtuocity – the Urban Simulation Centre at the University of Leeds, brought together experts, researchers, and practitioners from around the world, focusing on improving road safety. Each day of the conference began with a keynote presentation. On the first day, Dr. Maria Segui-Gomez, in her lecture "Global burden of road crashes: where we are in terms of outcome and preventive interventions", presented current WHO data on global road traffic fatalities, highlighting key risk factors and challenges in reducing accidents by 2030. On the second day, Pasi Anteroinen, in "The Story of Road Safety in Finland – The importance of the narrative and beliefs", emphasized the role of narrative, culture, and social beliefs in shaping effective road safety policies. On the third day, Prof. Ashleigh Filtness, in "Fatigue Management in Transportation", focused on managing driver fatigue, which accounts for 15–30% of road accidents, demonstrating the importance of considering the human factor in the design of transport systems.

During the conference, I had the opportunity to present the results of my own research on Time to Collision (TTC) in the context of drivers' age, anxiety, and cognitive abilities in the presentation "Age, anxiety, and general cognitive ability affect time to collision estimations in drivers". My study was inspired by the classic work of Hunt, Pellegrino, Frick, Farr, and Alderton (1988) on the ability to reason about motion in the visual field. The results showed that fluid intelligence positively correlated with estimation accuracy, while age and anxiety were associated with greater errors. Importantly, high anxiety amplified the negative effect of aging, meaning older drivers with higher anxiety made significantly more errors. The conclusion is clear – this decline in ability with age is real, but it can be mitigated through cognitive training and anxiety management. The presentation received significant interest and became a starting point for further discussions and exchanges of experience.

The conference also included numerous thematic sessions on driver behavior, vulnerable road users, and interventions to improve safety. Studies presented came from various countries, including India, Turkey, Belgium, Malaysia, and Sweden, combining psychological, cultural, medical, and technological perspectives. For example, S. Mathai, in "The effect of state of mind, knowledge and years of driving experience on the safe driving behaviour of drivers in India", showed that experience and knowledge of traffic rules increased driving safety, while stress and haste significantly increased the risk of risky maneuvers. N. Budak and colleagues, in "Cultural and Skill-Based Influences on Driver Behaviours: A Comparison of Two Countries", compared drivers from Turkey and Belgium, analyzing the influence of cultural differences and individual skills. Their results indicated that individualism was associated with more violations, while collectivism promoted safer driving. Notably, in Turkey, highly skilled individualist drivers were more cautious, whereas in Belgium, they were more confident and prone to risk-taking.

Simultaneously, research on non-driving-related activities highlighted the difficulty of maintaining attention. C. Ahlström, in "Non-driving related activities and their complicated relationship with attention", showed that while drivers avoid distractions in situations requiring concentration, such as intersections, this comes at the cost of reduced observation of the road and mirrors. E. Michelaraki, in "Implementation of an integrated model for understanding the impact of task complexity and coping capacity on crash risk", demonstrated that the complexity of road tasks significantly increases crash risk, with younger and less experienced drivers struggling more, emphasizing the need for targeted interventions. Driver fatigue issues were further explored by K. Miller in "Real world experiences of countermeasures to driver sleepiness for drivers with obstructive sleep apnoea", revealing that although many drivers admitted to driving while sleepy, few employed effective countermeasures, such as combining short naps with caffeine. The use of CPAP devices was limited, highlighting the need to adapt interventions to real-life conditions. N. Budak and her team, in "Behind the Wheel and Beyond Time: The Relationship between Time Perspectives and Speeding in Türkiye and Belgium", showed that a hedonistic present-oriented perspective is a strong predictor of speeding, regardless of culture, while future-oriented thinking reduced speeding risk in Turkey, emphasizing the influence of social norms. In "Young Drivers' Behavior Toward Pedestrians Crossing: Impact of Aggressive Driving Behaviors", N. Phuksuksakul highlighted

the problem of aggressive behaviors among young drivers in Thailand, which increase the risk of accidents involving pedestrians, an important consideration for educational programs targeting this group. The conference also focused on older drivers and individuals with reduced cognitive abilities. E. Hogervorst and colleagues, in "Early-stage Dementia and Road Hazard Perception - Can We Determine Fitness to Drive?", demonstrated that individuals with mild dementia have impaired hazard perception, making safe driving difficult despite subjective feelings of competence. Additionally, studies from Sweden showed that cardiovascular and neuroactive medications increase accident risk by impairing cognitive, motor, and visual functions. Research on young drivers and effective systemic interventions was also discussed. Analyses confirmed that the Graduated Driver Licensing (GDL) system is the most effective strategy for improving safety, and that active parental involvement in the learning process significantly enhances educational outcomes. Studies on road aggression further revealed that the ability to forgive mediates the relationship between self-control and aggressive driving, while analyses of professional drivers, such as craftsmen and caregivers, highlighted the need for tailored safety support for specific occupational groups. The studies presented represent only a small sample of the research shared at the conference.

The RS5C conference proved to be extremely valuable, integrating perspectives from psychology, medicine, engineering, law, and public policy to understand road safety. Particularly inspiring were studies on fatigue management, cultural differences in driver behavior, and the influence of diseases and medications on the safety of older road users. Participation in the conference allowed me not only to present my own research but also to establish new contacts and gain inspiration for future projects, including studies on pilot behavior and the impact of human factors on safety in aviation. It is worth noting that, although the conference focused on road transport, it addressed universal issues, such as the effects of fatigue, task load, personality, and cognitive abilities on operator performance, making it a source of valuable insights for aviation psychology research as well.

AUTHORS' DECLARATION

Manuscript preparation: Marcin Biernacki. The author declares that there is no conflict of interest.