The relative impact of cyclists’ appearance and infrastructure layout on speed and lateral distance while overtaking bicyclists: a simulator approach

Anja Katharina Huemer, Traffic & Engineering Psychology, Technische Universität Braunschweig, Germany, a.huemer@tu-braunschweig.de
Eva Christina Blossei, Traffic & Engineering Psychology, Technische Universität Braunschweig, Germany, e.blossei@tu-braunschweig.de
Katharina Schrader, Traffic & Engineering Psychology, Technische Universität Braunschweig, Germany, katharina.schrader@tu-braunschweig.de
Mark Vollrath, Traffic & Engineering Psychology, Technische Universität Braunschweig, Germany, mark.vollrath@tu-braunschweig.de

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For most cyclists, being overtaken by a car feels uncomfortable. In recent years though, cycling infrastructure is brought from the pavements onto the streets to prevent accidents between straight-cycling cyclists and right-turning drivers. In the present two studies, we examined the influence of infrastructure layout on drivers’ speed and lateral distance while overtaking bicy-clists in urban scenarios. Gaze behaviour of drivers will be analysed as well. Two within-subject design studies are at the moment conducted in a static driving simulator. In the first study, lane markings for cyclists were varied in three conditions: no marked cycling infrastructure, dashed lines (where German drivers are allowed to drive on the marked cycling path; Radfah-rerschutzstreifen), and solid lines (where German drivers are not allowed to drive; Radfahr-streifen). In this study, we also attempt to replicate the effects of cyclists’ appearance on over-taking manoeuvres, reported by Walker and colleagues (Walker, 2007; Walker, Garrard & Jowitt, 2014) in their naturalistic observations. In the second study only infrastructure, especially street and lane width, as well as lane separa-tion, is varied. As data collection is still ongoing, results and implicatio ns are presented at the conference. To our knowledge, this approach to examine the effects of infrastructure layout on cyclists-related behaviour in a controlled experimental setting has not been used before, but is rather promising as new layouts as well as assistance systems may be tested in the simu-lation before (expensively) building them in reality.