

Problems of sensory- and cognitive conspicuity of motorcyclists at junctions: A car to motorcycle comparison of visual search and give-way intentions by car drivers, from two angles of approach

Abstract

Author: Prijs, K.

Published: 2015, Faculty of Social and Behavioural Sciences Theses, (Master thesis)
Utrecht University Repository

It is often assumed that motorcyclists have a relatively higher chance of falling victim to car driver right-of-way violations than cars at junctions. Various studies have pointed out this is particularly the case due to the motorcyclist's poorer sensory- and cognitive conspicuity. The angle of approach between the car driver and motorcyclist may interact differently with conspicuity related causes of crash. However, the angle of approach has not been given sufficient attention in the available literature. There are no experimental studies in which opposite- and perpendicular angles of approach are combined and compared between car driver-to-car and car driver-to-motorcycle interaction. The main goal of the present study was to examine differences in visual search and intentions to give way by car drivers, when motorcycles and cars approached two prior selected, four-legged non-regulated junctions. Video clips of oncoming cars and high- and low-salient motorcyclists were presented to 93 car driver's license holders. Response times and eye-gazes of participants were measured. The results confirmed that car drivers gave way to perpendicularly oncoming motorcyclists later than perpendicularly oncoming cars (measured after first-fixating target vehicle), at one of the two selected junctions. Furthermore, results showed a reversed pattern from what was expected in opposite approaches, in which car drivers gave way to motorcyclists significantly earlier than cars. Lastly, results confirmed that car drivers fixated perpendicularly oncoming high-salient motorcyclists earlier than low-salient motorcyclists, on one of the two selected junctions. We could however not confirm that high-salient motorcyclists were detected earlier in opposite approaches too.