

Naturalistic Study of Riders' Behaviour in Lane-splitting Situations

Abstract

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Introduction

This study monitored the riding and situational behaviors of 11 motorcyclists traveling during commuting periods on instrument-loaded motorcycles along urban expressways in the Paris region. While French data show that up to 5% of police-reported crashes involve motorcycle lane-splitting, the authors cite data from Mutuelle des Motards, a French insurance company, indicating that as many as 60% of motorcyclist crashes involve lane-splitting.

Method

This study involved vehicle-borne video camera recordings (four cameras on each motorcycle) and other data (e.g., vehicle kilometers-traveled), as well as in-person interviews. From this information, researchers were able to document that nearly three-fourths of motorcyclist travel times (72%) and travel distances (77%) were spent “riding between traffic lanes” (i.e., lane-splitting).

Results

Primary visual focal-points for subject motorcyclists centered on the distance between traffic streams traveling in adjoining lanes (i.e., the width of the lane-splitting corridor) and the speed differential (i.e., the difference between motorcycle speeds and those of other vehicles). Focal point attention was also given to the wheel angle of vehicles ahead; when turned toward an adjoining lane that often predicted that another vehicle was more likely to change lanes and cut off the lane-splitting motorcyclist. Driver behavior inside other vehicles (especially drivers focused on electronic devices or conversing with other passengers) is a predictor of swerving. Motorcyclists also focused on other lane-splitting motorcyclists, for the obvious reason but also in order to yield the right-of-way to faster motorcyclists, and vehicle license plates (among other vehicles, those identifying out-of-region drivers who were not used to lane-splitting motorcycles).

With traffic stopped, motorcyclists filtered between lanes at an average of 38 kilometers per hour [kph] (24 mph). When speed differential increased beyond about 50 kph (31 mph), many subject motorcyclists stopped lane-splitting altogether. Participants reported feeling that riding between lanes of stopped traffic (in this study called filtering forward) seemed to be the safest situation, since other vehicles were much less apt to change lanes.