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Research and Experimentation on the Strategies Adopted by Urban Cyclists

New Procedure for Video Observation of Urban Cyclists to Get on in Traffic Cyclists Try to Avoid Stopping

Key Facts A study of the strategies used by cyclists in a number of French towns using video recordings showed that cyclists try to avoid stopping. Junctions are the trickiest problem for cyclists.

Content As the behaviour of cyclists is harder to analyse than that of pedestrians and motorists, a new observation procedure combining techniques used to analyse the behaviour of pedestrians and of motorists was developed for a project of the French PREDIT traffic research programme (theme 17: urban mobility and non-motorised traffic).

A light-weight city bike was equipped with four cameras linked to a video mixer so that all four pictures could be recorded simultaneously. The cameras were protected from vibrations. One camera filmed the cyclist’s face, one the road ahead, the third one the road behind and the fourth one the speedometer. Forty-six journeys made by twenty volunteer cyclists following their usual daily urban routes in Paris and Lyon were studied.

The data recorded include speed, gear changes, the direction in which the cyclist is looking, whether and how hard he is pedalling, the type of infrastructure used (e.g. cycle lane, roadway or footpath), general traffic density, the management of priority at junctions (e.g. priority from the right), whether the cyclist is approaching a junction, at a junction or on a normal section of road, turning manoeuvres, compliance with traffic regulations (e.g. red lights and one-way streets), conflictual situations and the nearness of motor cars.

Analysis of the video pictures and the comments of the cyclists in discussions before and after the journey document how cyclists react to sudden changes of situation and what general strategies they follow. This analysis provides the best possible identification of factors which influence the behaviour of cyclists when road layouts change, and makes it possible to identify the constraints and difficulties facing cyclists, and to assess the role of infrastructure
and why cyclists take risks in certain situations.

The evaluations investigated for example the circumstances in which cyclists failed to stop at red lights or cycled the wrong way down one-way streets.

The observations showed that cyclists seek to progress efficiently and therefore to avoid stopping wherever possible. The most complex tasks for cyclists involved negotiating junctions, when they must at the same time absorb visual information and perform a variety of manoeuvres.

Further evaluation showed that cyclists use a variety of methods to pass a row of cars, and that they have to avoid more obstacles in dense town-centre traffic than in suburban areas: more double-parked vehicles, vehicles turning and buses stopping.

The results show that the behaviour of cyclists and the circumstances of the journey are linked. It is therefore advisable for all new road infrastructure measures to be assessed in terms of their impact on cyclists.

Report


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