Pedestrians’ Hazard Prediction (HP)  

Cyclists’ Hazard Prediction  

Vehicle Drivers’ Hazard Prediction  

CHANGE OF PERSPECTIVE APPROACH TO HAZARD PREDICTION ASSESSMENT AND TRAINING

Research Aims

This first study aims to ascertain whether Perception of Traffic Hazards improves with holistic training in the global understanding of traffic situations: training in hazard perception from the perspectives of various different road users.

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For a holistic understanding of the traffic situation, it is important that both the driver and other road users comprehend how all other road users will act. We therefore believe that training that manages to put the driver in the shoes of other users (as actor-observer) will enrich their awareness of hazardous situations that could arise, thus avoiding modal biases that might contribute to accidents.

A new traffic perception test with sub-modules of clips recorded from the perspectives of driver, pedestrian, and cyclist was developed.

Research Methods

Aims

Videos: Clips between 6 and 46 seconds long stopped immediately prior to the hazardous situation. Recorded from 3 different perspectives: Pedestrian’s HP, Cyclist’s HP, Vehicle Driver’s HP.

Procedure

Block 1: ASSESSMENT HP

10 PEDESTRIAN’S HP CLIPS

10 CYCLIST’S HP CLIPS

10 VEHICLE DRIVER’S HP CLIPS

10-MINUTE BREAK

Block 2: ASSESSMENT HP

Practice + Feedback & Training

(Please + Complete Clip)

10 PEDESTRIAN’S HP CLIPS

10 CYCLIST’S HP CLIPS

10 VEHICLE DRIVER’S HP CLIPS

Practice + Feedback & Training (Complete Clip)

Participants

Gender

Male (N)  Female (N)  Mean  SD

Pedestrians  13   11   23  8

Novice Cyclists  11   11   23  8

Experienced Cyclists  15   13   36  16

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Results

Test Type Hazard Prediction (HP)

Traffic User Hazard Prediction (HP)

Pedestrian HP  Cyclist HP  Vehicle HP

Point of view

Figure 1. The main effect of the HP Test Type was significant [F (2,170) = 16.354, p < 0.001].

Figure 2. The main effect of the Traffic User’s HP was significant [F (3,85) = 3.655, p < 0.016].

Figure 3. The main effect of the training/practice was significant [F (1,85) = 56.103, p < 0.001].

Hazardousness Ratings (Risk Estimations)

Figure 4 & 5. When analysing the Risk Estimation, the main effect of gender was significant [F (1,81) = 4.807, p < 0.01] & the interaction between the type of HP clip and the traffic user was significant [F (6,162) = 2.245, p < 0.05].

Conclusions

• Holistic training in hazard perception from the perspectives of different road users improves HP Performance.

• Vehicle drivers and cyclists show a higher HP performance.

• The Modal bias is only found in the risk estimations of Experienced drivers’ Hazardousness Ratings. They believe that the hazards recorded from the pedestrian’s perspective are the least hazardous.

• In addition, Experienced drivers’ ratings of the hazards recorded from the cyclist’s and the vehicle driver’s perspective are the highest.

• In addition, male estimations show the lowest hazardous ratings.

References


