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16. Abstract

The objective of this study was to provide information about drivers' needs and preferences for the characteristics of pedestrian detection systems that would be useful to the designers of cars and of pedestrian detection systems. In this study, we varied parameters that determine a pedestrian's path relative to a moving vehicle, and we collected subjects' responses to determine to what extent pedestrian alerts are likely to be perceived as important in various situations. In a laboratory setting, subjects were shown video clips of a pedestrian taken from a driver's point of view and were asked to rate how much a driver would need to monitor the pedestrian. Their subjective ratings indicated that, for pedestrians who are not moving toward the road, the subjective need to monitor pedestrians falls off sharply as a function of lateral distance from the edge of the road. The subjective need to monitor pedestrians who are crossing the road remains high even if their future path is such that by the time the vehicle crosses their path, the pedestrian has already completed crossing the road. Implications for the design of adaptive pedestrian detection systems are discussed.

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