

The Development of a United States Hazard Perception Test

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Background

- Hazard perception is defined as having situational awareness for dangerous situations in the traffic environment (Horswill & Mckenna, 2004)
- Around the world, hazard perception tests (HPTs) are being implemented for driver licensing purposes.
- HPTs have only been made in countries outside the United States, leaving the U.S. with no validated method to safely practice key hazard perception skills due to foreign tests being presented on the other side of the road
- This project proposes a US-localized HPT for use as a training tool for U.S. drivers. The current study examines a comparison of a foreign (non-localized) HPT to an HPT localized to environments typical for U.S. drivers.

Importance

Hazard perception has repeatedly shown to be a significant predictor of crash risk. Unlike previous studies on hazard perception, this test is fully web-based and presented through a Qualtrics survey. A main goal of this study was to examine the feasibility of a web-based HPT that doesn't require a controlled lab environment, so that people can take the test on their own time, wherever they like, to practice their hazard perception skills. In a way, we are looking to make hazard perception skill practice as widely accessible as possible no matter where you reside in the country.

Method and Development

Scenes were developed based on a validated Australian HPT to mimic the hazard type and driver setting. Wetton et al (2011) principles for developing an effective HPT were used as a guideline for creating the US-based version

Australian HPT (Non-localized)

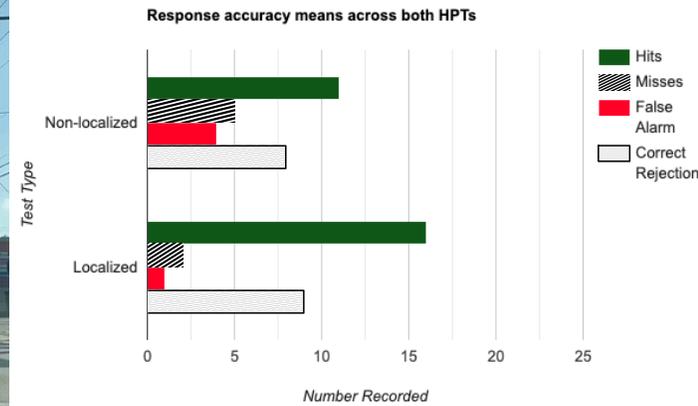


United States HPT (Localized)

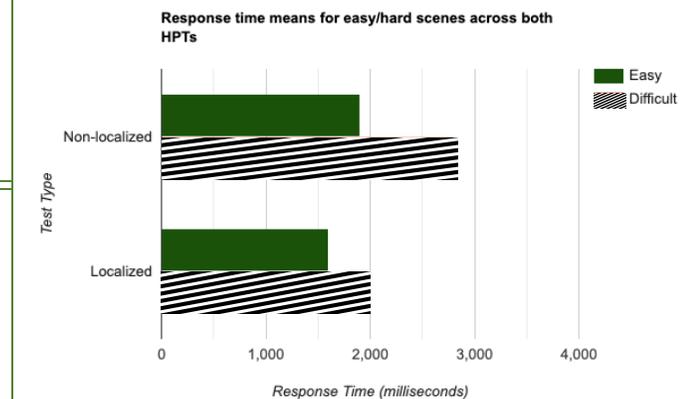


Hypothesized Results

H1: Non-localized scenes will produce slower response times and less accurate responses than that of the US-localized HPT



H2: Scenes considered "easy" will produce no significant differences in responding but scenes considered "difficult" will produce significant differences in response times and accuracy



Procedure:

150 participants will respond to 56 scenes, 28 from each condition. Participants will read a short one sentence description of the scene they are about to see and whether they are trying to make a certain maneuver. They then view a scene that will begin playing automatically and will be asked to make their keypress when they think they should respond. Upon making a response, participants will be redirected to a screenshot of the scene they just viewed and asked to select the area(s) they believe a hazard to be present. They will then describe the scene and why they responded the way they did.

Design:

- 2x2 factorial design

Test type (Localized and Non-localized)

x

Scene difficulty (Easy/Difficult)

Measures:

- Response time*
- Response accuracy*

*Measured through a combination of JSS, HTML5, and Qualtrics code