

# Usability and UX of a Gaze Interaction Tool for Front Seat Passengers

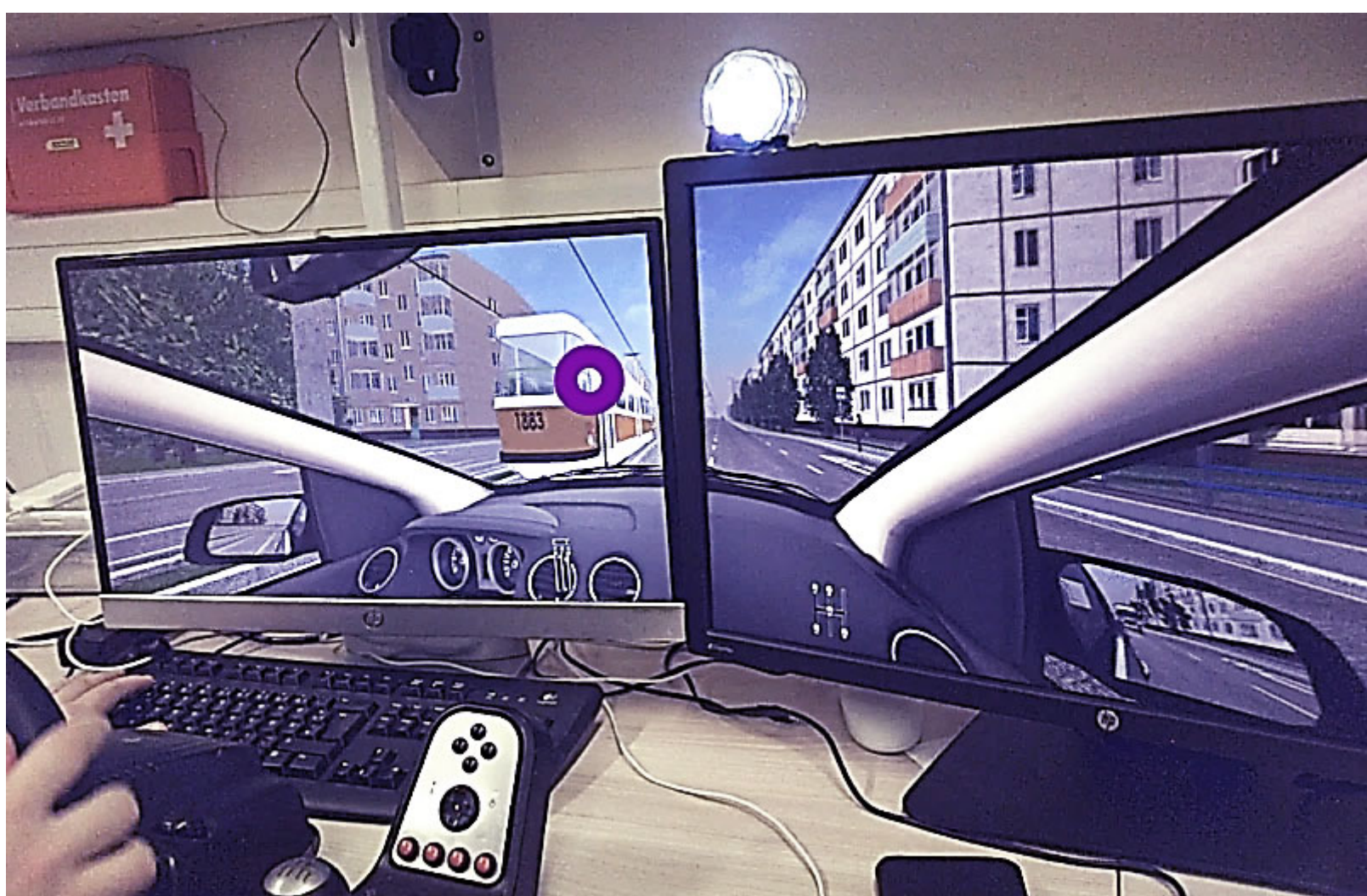
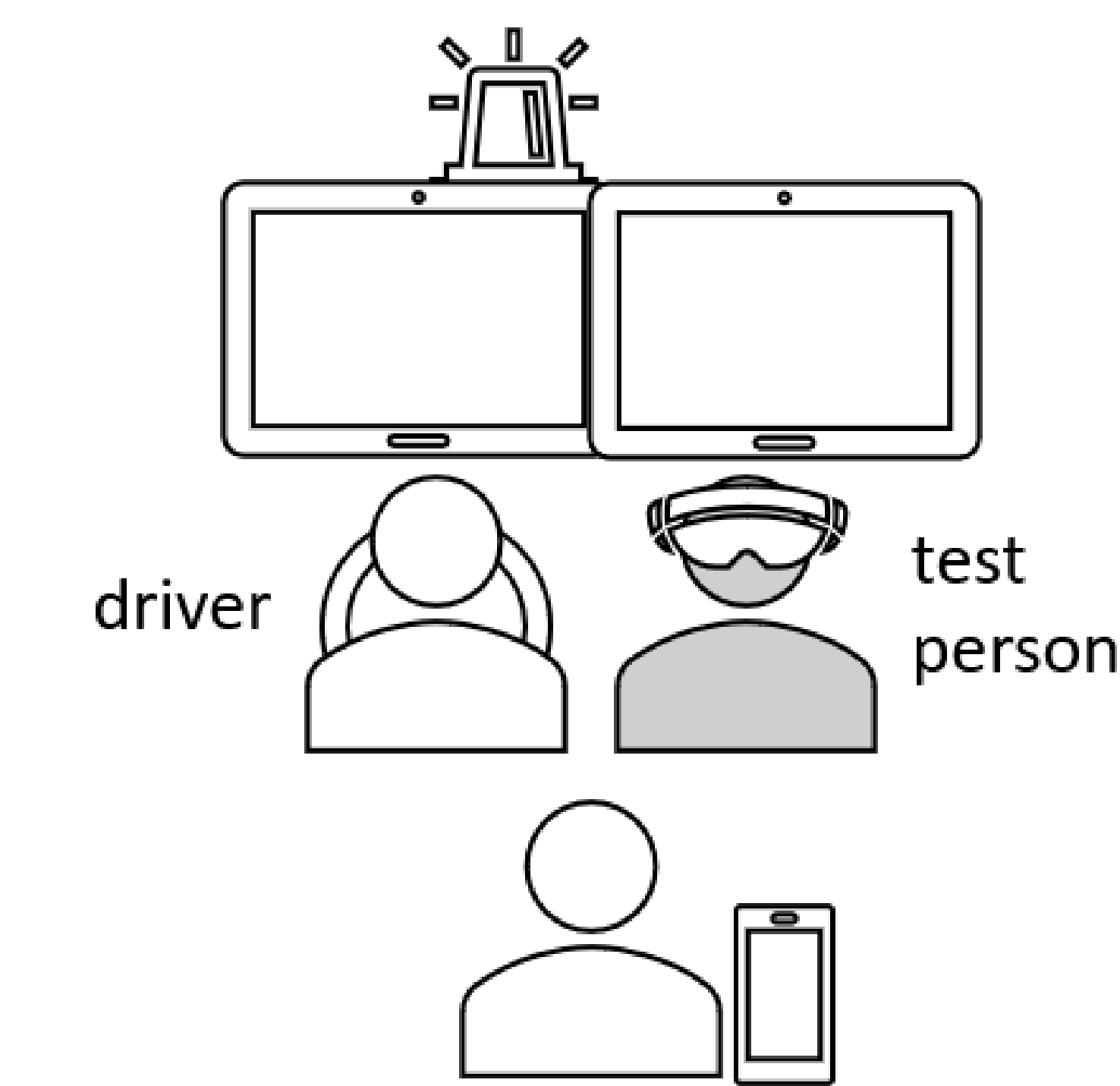
## Evaluation of a Gaze Controlled Optical Feedback System in a Car

Research Question	Method	Participants	Procedure
What are the front seat passengers' feelings towards gaze interaction, are they comfortable using it and do they think it is necessary?	Laboratory Experiment, collecting qualitative and quantitative Data using SUS [1] and CTAM [4]	13 student participants 8 male, 5 female aged 21-31	1. 15-minute simulation of a car drive 2. A semi-structured interview (qualitative) 3. Complete ATI, SUS and CTAM questionnaires (quantitative)

### Abstract

Input modalities generally as well as in cars are evolving quickly regarding their spread and reliability. One possible input technique would be gaze interaction, a topic still being researched. What are the front seat passengers' feelings towards gaze interaction, are they comfortable using it and do they think it is necessary? A laboratory experiment was conducted with 13 student participants, using a driving simulator, eye tracker, lamp and a driving wheel. Qualitative data was collected during and after the experiment through observation and a semi-structured interview. Quantitative data was collected through questionnaires (ATI, CTAM, SUS). The results were that the usability of the system was high, but participants didn't feel well using it.

### Setup



### Qualitative Findings

Positive Statements

trigger a light with gaze (6)  
communicate with driver non-verbally (3)  
ease of use (3)

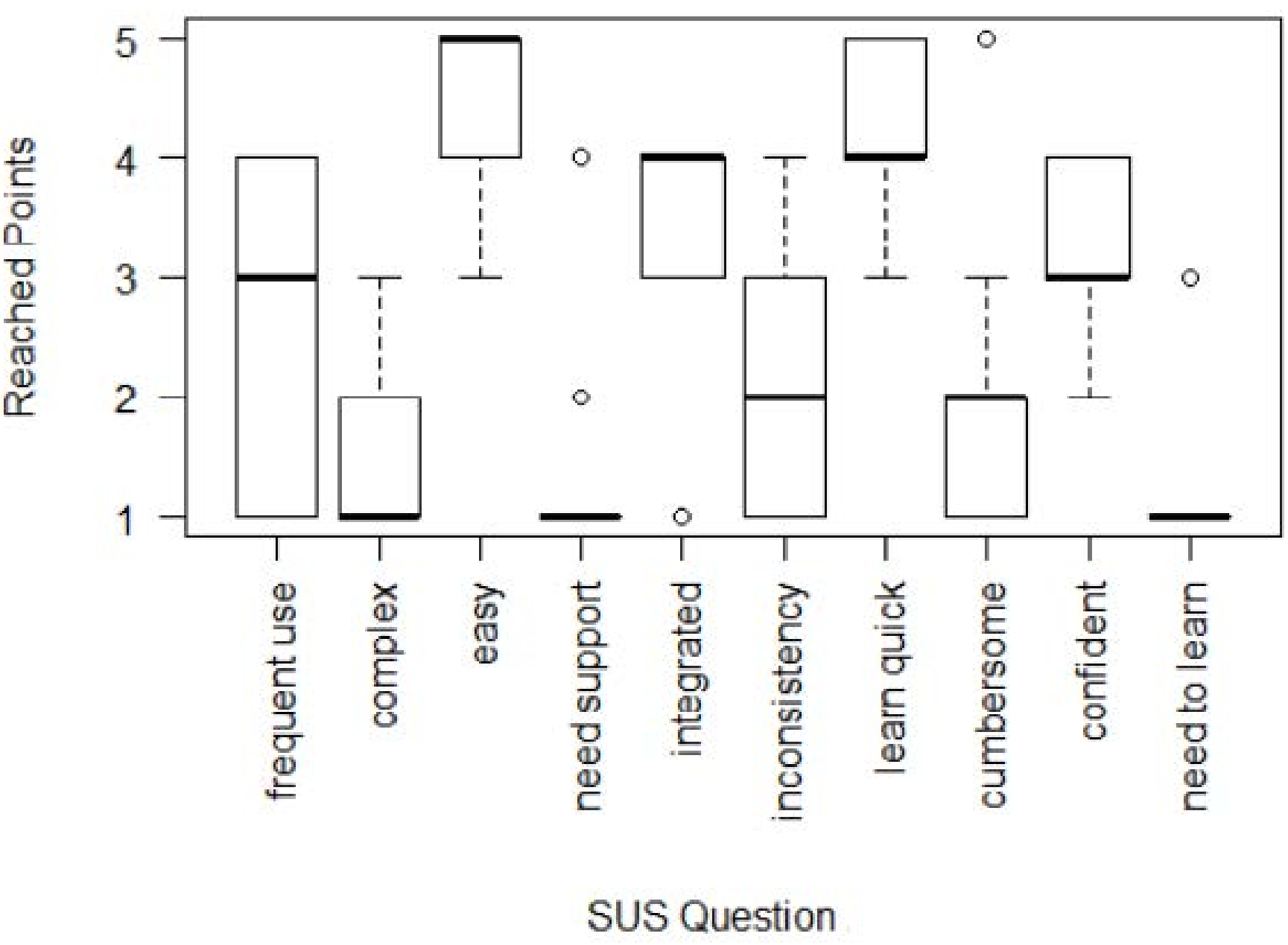
less likely to annoy  
when sitting in a car with an unknown  
less personal as verbal communication  
impression to not only increase the driver's safety, but also her own  
pleasant brightness

Negative Statements

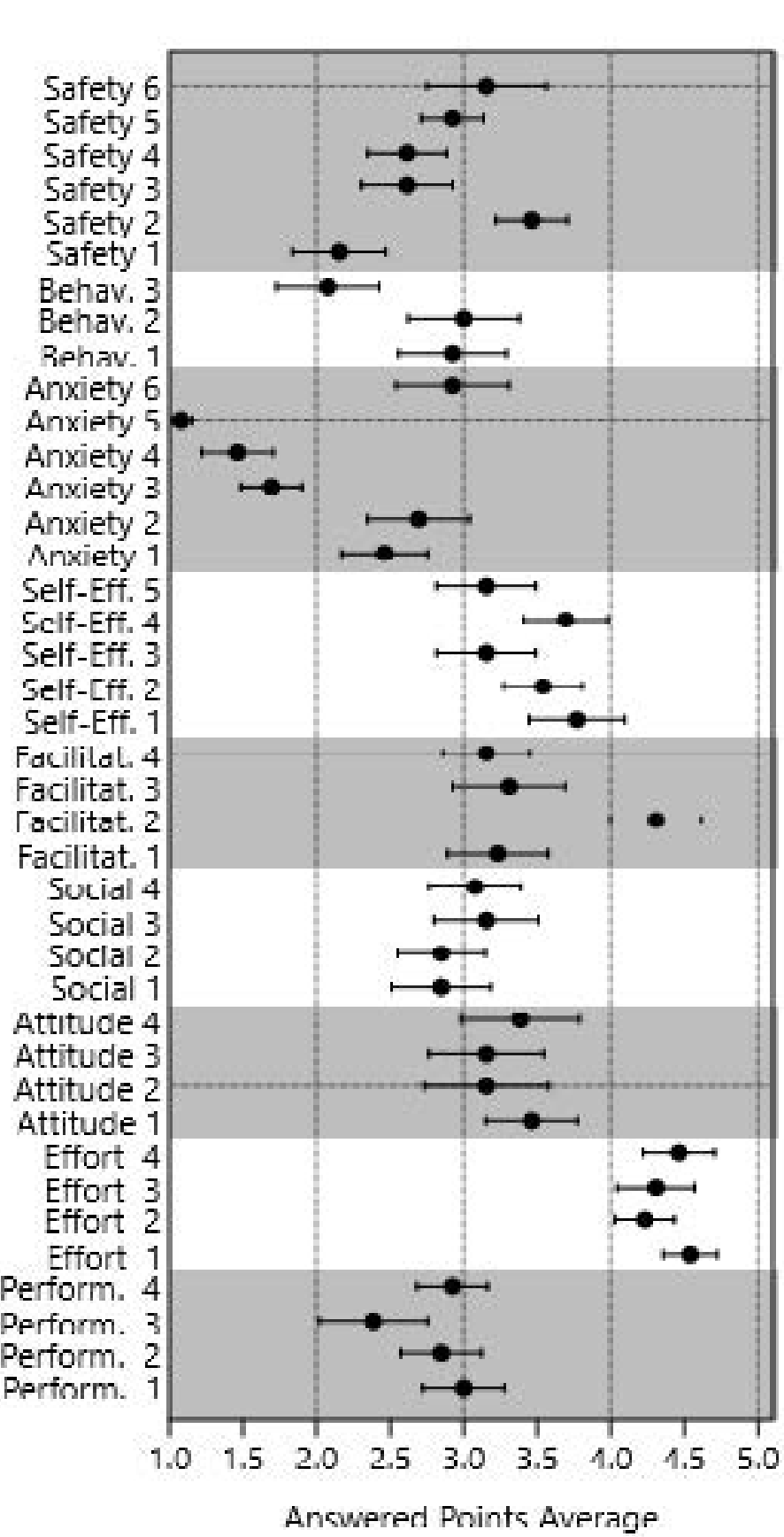
it is hard and counter-intuitive to look at a fixed point in the car, and not towards the approaching danger (4).  
distracts driver (3)  
restricts looking at speedometer out of interest (2)  
System could annoy the driver  
could unsettle driver

### Quantitative Findings

#### SUS-Results



#### CTAM-Results



### Conclusion

Trigger light with gaze   
Using speedometer as gaze activated trigger 