

Changes in trust after driving Level 2 automated cars

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OF TWENTE.**

Anika Boelhouwer, Tom Alkim, Willem Verwey, Marieke Martens

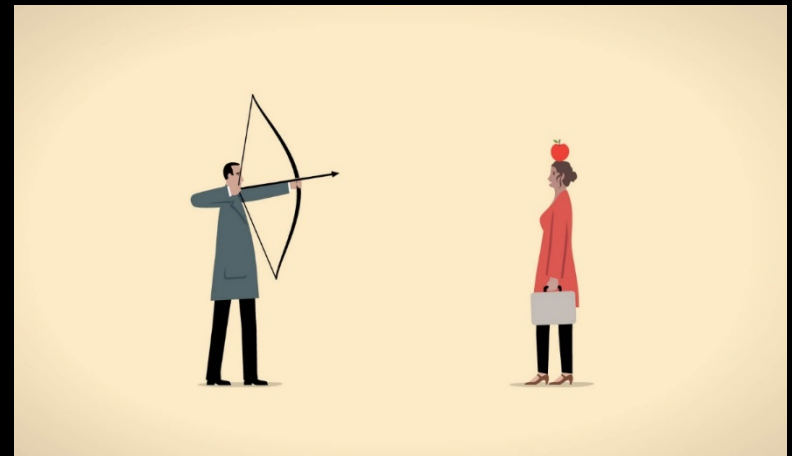
I-Cave Project (2016 – 2021)

Integrated cooperative automated vehicle

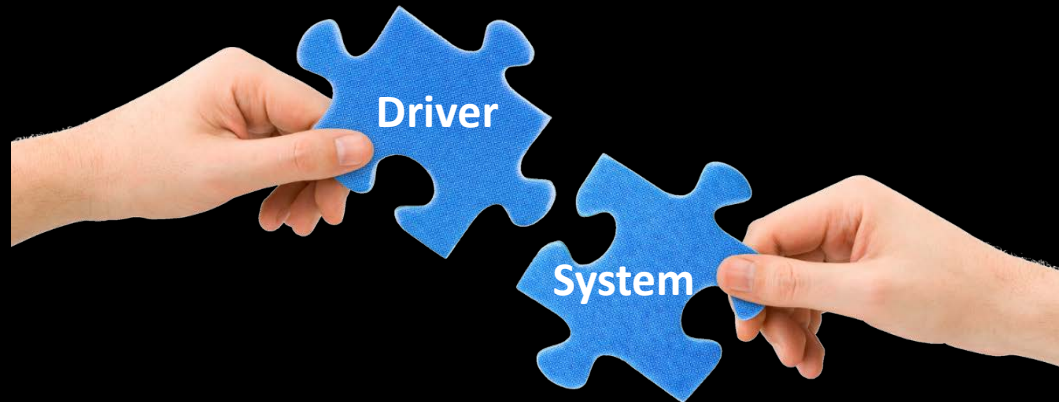
- PhD1 (Francesco Walker): Trust in automation
- PhD2 (Anika Boelhrouwer): Human Machine Interface
- PhD3 (Debargha Dey): Surrounding traffic



Trust is “the attitude that an agent will help achieve an individual’s goals in a situation characterized by **uncertainty** and **vulnerability**” (Lee & See, 2004)



Avoid **overtrust** and **undertrust**



Trust calibration

How does trust change after driving Level 2 vehicles?

- 5 driving sessions
- 145 participants
- Motorway, rural and urban roads
- 2 out of 6 vehicles



Q1: You are driving on a highway with an average amount of traffic. The system is set to automatically keep distance from the vehicle in front, and to keep within the lane



I trust that the system can handle the situation, thus, I do not need to take over control

1 ---- 2 ---- 3 ---- 4 ---- 5

N = 124

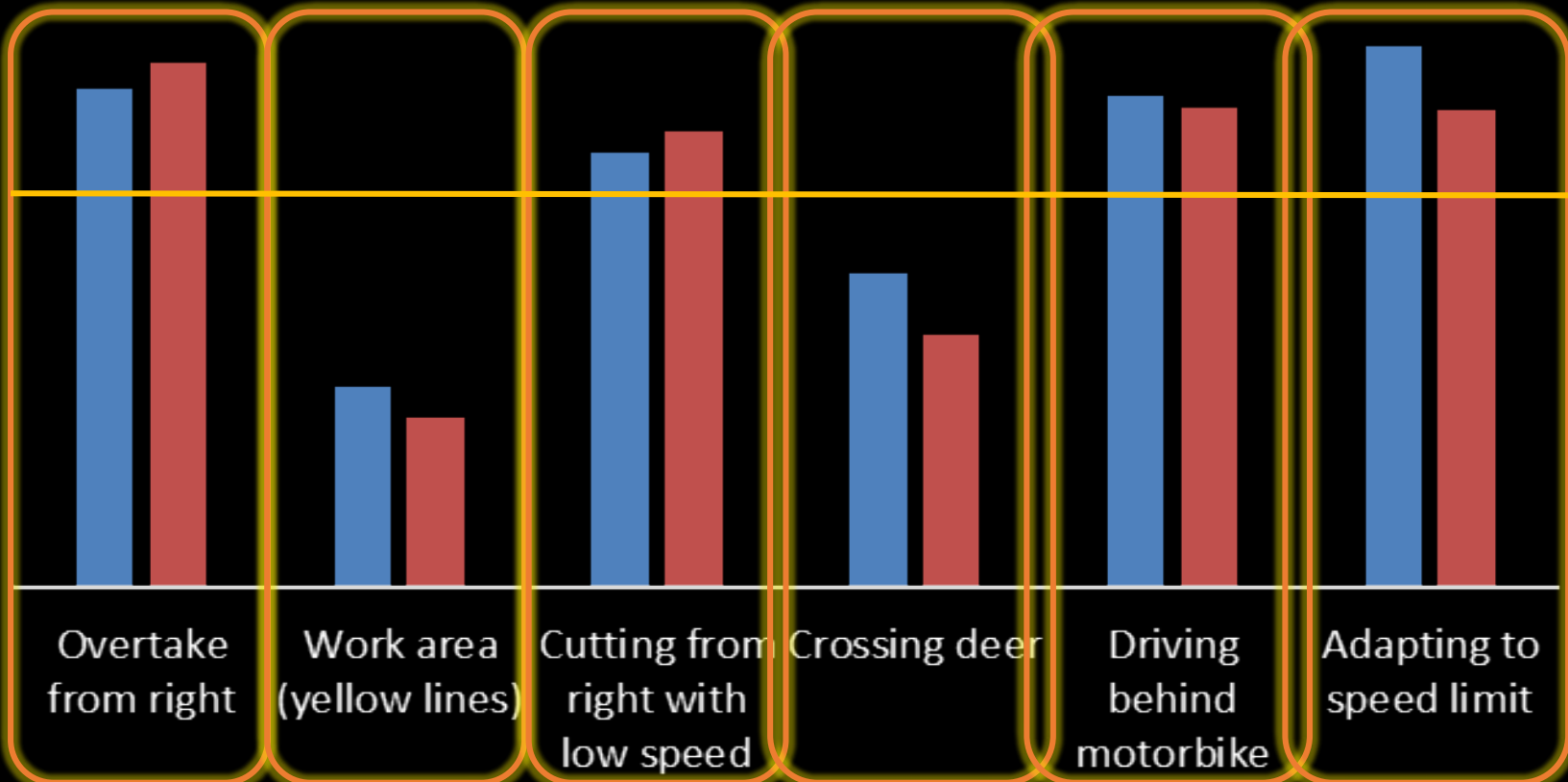
PRE
POST

Results



Trust (Likert Scale 1-5)

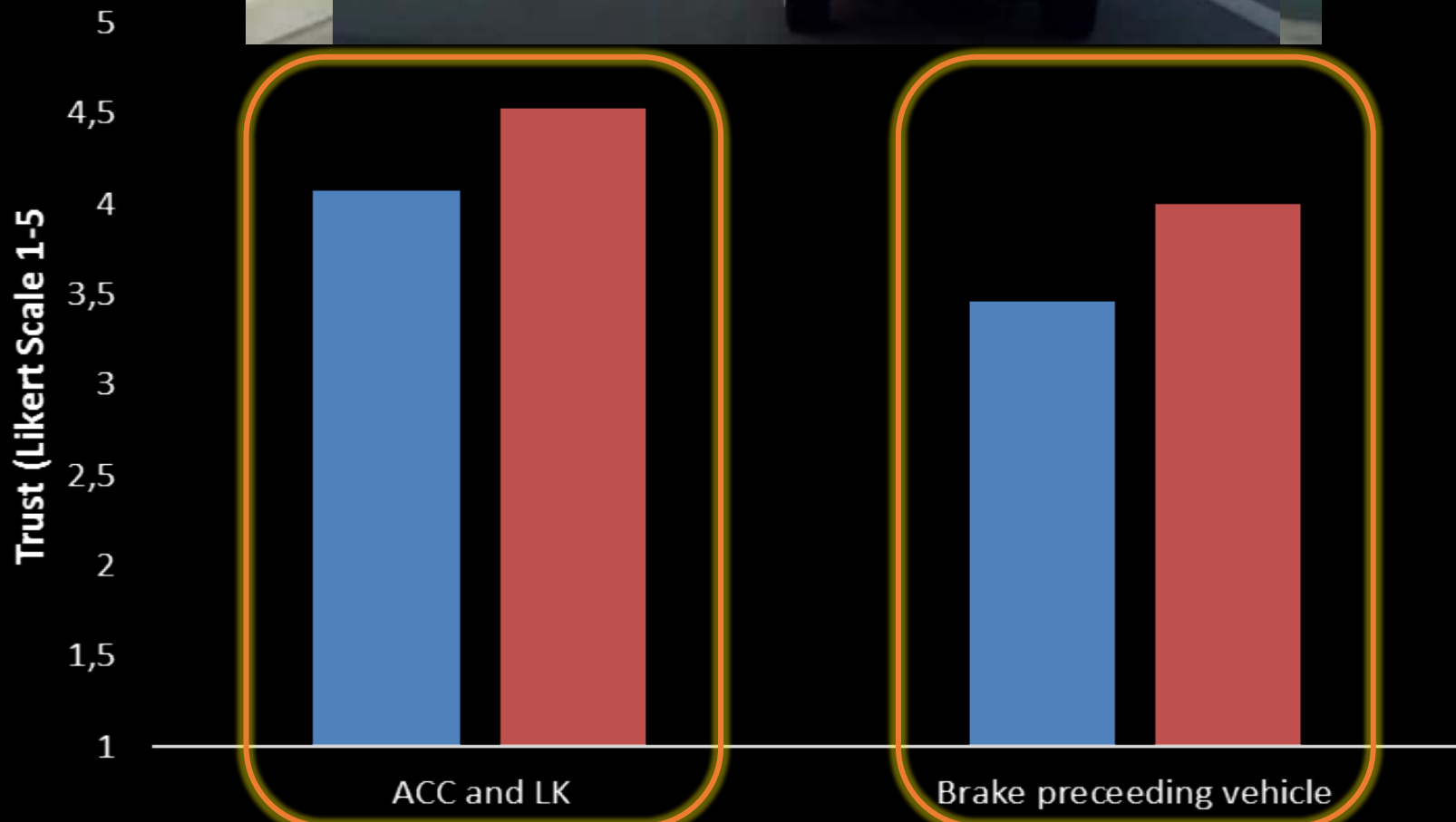
5
4,5
4
3,5
3
2,5
2
1,5
1



N = 124

PRE

POST

All p 's $\leq .001$ 

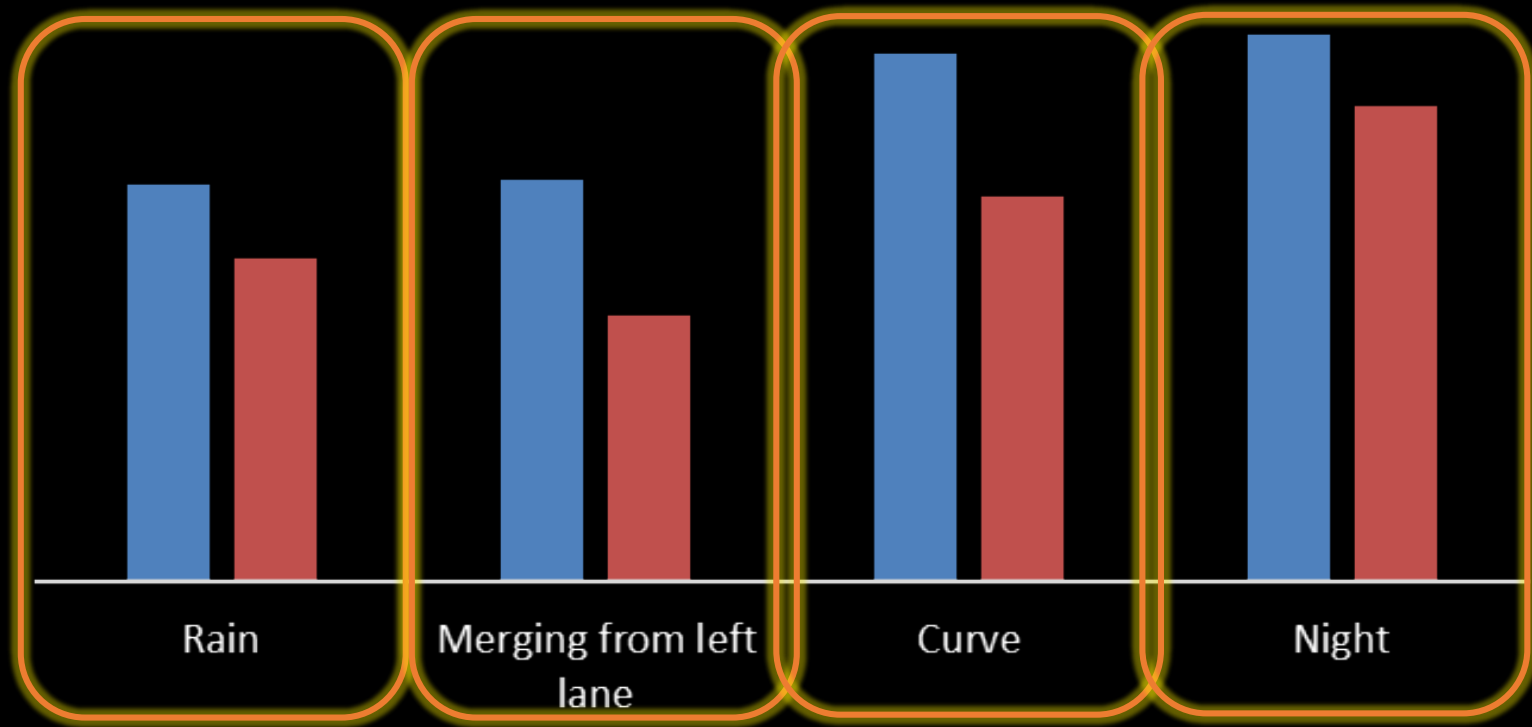
N = 124

PRE

POST

All p 's $\leq .001$ 

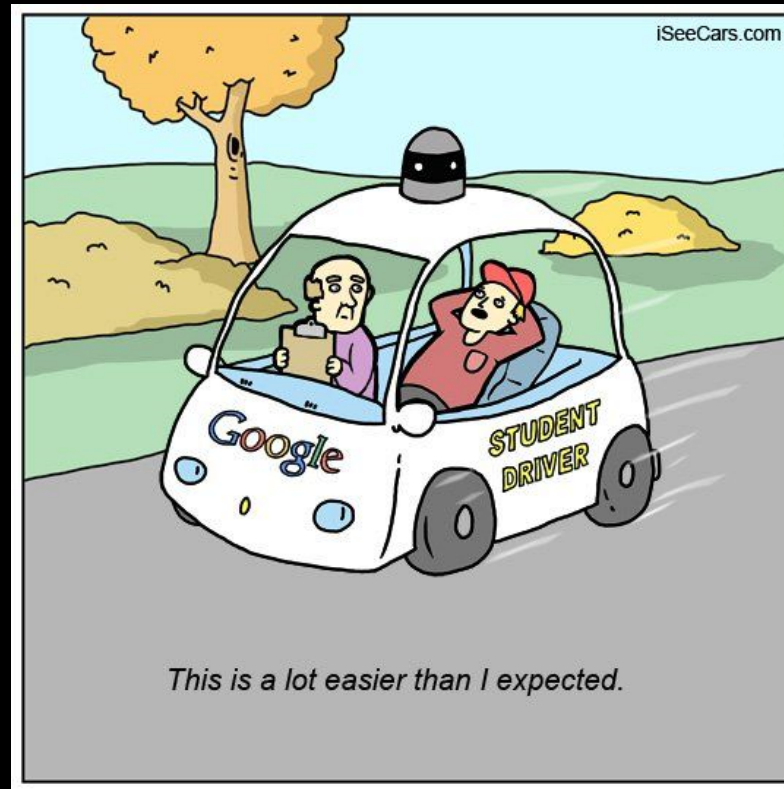
Trust (Likert Scale 1-5)



Trust changes after driving the vehicles



Questions?



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