

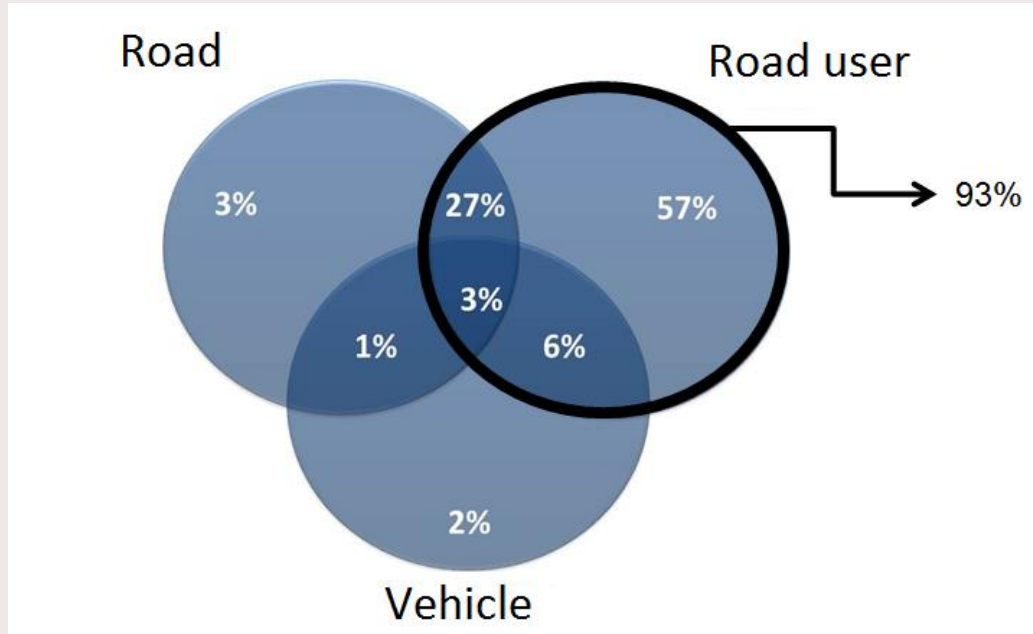


# Automated Driving and AI: a Human (road safety) Perspective

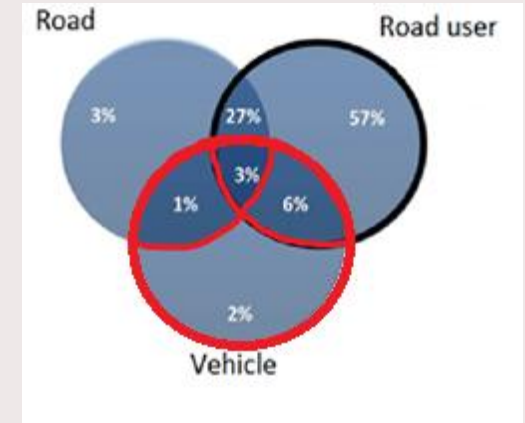
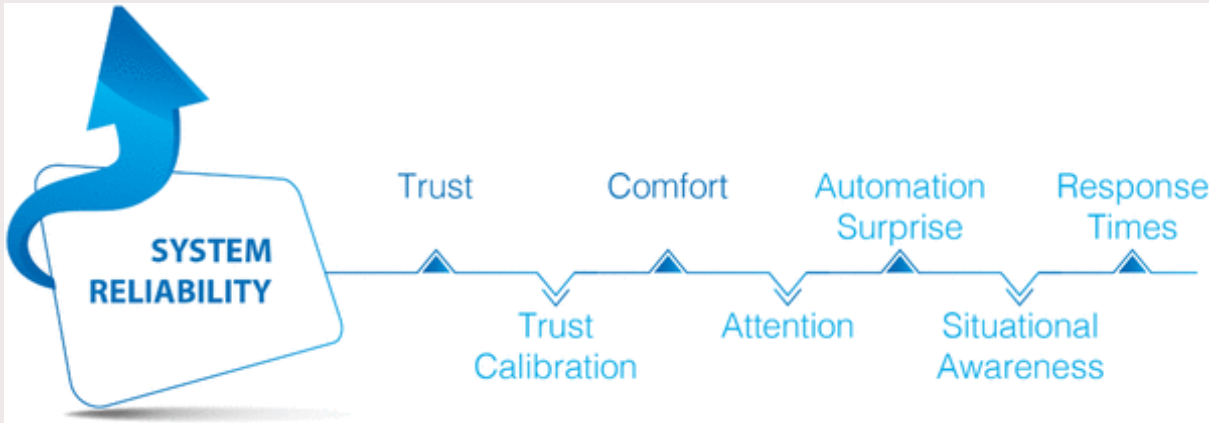
22<sup>ND</sup> OF APRIL 2021

Prof Dr Marieke Martens

# CAVs promise to road safety



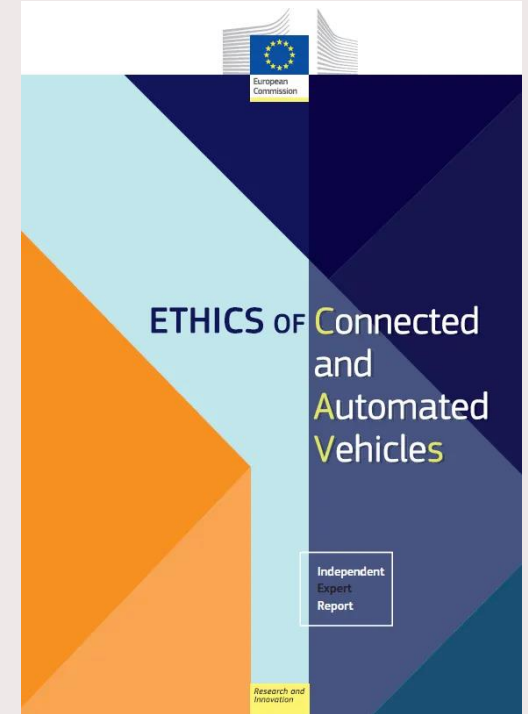
# Tendency is to ONLY improve technology



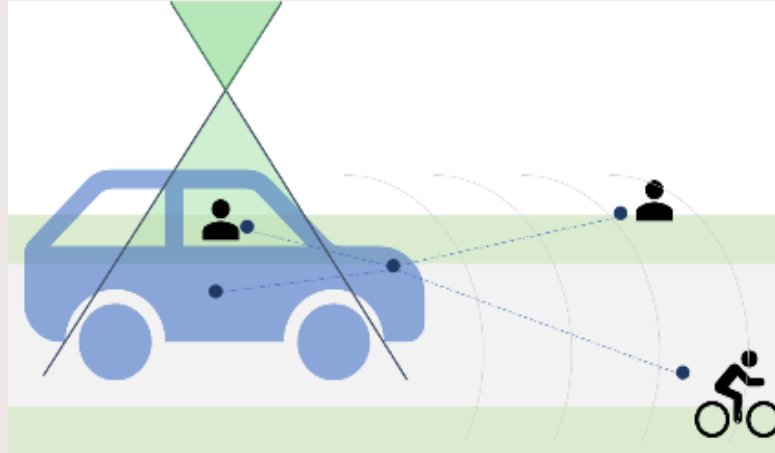
Carsten & Martens, 2019



# Do we still need to talk about humans?



# Road safety needs a system approach



How safe is the car?



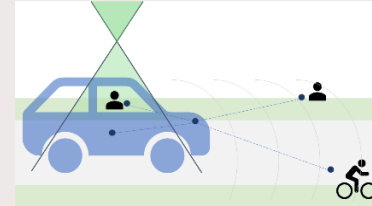
How safe is this car with these specific functionalities with this driver in this specific context within the entire traffic system?

# My 6 recommendations

1) Automation should only be offered if reliable for an extensive period of time

- Self-awareness of vehicle
- Clear responsibility 'who is driving', human or car?

2) Predictability of actions CAV for humans (inside and outside the car)



3) Large potential for AI for driver state monitoring and prediction

- Visual attention
- Trust calibration (under or overtrust)
- Predict TOTs and driver readiness (no sudden take-overs!)



# My 6 recommendations

4) Invest in AI for intent prediction (estimating what others will do)



5) Demand that 'AV+driver' is safer than 'driver' only

from: Automate what is easy and leave the difficult immediate things to the driver

to: Automate what is difficult or boring/easy

6) Governmental bodies should set Ethical Goal Functions for CAVs (e.g. EC, UNECE WP1)

- AI Safety: AI cannot derive human values from (loads of) data

- CAV developers ask for guidance