Automated Driving & Human Interaction
A road safety perspective

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If Human Error is the problem to road safety...
Is Automated Driving the solution?

TESLA BEGINT UITROL FULL SELF-DRIVING-SOFTWARE

Robot take the wheel: Waymo has launched a self-driving taxi service

Honda wins world-first approval for Level 3 autonomous car
Current reality

New studies highlight driver confusion about automated systems

June 28, 2019

RELATED
Is automation intended?
June 20, 2019

What’s in a name of the use of automation?
Research paper

Effects of traffic on Level 2 driving
Research paper
We still blame the human!
Tendency is to improve technology as solution
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?
So do we still need to talk about humans?
Lot of research! Not just an opinion.
My main recommendations

1) Demand that ‘AV+driver’ a safer than ‘driver’ only
   - Do not make the driver responsible for what they cannot do
   - Reverse the current approach:
     from: Automate what is easy and leave the difficult immediate things to the driver
     to: Automate what is difficult or boring

2) Support should feel like support and not like automation:
   - Make it feel like unreliable automation
   - Monitor the driver for visual attention

3) Do not count on ‘instructions’: Informing the driver only holds limited results
My main recommendations

4) Automation should only be offered if reliable for an extensive period of time
   - Clear responsibility ‘who is driving’, driver or the car?
   - Self-awareness of ODD: geofencing?
   - Planned transitions of control, no sudden handovers!!
   - Clear symbols: ISO SC29/WG5: no consensus for years

5) Demand predictable behaviour of the vehicle and blend in with traffic and pedestrians

6) Consider revision of traffic rules and investigate how AVs could break traffic rules in order to improve road safety

7) Governmental bodies should set boundaries for Ethical Goal Functions for AI for AVs