Putting People into Driverless Vehicles

Dr Debbie Hopkins
University of Oxford
Debbie.Hopkins@ouce.ox.ac.uk
twitter: debbiehopkins_
Starting Point:

**Q1:** What are the (transport) problems that need to be solved?

**Q2:** (How) can socio-technical innovations help to resolve these problems?
Q1: What are the (transport) problems that need to be solved?
Socio-technical responses
Socio-technical System of Transport

- Vehicle (artefact)
- Culture and symbolic meaning
- Infrastructures (e.g. lights and signs)
- Regulations and policies
- Maintenance and distribution networks
- Industry structure (e.g. manufacturers, suppliers)
- User practices (e.g. mobility patterns)
- Fuel infrastructures
Theories of Socio-Technical Transition

Alignment of ongoing processes in a socio-technical regime
AUTOMATED VEHICLE INNOVATION
A Short History of Automated Vehicle Innovation
Automating Passenger Vehicles

Automating Goods Vehicles
Levels of Automation

- 0: No Automation
- 1: Driver Assistance
- 2: Partial Automation
- 3: Conditional Automation
- 4: High Automation
- 5: Full Automation

- Full Manual
- High Manual
- High Manual
- High Manual
- Partial Manual
- No Manual
A Socio-Technical Question

Automated vehicles expose questions of technological innovation, but also regulatory and legal, insurance, infrastructural, societal/behavioural innovation too.
DEMONSTRATIONS AND TRIALS
Why is the UK interested in Automation? [i]
Why is the UK Interested in Automation? [ii]
Demonstrating Automated Technologies [i]

Urban pavements
Demonstrating Automated Technologies [ii]

Urban roads
Demonstrating Automated Technologies [iii]

Inter-urban and motorways
Innovation Pathways

A - linear
B - leap-frog
C - Spatially diffused
AUTOMATION IN CONTEXT
Socio-Technical System of Automated Mobility

- Vehicle (artefact)
- Culture and symbolic meaning
- Infrastructures (e.g. lights and signs)
- Maintenance and distribution networks
- Regulations and policies
- Industry structure (e.g. manufacturers, suppliers)
- User practices (e.g. mobility patterns)
- Fuel infrastructures
A ‘Shared’ Automated Mobility Future

An ‘Electric’ Automated Mobility Future

Source: http://josh-ua.co/blog/2014/12/18/experimental-electric-driverless-car-design
Professional Drivers in Automated Mobility

Source: https://www.ottomotors.com/
Environmental

Depends on fuel/ power trains and efficiencies.

Social

Depends on implementation pathways, access, costs.

Economic

Depends on business models, ownership models.

Health

Depends on practices and sites of automation.

Will Automated Vehicles Solve Problems?
Automation may be part of our mobile future, but it is unlikely to solve all transport problems.

Will automated vehicles transform/ reconfigure the mobility system? Or will it replicate/ exacerbate current structures (including problems)?

How will automated vehicles complement or compete with current transport provision? And what will the implications be for public health, emissions, access, and social inclusion?
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