ECF gratefully acknowledges financial support from the European Commission.

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Opportunities and threats of autonomous vehicles to other modes in urban areas

Ceri Woolsgrove, ECF, Dublin, 2019

ECF - What we do

Advocating for cycling with institutions world wide

Implementing change through projects and exchange platforms

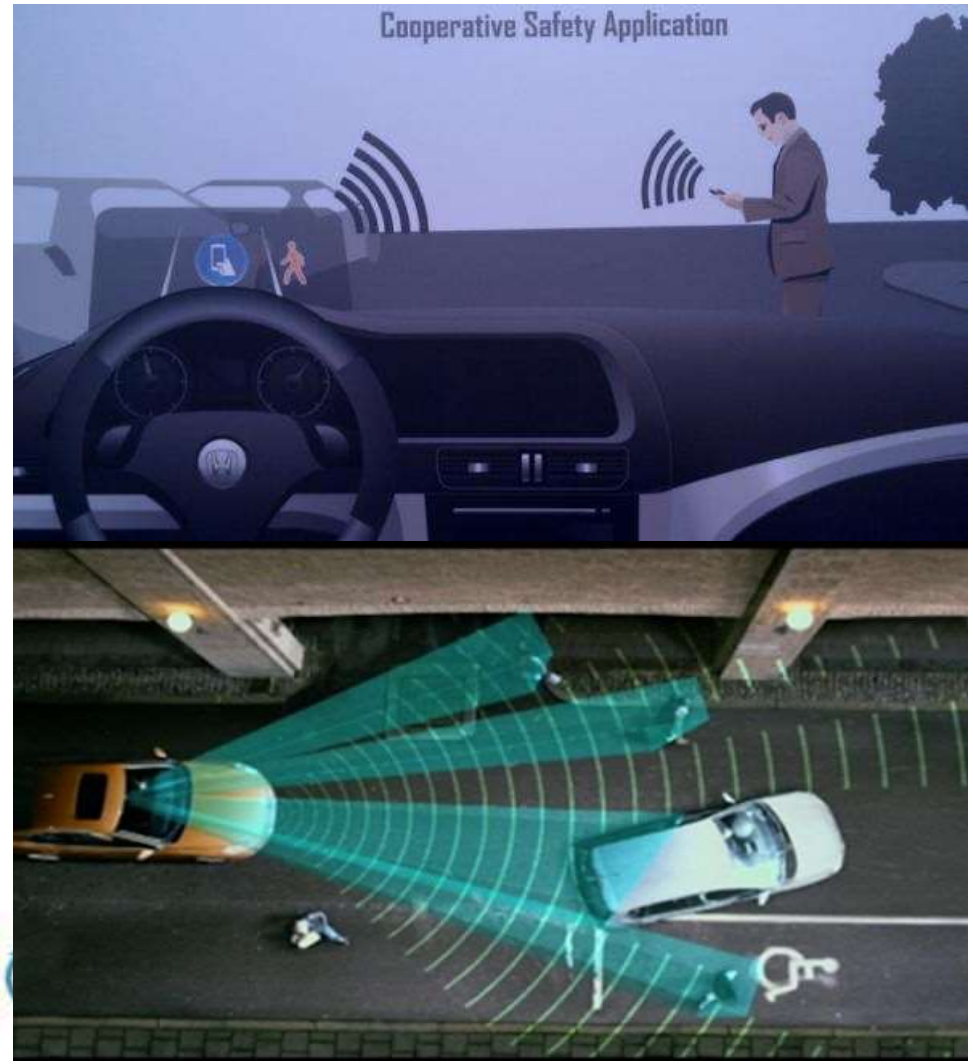
Producing factual evidence on cycling


AVs - Its all good!

- “Driverless cars will reduce accidents by around 90 per cent and pollution”
- “Carbon emissions will drop, because urban driverless cars will be electric”
- “The old, the disabled and teenagers will suddenly gain mobility”
- “Driverless cars will hardly ever need to park, and certainly not in city centres”
- “Congestion will diminish, as driverless cars can drive in dense packs, won’t get lost and won’t have to circle around looking for parking”
- “Once driverless cars spread beyond urban centres, the tedium of commutes will go”

AV opportunities for active modes

- Safety programmed into vehicles
- Distraction/speeding/Drink driving a thing of the past?
- Traffic management (giving advantages to other modes) - Congestion busting possibilities
- Better public transport, less motorised transport more space for walking and cycling








0	1	2	3	4	5
No Automation	**Driver Assistance**	**Partial Automation**	**Conditional Automation**	**High Automation**	**Full Automation**
Zero autonomy; the driver performs all driving tasks.	Vehicle is controlled by the driver, but some driving assist features may be included in the vehicle design.	Vehicle has combined automated functions, like acceleration and steering, but the driver must remain engaged with the driving task and monitor the environment at all times.	Driver is a necessity, but is not required to monitor the environment. The driver must be ready to take control of the vehicle at all times with notice.	The vehicle is capable of performing all driving functions under certain conditions. The driver may have the option to control the vehicle.	The vehicle is capable of performing all driving functions under all conditions. The driver may have the option to control the vehicle.

Most here Hands Off Eyes off Mind off

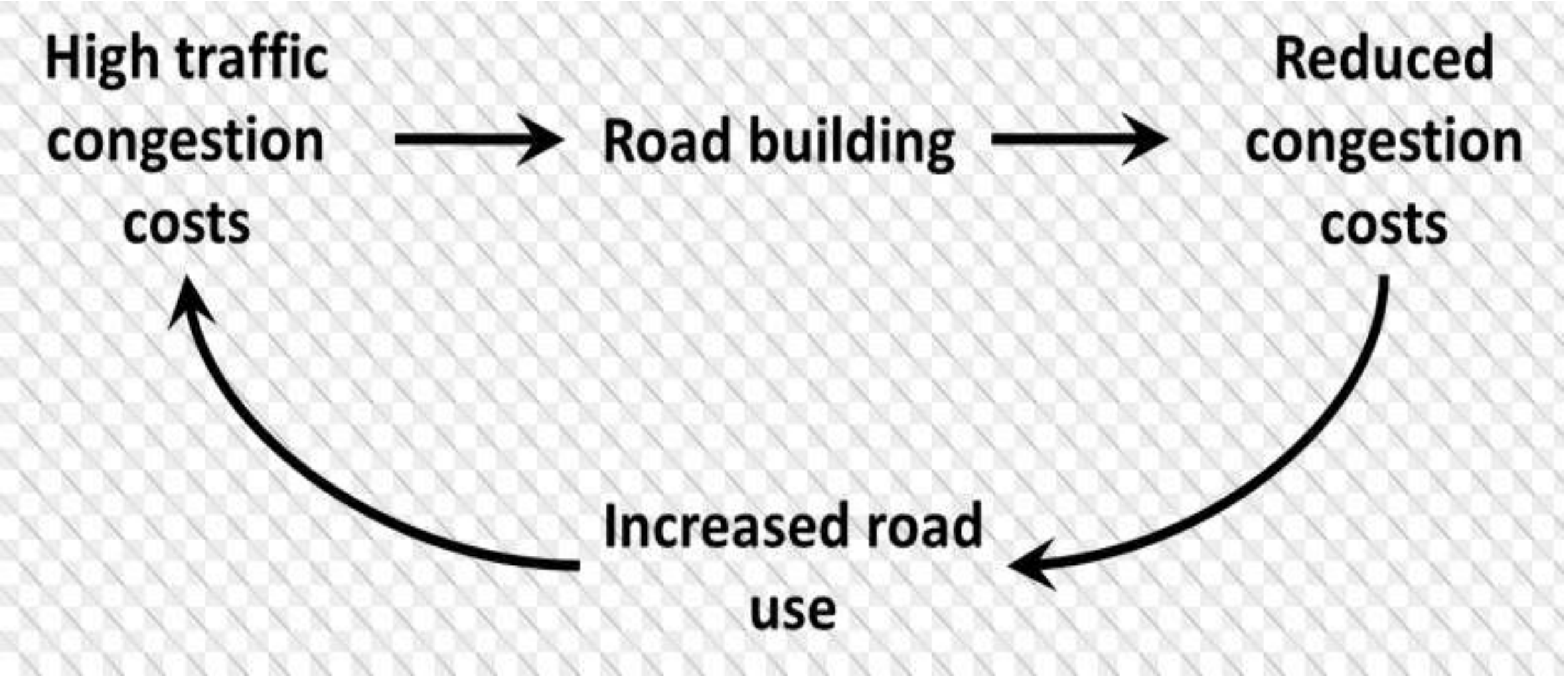
Reframing Cycling/Walking as ‘a problem to be solved’

“One of the biggest problems is people with bicycles. The car is confused by [cyclists] because from time-to-time they behave like pedestrians and from time-to-time they behave like cars. They [cyclists] don't respect any rules usually.“ (Renault chief executive Carlos Ghosn)

Congestion solved?

- Currently 70% of cars with one driver. What happens with zero?!
- Parking solved? Possibly but increased empty running
- Parking charges ended – less money for PA's

Congestion – induced demand



Locking in sprawl and passive transport

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AVs, MaaS, and the threat to public transport

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Safety - is it solved?

- Over reliance of semi autonomous systems distraction etc. how does the driver come back to the driving task if there are any autonomous elements
- Good type approval is necessary. This will require regulation!
- “Behavioural regulation also necessary
- We need to be sure that the driver knows and understands the limitations of the vehicle
- Good communication between driver vehicle HMI
- Still huge unknowns!!!

Concentrate on the known knowns!

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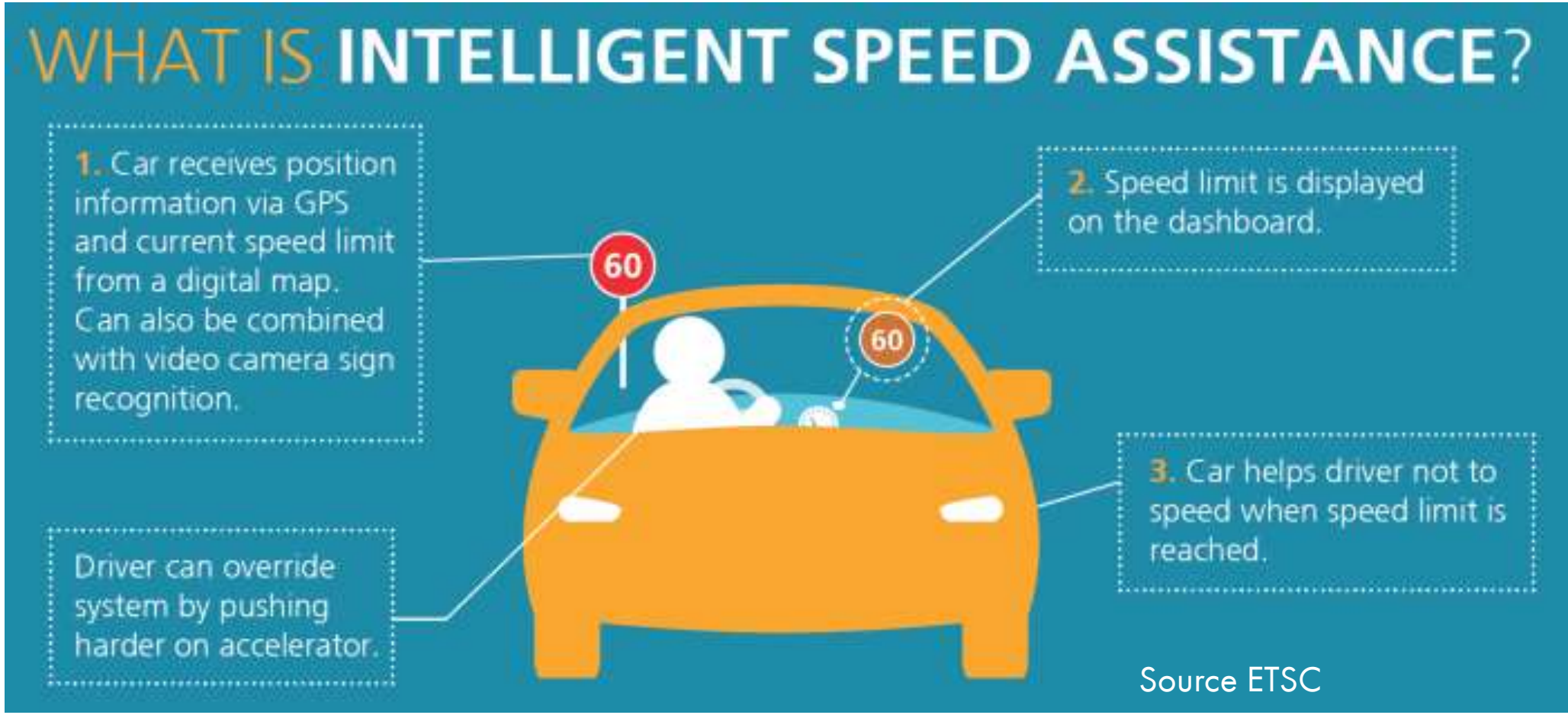
Intelligent Speed Assistance



Source WABCO

Other GSR technologies

- Event Data recorder
- Distraction/drowsiness detection
- Autonomous Emergency Braking to stop crashes with cyclists and pedestrians
- Tyre pressure monitors
- Standard alcolock fitment

AV/transport policy will have to take into account

- Increasing urban populations
- Increase in transport services
- Decrease in car ownership to cycling/walking/PT
- Cities want to tackle air pollution, increase active modes and PT, and decrease congestion; liveable cities. How do AVs help here?
- For future trends and AV research what we need to know
  - Effects on modal shift from active modes
  - How many less vehicles on the roads?
  - How many more vehicle miles?
  - How many zombies?
  - Effects on Public transport (and public ability to control transport in the city?)
  - Should/how public authorities intervene?
  - Impact of semi-autonomous stages
  - How to regulate for safety

Conclusion

Policies should prioritize human mobility and community liveability over vehicle mobility. Communities should be designed for people, not vehicles; AVs should serve the community, rather than the community serving AVs

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Thank you

www.ecf.com

Ceri Woolsgrove, ECF, Dublin Velo-city