



Priorities for research and countermeasures

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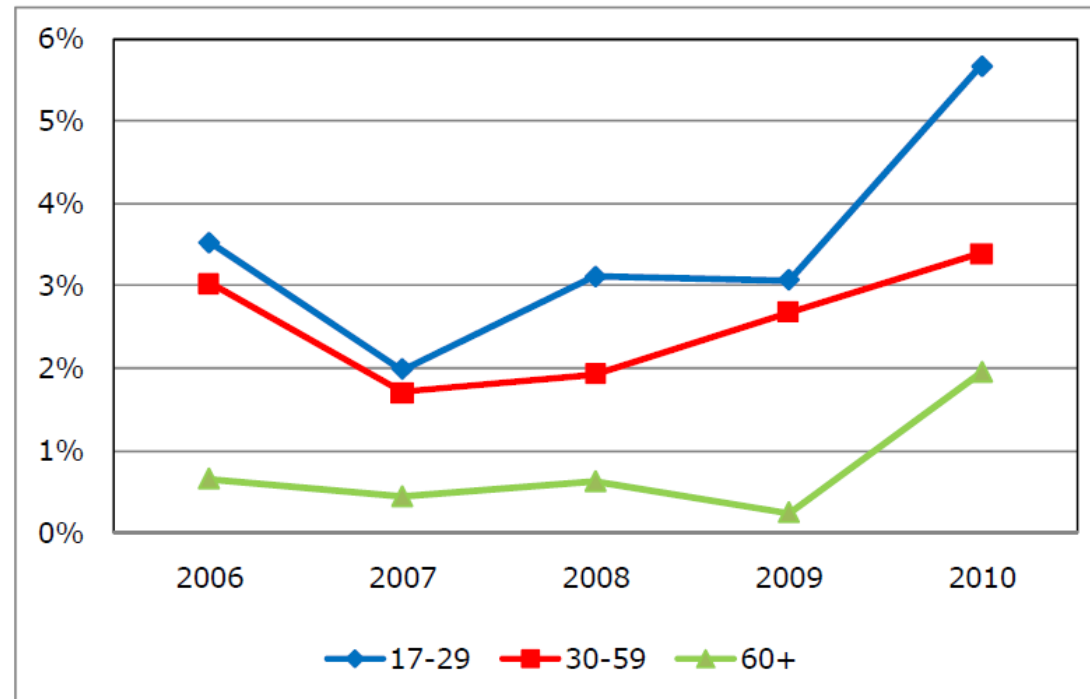
The “E”s of road safety

Evidence
Education
Engineering
Enforcement
Evaluation

Mobile phone use - UK Surveys

- TRL surveys for Transport for London (33 sites) and for Department for Transport (30 sites in SE England)

Hand held mobile phone use by male car and taxi drivers in London by age

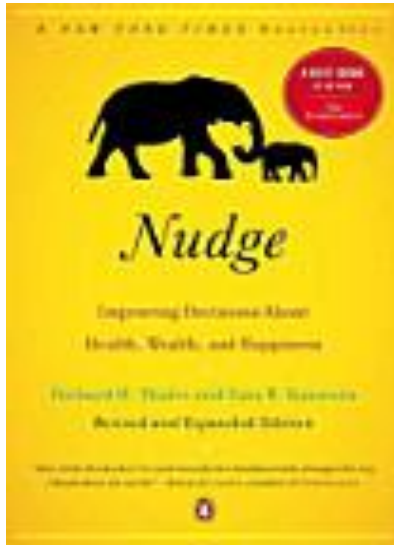


Legislation and Enforcement

- Legislation targetting design (e.g. UN/ECE) can be effective and can be enforced - but **voluntary agreement is still quicker and more flexible**
- Legislation targetting behaviour (e.g. fines for hand-held phone use) is probably **not effective as a long-term measure**
 - Even severe measures unlikely to deal with a “hard core” – that’s behavioural
- Also, it’s not going to happen ... in the UK or, indeed in Europe, for the foreseeable future:
 - Complexity of Member State provision
 - Safety as a National competence
 - UK policy ...



Nudge Agenda The gentle power of “choice architecture”



- Virtually all public policy is concerned, at least to some extent, with changing people's behaviour
- Richard Thaler & Cass Sunstein:
 - Behaviour is not entirely rational and can be influenced



- UK Government “Behavioural Insights” team:
 - Policy-makers are systematically considering how to influence the way people behave without significantly reducing individuals' ultimate **freedom to decide for themselves**

“Nudge” examples in transport

- Painting white lines/rumble strips closer together on approach to junction gives impression of increasing speed
- Euro NCAP crash rating of vehicles



- Application to distraction & inattention:
 - Company policy on in-vehicle equipment use
 - Industry led guidelines for design
 - Design and integration of devices
 - Consumer rating of in-vehicle devices

Research and Countermeasures

– where we (I) should concentrate our (my) efforts:

- Design guidelines**
- Consumer rating scheme**

European Statement of Principles (ESoP)

- EC Commission
“Recommendation”
- Voluntary, relatively high-level principles
 - Balanced risk/benefit approach
 - Not constraining design options



Advances in technology

- Head-Up displays
- Control integration
- Nomadic devices
- Device integration
- Touchscreens



Rear-view camera display



Integrated satellite navigation system

Developing the ESoP as a design assessment checklist

- Excel Spreadsheet for PC, tablet etc.



- Supportive Information for each question is available via a 'help' icon
- Assessment Summary Sheet is automatically populated based on the data entered

Part A - Installation

A8

Is physical and visual access to primary driver controls free from obstruction by the IVIS and its mounting?

?

The IVIS does not interfere with normal leg, hand and arm movements.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with use of the accelerator, brake or clutch.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with the use of the steering wheel.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with the direction indicators or windscreen wipers.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with the use of the lights.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with the use of the horn.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with use of the gear lever.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with use of the parking brake.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with the use of the hazard warning lights.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A
The IVIS does not interfere with the use of the de-mister controls.	<input type="radio"/> True <input type="radio"/> False <input type="radio"/> N/A

Answer

☐ None
 ☐ Minor
 ☐ Serious
 ☐ N/A

Comment

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Ref: Checklist for the Assessment of In-Vehicle Information Systems
by A Stevens, S Cynk TRL Published Report MIS005

Where quantitative methods may be required

- **A2 Is the IVIS securely fitted?** (ESoP Installation principle I: *The system should be located and securely fitted in accordance with relevant regulations, standards and manufacturers' instructions for installing the system in vehicles*).
- **A10 Is the IVIS visual display positioned close to the driver's normal line of sight?** (ESoP Installation principle IV: *Visual displays should be positioned as close as practicable to the driver's normal line of sight*).
- **B1 Are messages presented visually simple?** (ESoP Information presentation principle I: *Visually displayed information presented at any one time by the system should be designed in such a way that the driver is able to assimilate the relevant information with a few glances which are brief enough not to adversely affect driving*).

B1	Are messages presented visually simple?					
	The IVIS avoids the use of long messages.	TRUE/FALSE/N/A				
	Each message is distinct from others.	TRUE/FALSE/N/A				
	The meaning of the message is clear.	TRUE/FALSE/N/A				
	Information presented by visual and other modalities is consistent.	TRUE/FALSE/N/A				
	<table><tr><td>None</td><td><input type="checkbox"/></td></tr></table>	None	<input type="checkbox"/>	<table><tr><td>Minor</td><td><input type="checkbox"/></td></tr></table>	Minor	<input type="checkbox"/>
None	<input type="checkbox"/>					
Minor	<input type="checkbox"/>					
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In-Vehicle Information System (IVIS)

Rating scheme for consumers

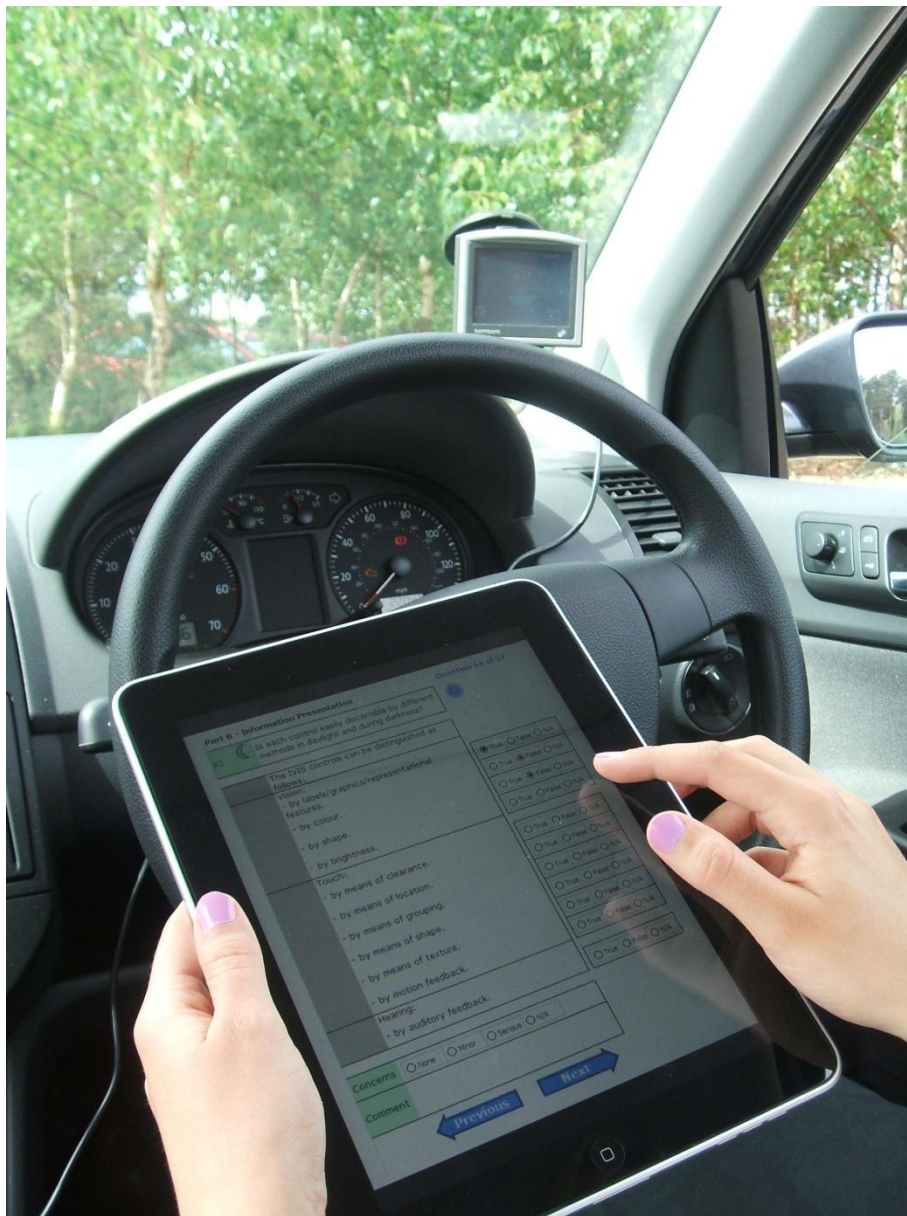
- Scheme requirements:
 1. Accepted as valid
 2. Sensitive to variations
 3. Readily available and durable materials
 4. Not time consuming
 5. Trained evaluators
 6. No scope for interpretation
 7. Robust
 8. Room for improvement
 9. Clear and understandable rating
- Trust in the development and delivery process
- **Elements.** Which elements are included within the rating? (E.g. all Checklist questions)
- **Scoring.** How are the individual elements scored? (E.g. +3/0/-3 or 1-10)
- **Weighting.** How are the individual elements weighted? (E.g. all even, high and low weights, individual weights)
- **Combining.** How are the scores and weights combined?
- **Rating.** How is the final number converted into the consumer rating?

In-Vehicle Information System (IVIS)

Rating scheme for Consumers

... a first idea:

Rating	Explanation
*	Well designed IVIS but display size/quality does not meet all ESoP requirements
**	Well designed IVIS that meets all ESoP requirements
***	Well designed IVIS that significantly exceeds all ESoP requirements
****	Well designed IVIS that significantly exceeds all ESoP requirements and integrates with other in-vehicle systems to moderate driver workload and support driving task
*****	Reserved for future development – not currently economically achievable with current technology



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Electronic checklist is
freely available;
please email:

enquiries@trl.co.uk