TOWARDS OPERATIONALIZING DRIVER DISTRACTION

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What is Driver Distraction?

What distracts drivers?

- Things Outside the Car: 29.4%
- Adjusting Radio, CD, etc.: 11.4%
- Other Occupants: 10.9%
- Moving Objects in Car: 4.3%
- Other Objects in Car: 2.9%
- Vehicle Controls: 2.8%
- Eating, Drinking: 1.7%
- Cell Phones: 1.5%
- Smoking: 0.9%
- Other Distractions: 8.6%
- Unknown Distraction: 25.6%

CSRC Collaborative Safety Research Center

TOYOTA
A consistent definition of driver distraction is needed for scientific advancement in understanding driver distraction and driving assessment in general.
Workshop Goals

To reach consensus on 3 definitions:

1) Top-level definition of driver distraction
   2a) Definition of visual-manual distraction,
   2b) Definition of auditory-vocal-cognitive distraction.

Questionnaire  Workshop

1) Broad Definition

  2a) Visual-manual Definition
  2b) Auditory-vocal-cognitive Definition
Questionnaire Results

Terms Identified in Literature

- The word "attention"?
- The word "workload"?
- Requires secondary task or activity?
- Mind-based definition?
- Requires a trigger (external or internal)?
- Should it have lower levels?
- Should it have an operational level?
- Uses safety-related term?
- Delay in recognition or response time?
- Requires critical incident or increased risk?
- Affected by driving situations or conditions?

Include

0% 20% 40% 60% 80% 100%
Broad Definition:

Driver distraction is the diversion of attention away from activities critical for safe driving toward a competing activity, which may result in insufficient or no attention to activities critical for safe driving. – Regan et al. (2011)
Accompanying Definitions:

Attention (Posner & Fan, 2008):
• Orienting – Selection of sensory information.
• Executive – Resolving conflict among responses.
• Alerting – Achieving and maintaining an alert state.

Safe driving is operating a motor vehicle in a reasonable and expected manner.
Workshop Method

Regan et al. (2011)

Group Consensus

Next Step: Second Level Definitions

Visual-manual

Auditory-vocal-cognitive

Hurts et al. (2011)
This traditional dichotomy was judged insufficient to address such a multidimensional issue.

Driver distraction can arise from competing activities which place demands upon Cognitive, Auditory, Vocal/Verbal, Visual, Motoric, and Other resources, separately or in any combination.
Workshop Outcome

More inclusive and scientifically-driven categories:

- Visual-manual
- Auditory-vocal-cognitive
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