Distraction analysis

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LAB accidentology analysis, introduction

LAB distraction analysis is a study performed in 2021 in the context of ADDW regulatory process (EU 2023/2590 for MN).

- Accident database: VOIESUR (2011)
  - 8500 French police reports analysis of the year 2011 aiming to carry out macroscopic and microscopic studies.
  - Coding: human failures of which distractions are filled out based on a dedicated grid (see TRACE* project).

- Road accident Police report analysis: macroscopic figures of distraction-related injured accidents

  => Frequency (accidents) : 7.3% of injury accidents involving at least one Passenger Car (PC)

  => Severity (casualties): 6% of fatalities / 7.6% of serious injured / 8% of the slightly injured.

  No trend on circumstance influences (Day/Night; City/Extra urban; Intersection or not; Age of the driver; Driver's license experience)

- Road accident Police report analysis: microscopic figures of distraction-related injured accidents
  - 4 main sources of distraction (See next slide), on which FVA may bring benefits.

(*Traffic Accident Causation in Europe)

FVA vs distraction, challenges for design

		Inside the vehicule			Outside the vehicule			Total		
		Frequency (% accidents)	Fatalities	Serious inj	Frequency (% accidents)	Fatalities	Serious inj	Frequency (% accidents)	Fatalities	Serious inj
3. VISUAL	*Gaze on something inside the vehicle*	6,0%	6,4%	5,9%						
	Police				0,9%	0,0%	0,0%			
	Animal on the road				0,04%	0,8%	0,1%			
	Pedestrians on pavement				1,0%	1,6%	0,0%	**26,7%**	**13,6%**	**23,3%**
	Accident site				0,8%	0,8%	1,2%			
	Looking for road signs				8,1%	1,6%	8,3%			
	Other kinds of perceived dangers				9,9%	2,4%	7,8%			
AUDITORY	*Object is moving in the vehicle*	0,9%	0,0%	2,0%				**0,9%**	**0,0%**	**2,0%**
2. IN ACTION	*Handling the GPS (GSM might be used as GPS)*	4,2%	0,8%	1,2%						
	Handling the on-board radio	0,6%	0,8%	0,0%						
	Using a cellphone	3,2%	25,6%	5,9%						
	Inserting a CD	0,04%	0,8%	0,1%				**15,0%**	**37,6%**	**18,0%**
	Using an vehicle-integrated audio or video device	2,3%	2,4%	4,4%						
	Utilisation an other type of device available in the vehicle	2,2%	4,0%	3,3%						
	Looking for an object inside the vehicle	2,5%	3,2%	3,1%						
1. COGNITIVE	*Interaction with other vehicle occupant*	4,2%	11,2%	2,5%						
	Conflict between driving task and task not related to driving	4,7%	16,8%	9,7%						
	Conflict between several driving tasks	17,4%	5,6%	13,7%				**50,1%**	**44,0%**	**53,0%**
	Driver's mind	23,8%	10,4%	27,1%						
UNKNOWN	*Unspecified distraction*	2,6%	1,6%	1,6%	1,8%	0,0%	0,0%	**7,30%**	**4,8%**	**3,8%**
	Unknown distraction	(	0,8%	0,1%	2,8%	2,4%	2,1%			
Total		**74,6%**	**90,4%**	**80,5%**	**25,3%**	**9,6%**	**19,5%**	**100%**	**100%**	**100%**

Priorities for FVA:
1. **benefit** vs functional interactions in the HMI
2. ..but also vs cellphones ("handies")
3. ..for sure vs outside scene perception

2021 LAB study (for M1), shared along ADDW discussions

Takeaway,

- Accidentology needs enlarged and updated data,
- Recommendation to monitor the phase in (with UN-R125-02 as first step then FVA),
- FVA is a challenger versus cognitive, interactive, and external environnement distraction,
- FVA shall be reasonably managed to achieve effective benefits, enhancing regulation requirements.

Thanks,