

Time-Critical Supportive Augmented Reality

Issues on Cognitive Capture and Perceptual Tunneling

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Time Critical AR

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- Distraction
 - Information Overload
 - Perceptual Tunneling
 - Cognitive Capture

Perceptual Tunneling (PT)

Perceptual Tunneling is a phenomenon that originally comes from aviation and in which an individual becomes focused on one stimulus, like a flashing warning signal and neglects to attend to other important tasks/information such as driving the car.

Cognitive capture (CC)

Cognitive capture refers to the situation where the driver may be totally "lost in thought," a condition which, in particular, can impair situational awareness.

Where emotional content (i.e., personal involvement) in a conversation is high, such as arguing with someone over the phone, the likelihood of cognitive capture is increased.

Instruments that require some level of cognitive involvement and thereby can lead to a loss of situational awareness are viewed as increasing the risk of a crash.

Longitudinal and Lateral Car Driver Assistance



Break!

- Question: What do you suggest – how to measure PT and CC?
- No directions => You can think free!

Measuring Mental Effects

- Tertiary tasks - Computational Tasks
- Glance behaviour
 - Head-mounted
 - Environmentally fixed
- Subjective Measurements
 - SAGAT Method
 - NASA TLX

Finally...

- ...its a big thing! Let's get to the summit!
- Questions?
- Suggestions for me?
- Suggestions for testing AR systems in general?

