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DO DRIVERS LACK HAZARD PREDICTION SKILLS: THE EXPERIENCE AND LESSONS FROM ONLINE HAZARD PREDICTION TRAINING PROGRAM?

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What is Hazard Perception

the sub-process of hazard avoidance reflecting the ability of the driver to anticipate and foresee potential road danger from environmental and behavioral clues (Pradhan & Crundall, 2017).

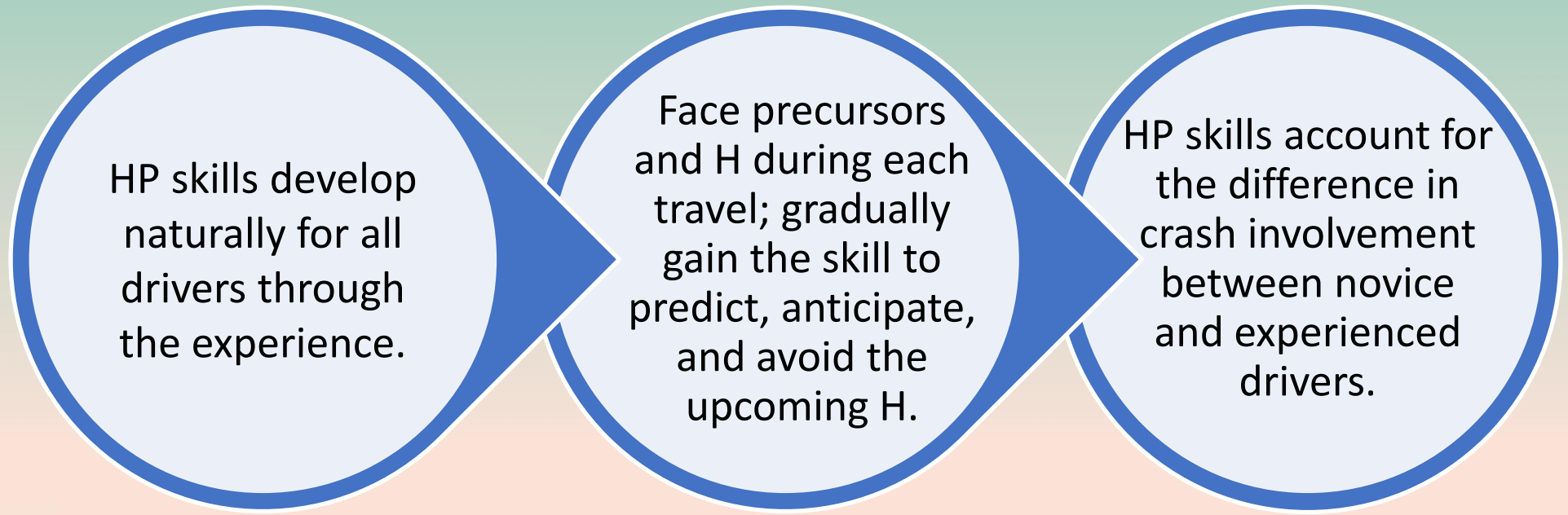
What is Hazard Perception

Requires from driver to change behaviour: brake, reduce speed, change the lane etc.

Hazard perception

Hazard ≠ big threat

Why should HP skills be taught?



Why should HP skills be taught?

- Significant decrease in car crash statistics was observed in UK and Australia after introducing obligatory h ting (Boufous ir kt., 2011; Wells ir kt., 2008).
- 11 percent decrease of road crashes c s is reported after introducing hazard perc icensing procedure in UK (Wells ir kt., 2008). It saved ted injuries of 1076 people (Horswill, 2016).
- Even experienced drivers made relatively big number of mistakes in experimental conditions of hazard prediction testing (Crundall, 2016).

All drivers might benefit from hazard perception training programs.

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State of art

- Many HP training programs have been created so far.
- Three most common types of teaching methods:
  - commentary drive (Ābele et al., 2019; Arslanyilmaz & Sullins, 2019; Castro et al., 2016);
  - video review feedback (Agrawal et al., 2017; Horswill et al., 2017)
  - implicit learning (Kahana-Levy et al., 2019);
  - these types are combined assuming better effect or transfer of learning to real driving situations (Horswill et al., 2021).

STILL..

- Most of the programs lack of theoretical background. What causes the change?

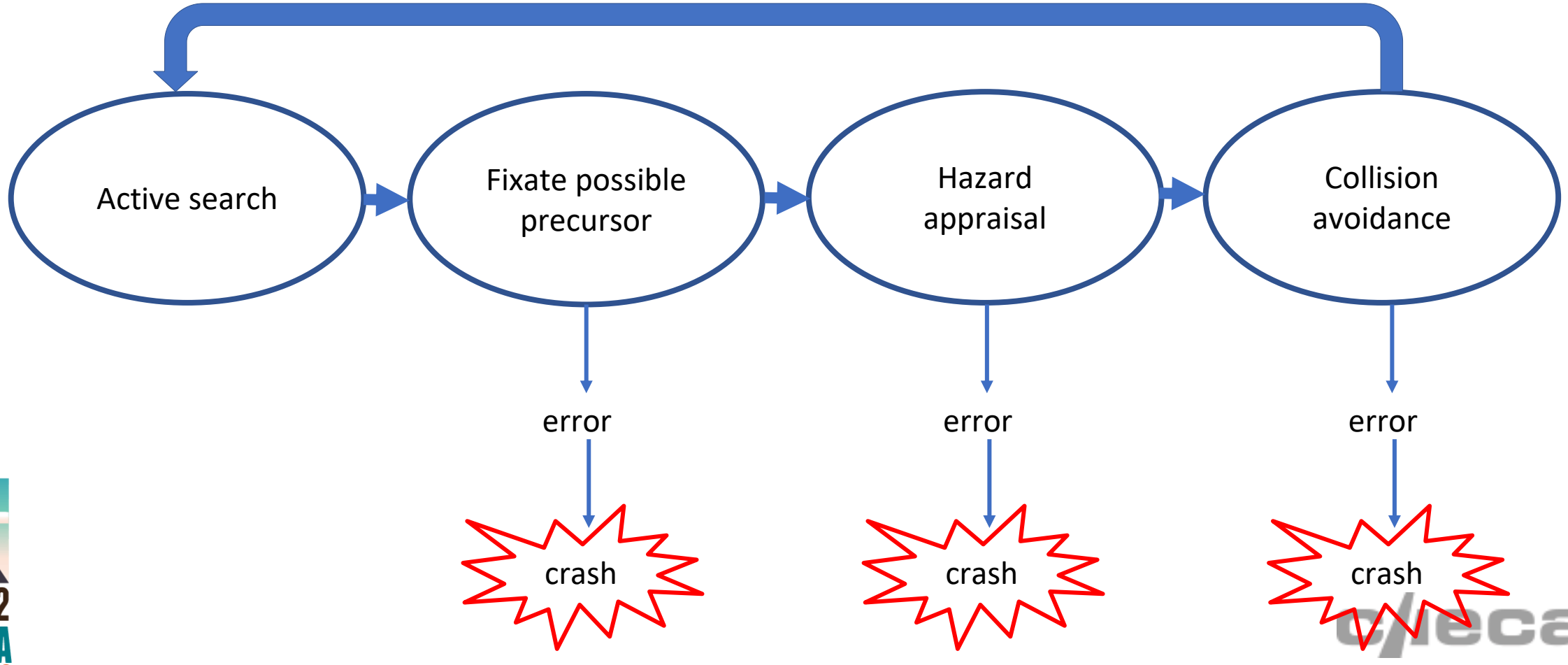
Model

Pradhan and Crundall *Model of Hazard Avoideness*

Please find:

Pradhan, A.K., Crundall, D., 2017. Hazard avoidance in young novice drivers: Definitions and a framework. In: Fisher, D.L., Caird, J., Horrey, W., Trick, L. (Eds.), Handbook of Teen and Novice Drivers. CRC Press.

Simplified hazard avoidance model (only subprocesses that could be intervened)



Aims of the program

Obstacle on the road is not an obstacle to drive safely!

Aim is to increase HP skills of learner-drivers, novice & experienced drivers.

- Increase knowledge about HP processes and its relevance for road safety.
- Deliver the knowledge about the psychological factors that account for effective HP recognition, reaction to it, and HP avoidance during the trip.
- Enhance the possessed competences of HP: improve the subsequential subprocesses of HP that allow to recognize, predict, and avoid the potential hazard.

Program structure

2 x 45 min. lessons

2-7 days between lessons

Delivered by driving instructors

Methods – theory delivery, practice, commentary drive, implicit learning, feedback, learning by observation, reflecting, discussion.

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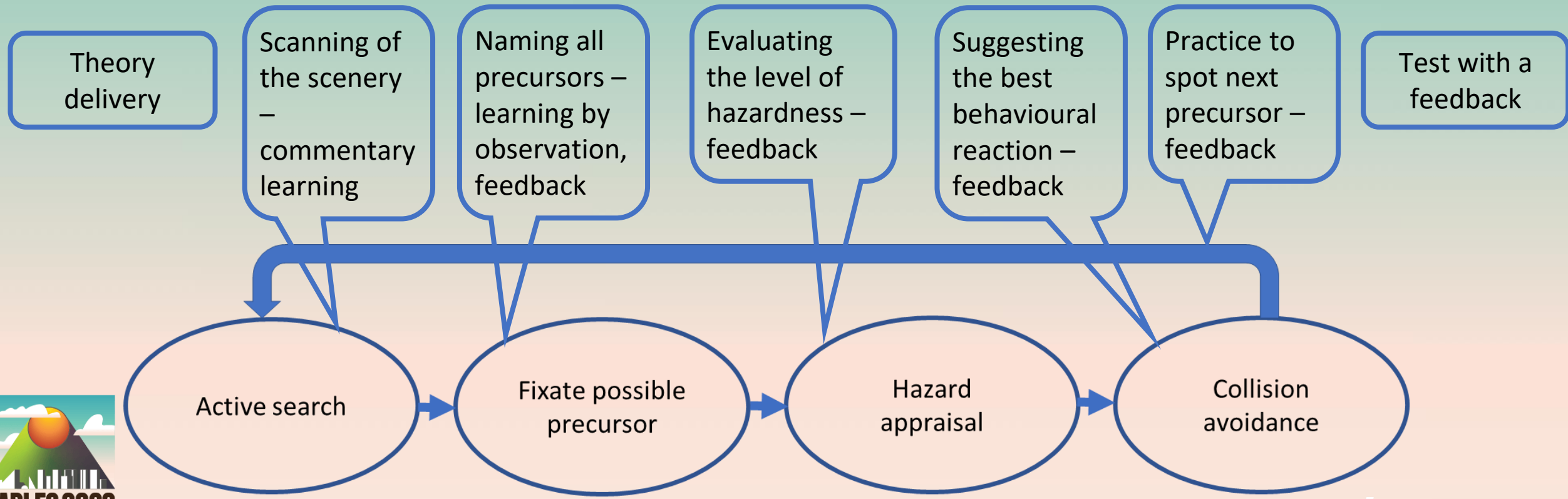
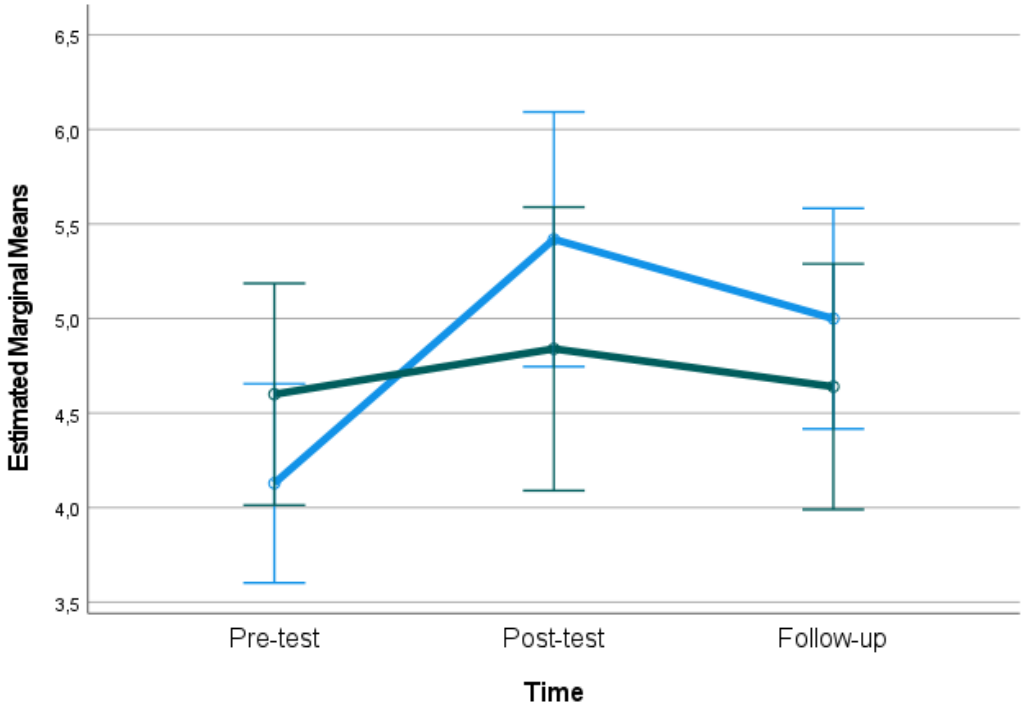
Content


Theory delivery
Scanning of the scenery – commentary learning
Naming all precursors – learning by observation, feedback
Evaluating the level of hazardness – feedback
Suggesting the best behavioural reaction – feedback
Practice to spot next precursor – feedback
Test with a feedback
Active search
Fixate possible precursor
Hazard appraisal
Collision avoidance

Effectiveness



Coming to the end
Lessons learnt while impementing online

- Training material includes video clips that a… …er. Low resolution of trainees' electronic device an… …peed of internet may affect the quality of scene which is crucial for … …elivery.
- Trainees were encouraged to participate in … personal computer, not other mobile elect… the bigger screen as details mattered substan…
- Participation in discussions and exercises was plan…ed, but not all trainees were verbally active. Their actual participation level could not be evaluated due to technical reasons.

Some technological solutions needed.

App might be created where progress of individual progress could be monitored.

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Questions?
Comments!

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