

Learning theory and the development of skills,
judgment, expertise, and attention:

Is crash reduction simply a matter of instruction,
practice, feedback, and consequences?

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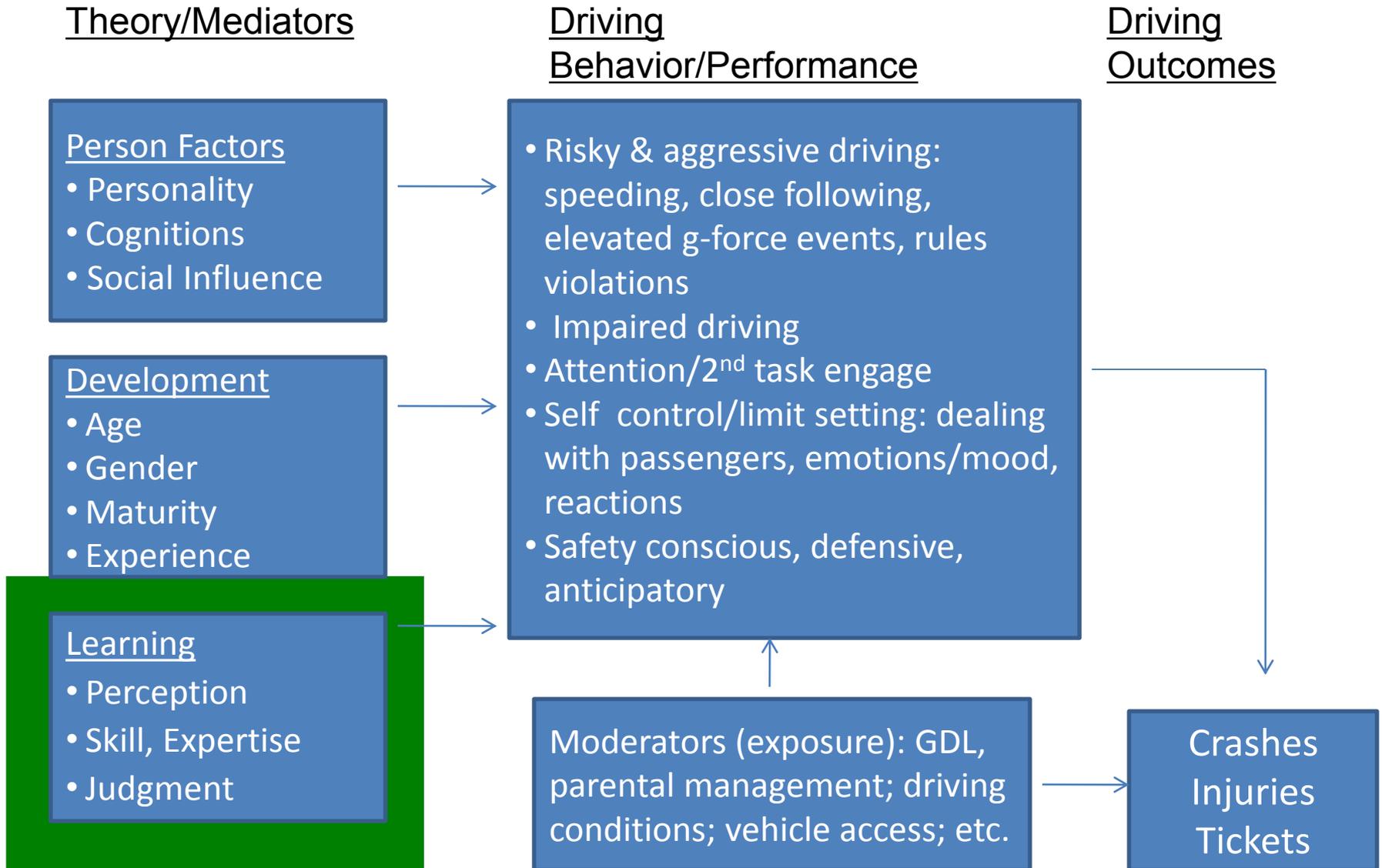
Goal

Examine the role of learning theory as it relates to younger drivers: how can we frame what we see in the young driver domains?

Learning Theory

- Process that brings together cognitive, emotional, and environmental influences and experiences for acquiring, enhancing, or making changes to one's knowledge, skills, values, and world views (Illeris, 2000; Ormorod, 1995)
- How do teens learn to drive **safely and avoid crashes?**

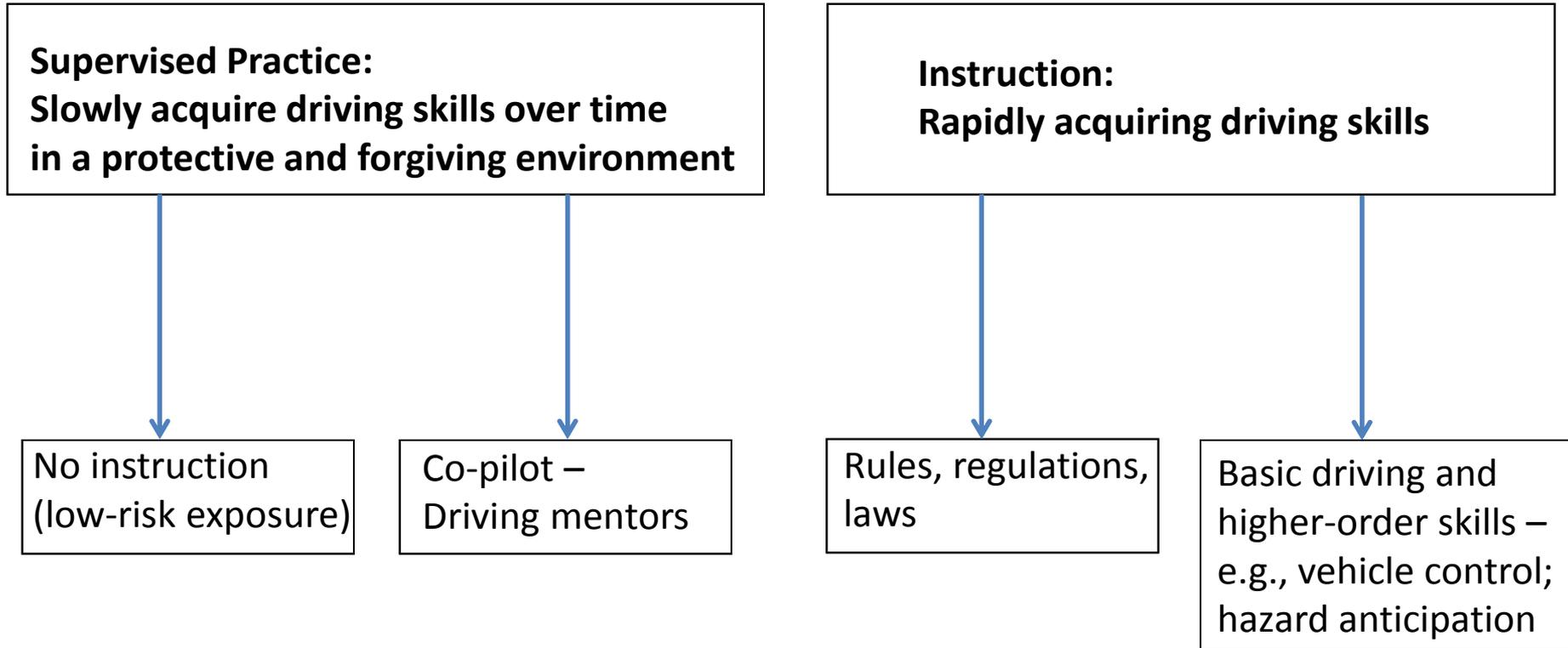
Theory-based Conceptualization of the Young Driver Problem



Skill verses Expertise

- Driving is a complex set of *skills* that requires time to develop into overall *expertise*
- **Skill:** A learned ability to a pre-determined threshold with certainty with a minimum outlay of time, energy, or both (e.g., micro)
 - Merging onto a freeway
 - Gap acceptance
 - Hazard anticipation
- **Expertise:** high degree of skill, knowledge, and judgment. Becoming proficient with prolonged or intense experience through practice and/or instruction – requires deliberate effort (e.g. macro)
 - Driving safely in general—collision free

Learning by doing and from mistakes: Minimize potential consequences



Judgments about risk—some theory

- Perception that no harm will come –
- Elements of most theoretical models on perception of driving risk
 - Models of health behavior
 - Social cognitive theory
 - Health belief model
 - Theory of reasoned action
 - Theory of planned behavior
 - Self-regulation theory

Decision making

- Perceptions about the consequences of actions and vulnerability to those consequences
 - Situation specific
 - Enduring
- Perceptions about risks and benefits of driving are learned and influence behavior
 - Feedback
 - Consequences—rewards/punishments

The exacerbating function: Distraction

- Diversion of attention away from activities critical for safe driving
- Multitasking = shifting focus and attempting to perform two or more tasks at the same time
 - Myth of ‘teens are better at multitasking’
- “The worst of the worst” – texting (visual manual)
- Young drivers learn that they can get away with texting/talking usually without bad outcome
 - Diminished sense of risk minimizes minor traffic/road conflicts

Discussion questions

1. Can the learning process accelerate the development of:
 - Skills
 - Expertise
 - Judgment
 - What do we know about learning theory that suggests there is anything that can be done to enhance learning that seems to occur “naturally” from experience?

Discussion questions

2. Can the learning process motivate young drivers to minimize/avoid the risks of distraction and multitasking?