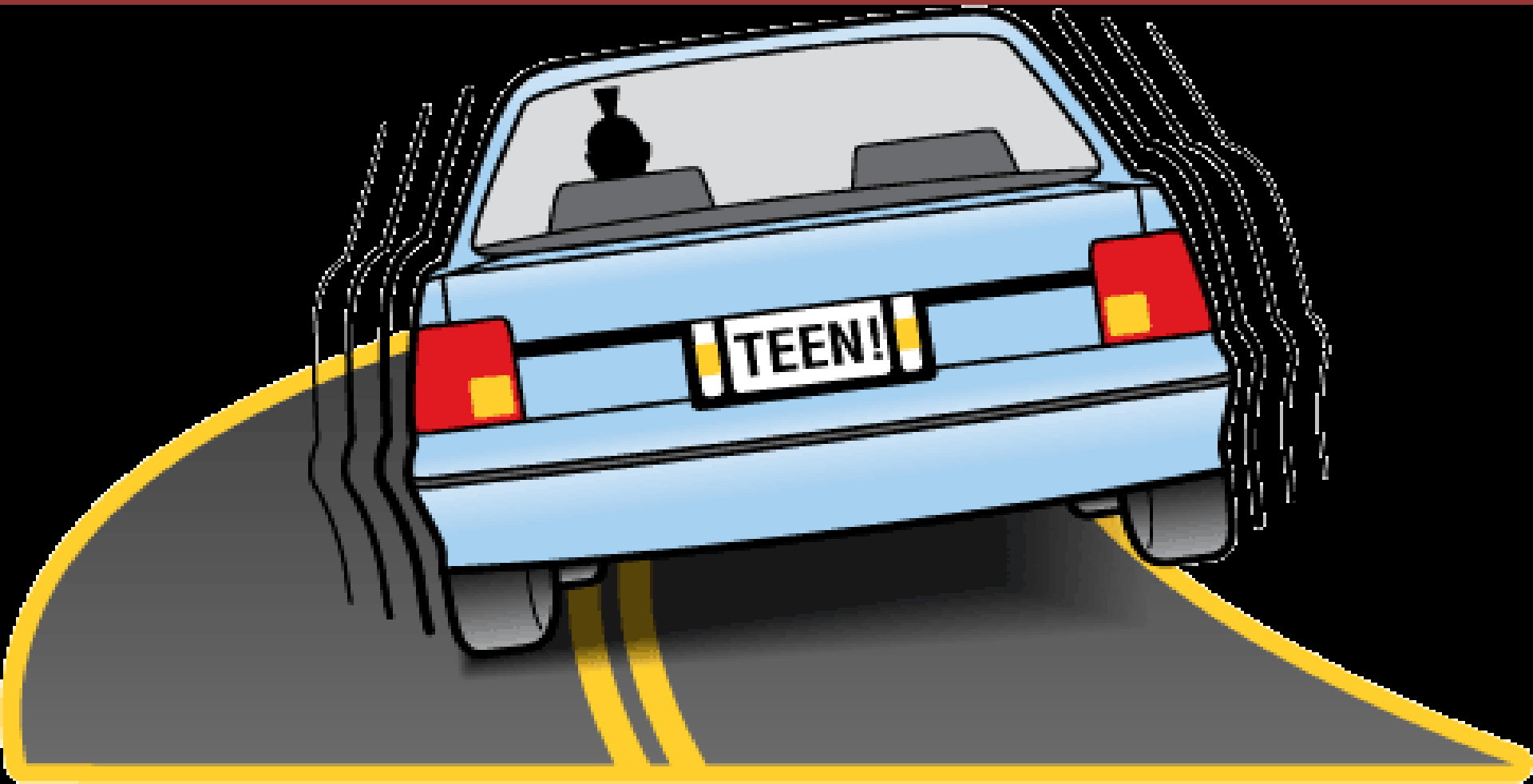


# TRB Young Driver Workshop on Theory

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## Theory-Based Conceptualization



# VALUES OF THEORY

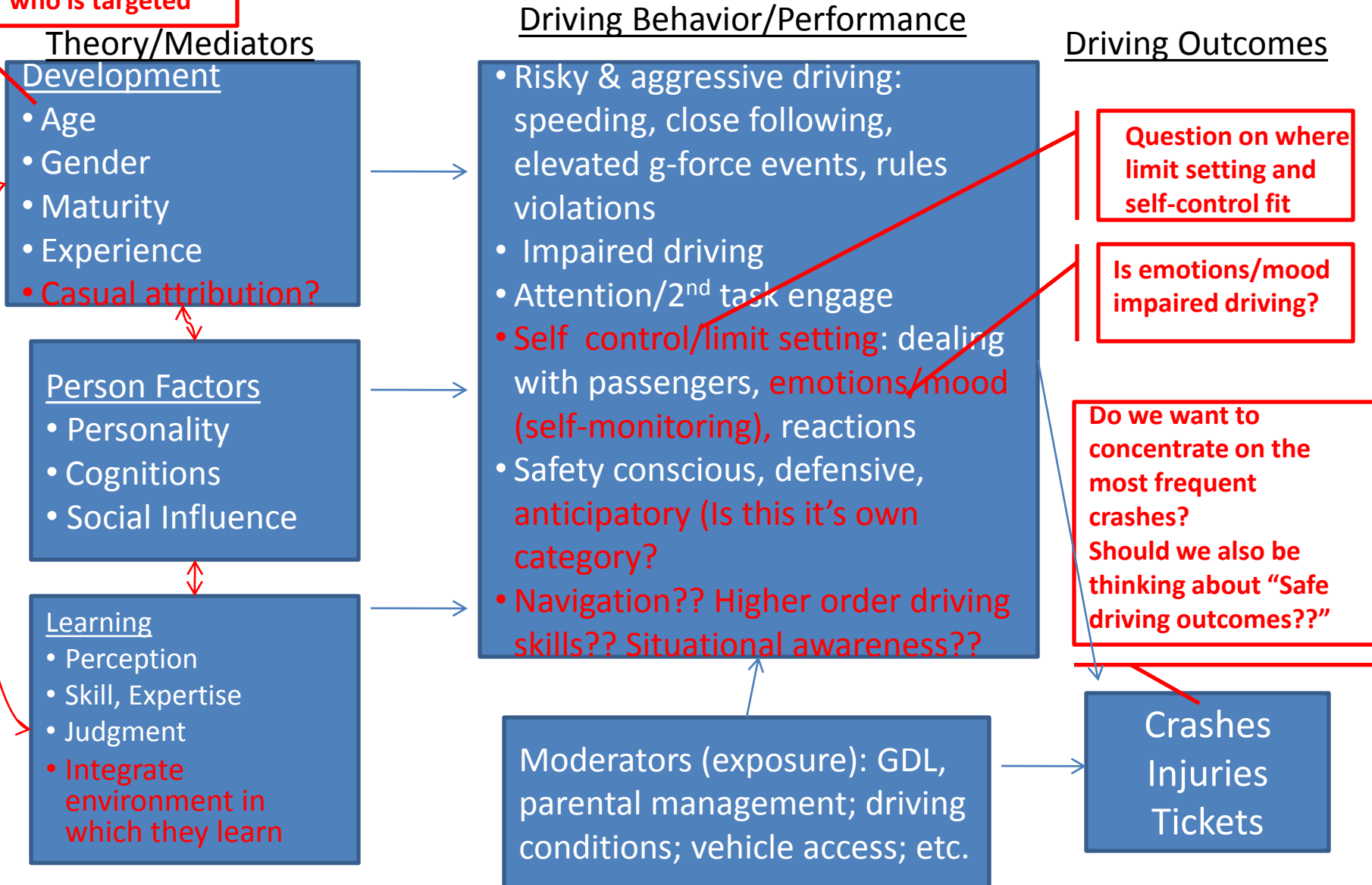
- ⊙ Efficiency (of research) - focusing studies on questions whose answers constitute more than free-standing tidbits of information (factoids).
- ⊙ Effectiveness (of intervention) - interventions based on a solid understanding of the phenomenon (a) more often work and (b) work better than those without this underpinning
- ⊙ “Knowing” without direct evidence - enabling us to provide reasonably legitimate answers to questions where there is little or no research to provide "concrete results."
  - Advanced skill training is the perfect example of this. We pretty well know it can't work, and why, unless done differently than is typical.

# ELVIK'S LAWS OF ACCIDENT CAUSATION

1. Learning - rates decline with experience
2. Rare Events - common risks contribute relatively less than rare risks
3. Complexity - informational demand increases error rate
4. Cognitive capacity - as capacity reaches limits errors increase

Think about a population perspective or a risk perspective in who is targeted

# Theory-based Conceptualization of the Young Driver Problem



# Driving Behavior/Performance

## Driving Outcomes

- Risky & aggressive driving: speeding, close following, elevated g-force events, rules violations
- Impaired driving
- Attention/2<sup>nd</sup> task engage
- Self control/limit setting: dealing with passengers, emotions/mood, reactions
- Safety conscious, defensive, anticipatory

Moderators (exposure): GDL, parental management; driving conditions; vehicle access; etc.

Crashes  
Injuries  
Tickets



# Theories of Developmental

- Age
- Gender
- Maturity
  - Brain development and capacity
  - Self control
  - Attentional capacity
  - Social needs, relationships, skills
  - Emotional control
- Experience
  - Innocent exploration
  - Extreme insensitivity to risk (**Insensitivity or oblivious?**)
- **Casual attribution??**

# Person Theory

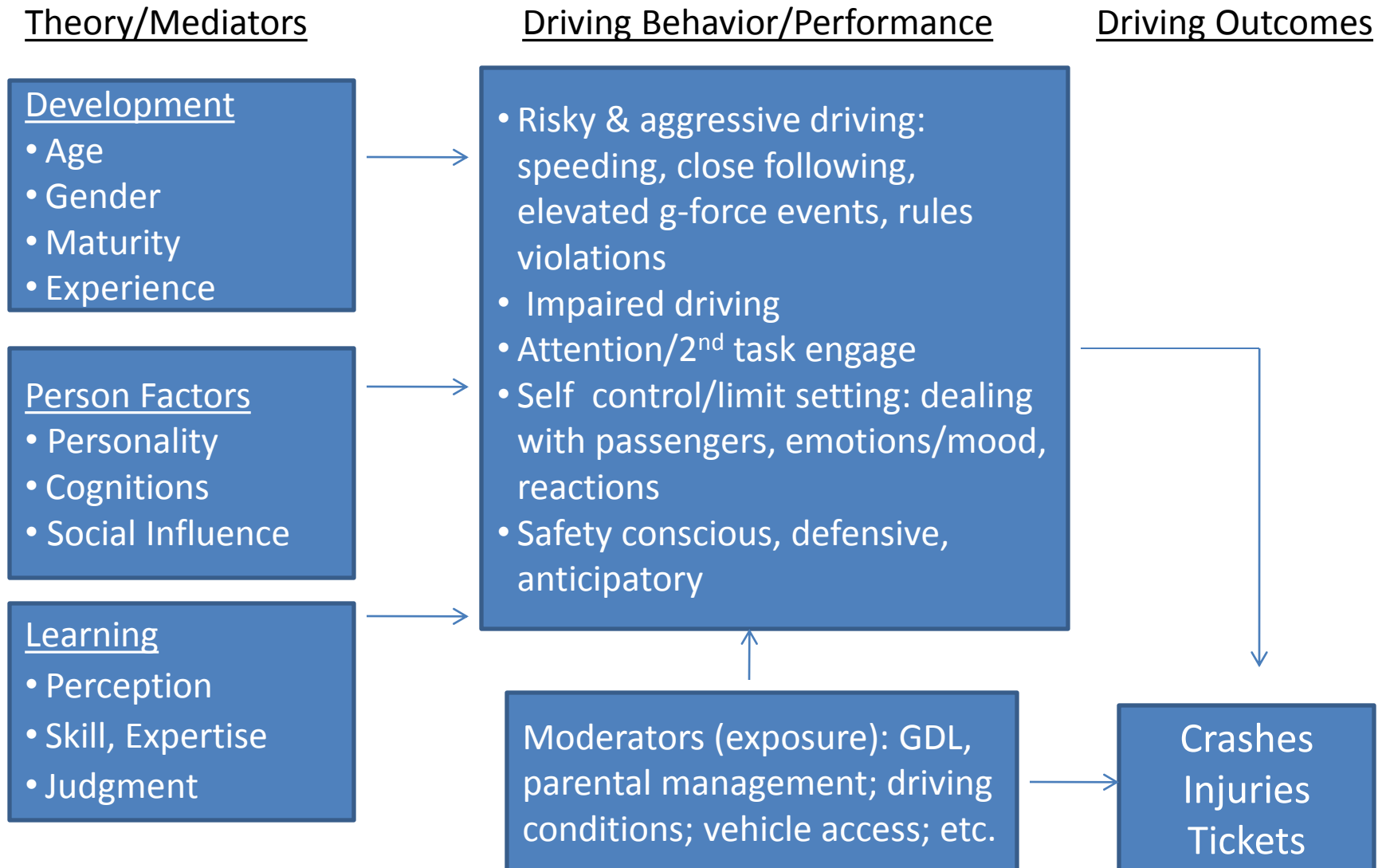
- Personality
  - Risk taking
  - Aggressive
  - Sensation/experience seeking
  - Other?
- Cognitions
  - Knowledge, beliefs
  - Perceptions
  - Attitudes
  - Emotions
  - Values
- Social Influence
  - Passengers
  - Peers
  - Social Norms
  - Parent/family influences
- Where would ADHD, depression, anxiety fit in???? Different than emotions above.

# Learning

- Think about where environment fits in with learning
- Perception
  - Hazard detection
  - Risk perception and tolerance
- Skill, expertise – driving error
  - Vehicle management
  - Complex maneuvering
- Judgment
  - Speed
  - Gap acceptance
  - Intersection management
  - Secondary task engagement
  - Passenger influence



# Draft Conceptualization of the Young Driver Problem



<b>Behavioral Theories</b>	<b>YD Applications</b>
Psychological <ul style="list-style-type: none"> <li>- needs</li> <li>- drives</li> </ul> Personality traits: experience seeking; aggressive, etc	High risk groups and behavior <ul style="list-style-type: none"> <li>• Drinking/drowsy driving</li> <li>• Risk taking; risk homeostasis</li> <li>• Aggressive driving</li> </ul>
Behavior/Social Cognitive Theories <ul style="list-style-type: none"> <li>• Operant</li> <li>• Psycho-social               <ul style="list-style-type: none"> <li>- Reasoned action</li> <li>- Social cognitive</li> <li>- Etc.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Driving experience; expertise</li> <li>• Beliefs and attitudes</li> <li>• Social influences</li> </ul>
Developmental Theory <ul style="list-style-type: none"> <li>• Maturation and age</li> <li>• Dimensions: cognitive, physical, social, emotional</li> <li>• Tasks: autonomy, competence, relationships, experience</li> </ul>	Exposure: <ul style="list-style-type: none"> <li>• Licensure age</li> <li>• Attentional capacity</li> <li>• GDL provisions</li> <li>• Parental management</li> </ul>
Learning Theories <ul style="list-style-type: none"> <li>• Perception</li> <li>• Psycho-motor</li> <li>• Judgment</li> </ul>	<ul style="list-style-type: none"> <li>• Hazard detection</li> <li>• Attention/distraction</li> <li>• Vehicle management skills</li> <li>• Expertise</li> </ul>

# POSSIBLE GOALS

1. Become precise in our use of concepts/terms
2. Make better use of theoretical/conceptual work developed in other fields
3. Apply particular theories to YD behavior & intervention
4. Develop a theory-based model of YD behavior