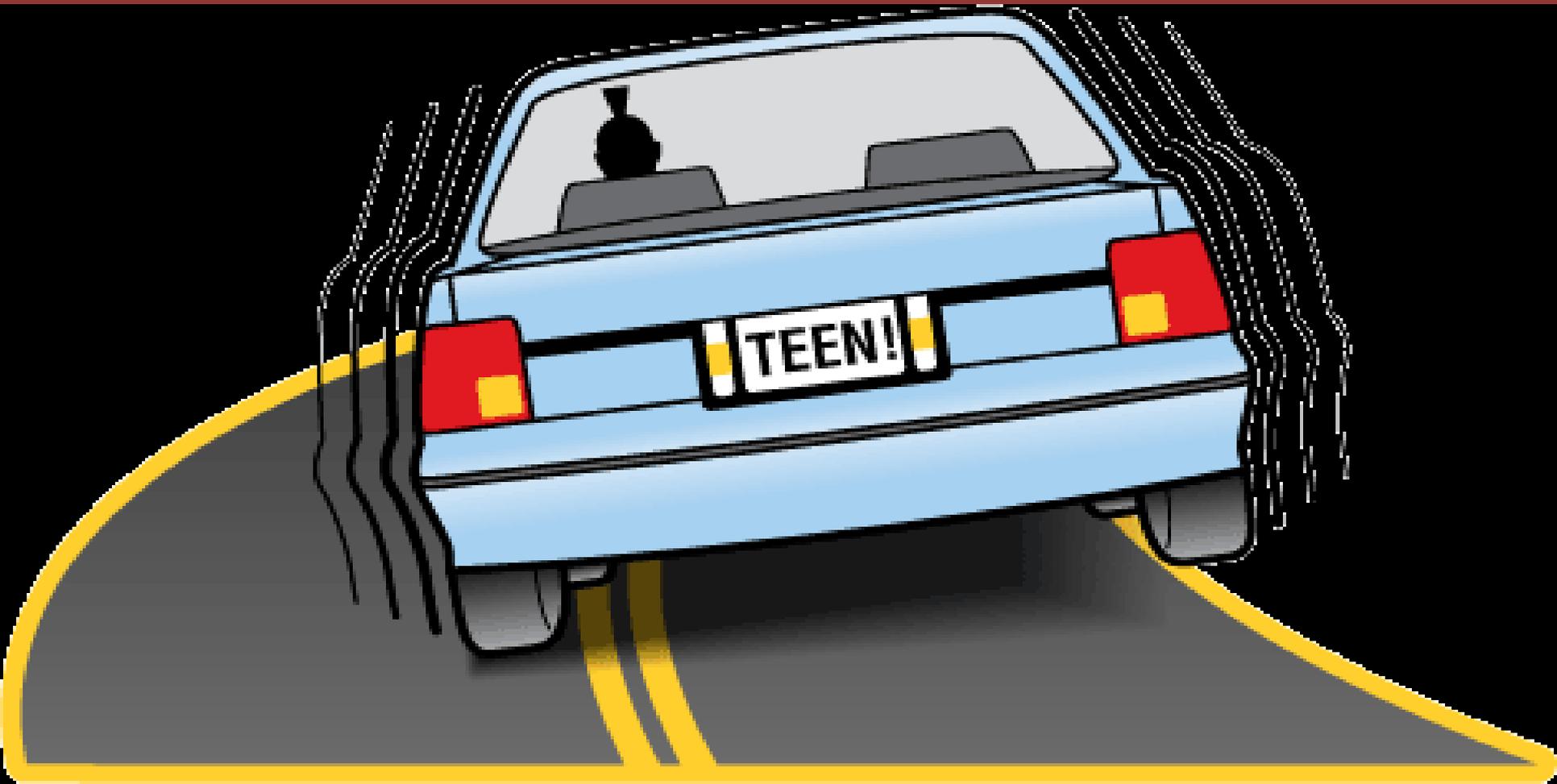


TRB Young Driver Workshop on Theory

Bruce Simons-Morton

Rob Foss

Theory-Based Conceptualization



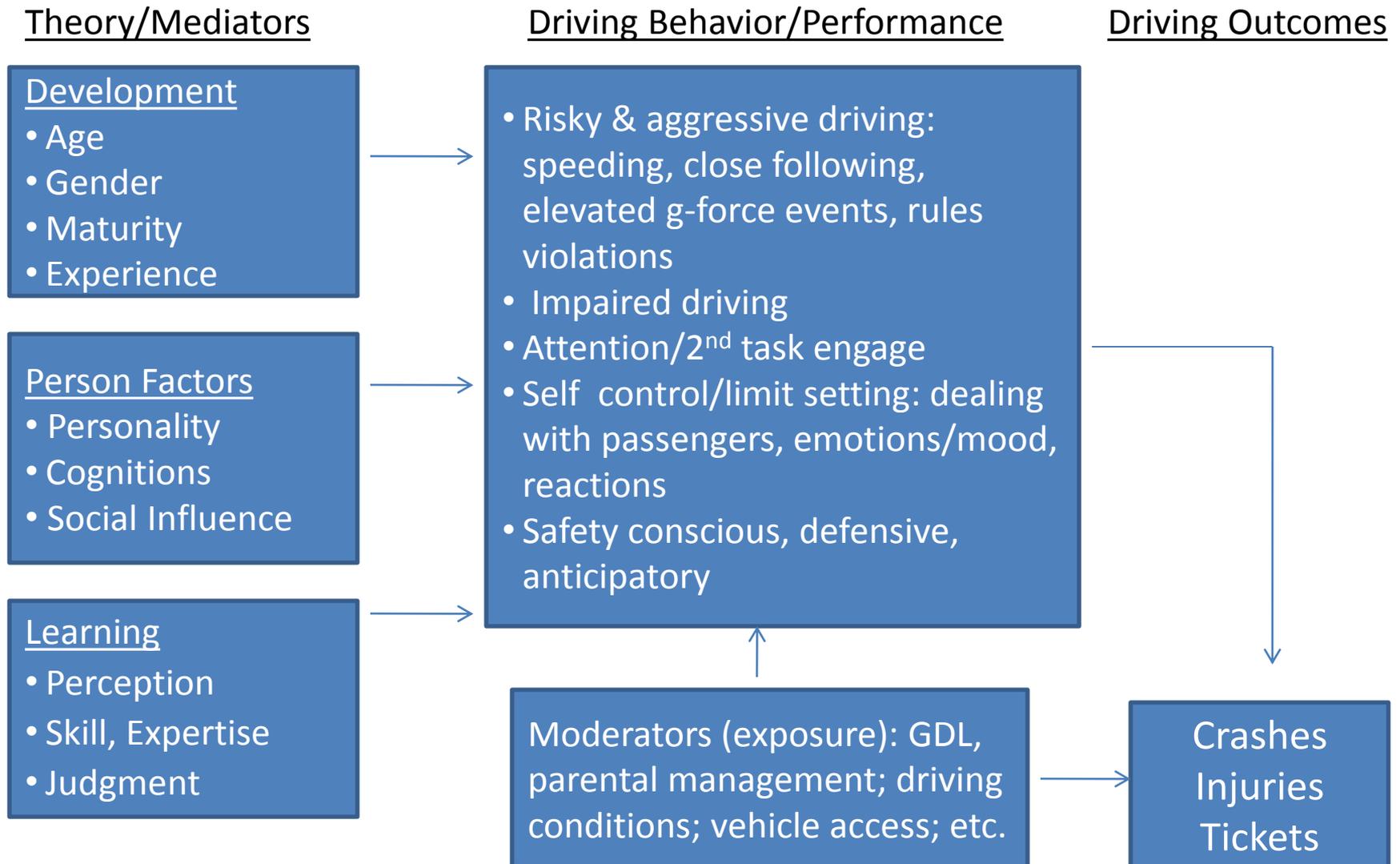
VALUES OF THEORY

- ⊙ 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

Theory-based Conceptualization of the Young Driver Problem



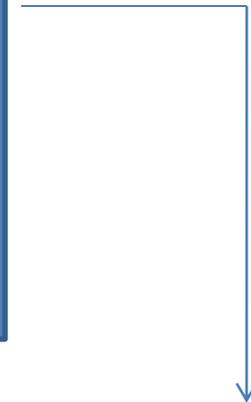
Driving Behavior/Performance

Driving Outcomes

- Risky & aggressive driving: speeding, close following, elevated g-force events, rules violations
- Impaired driving
- Attention/2nd 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

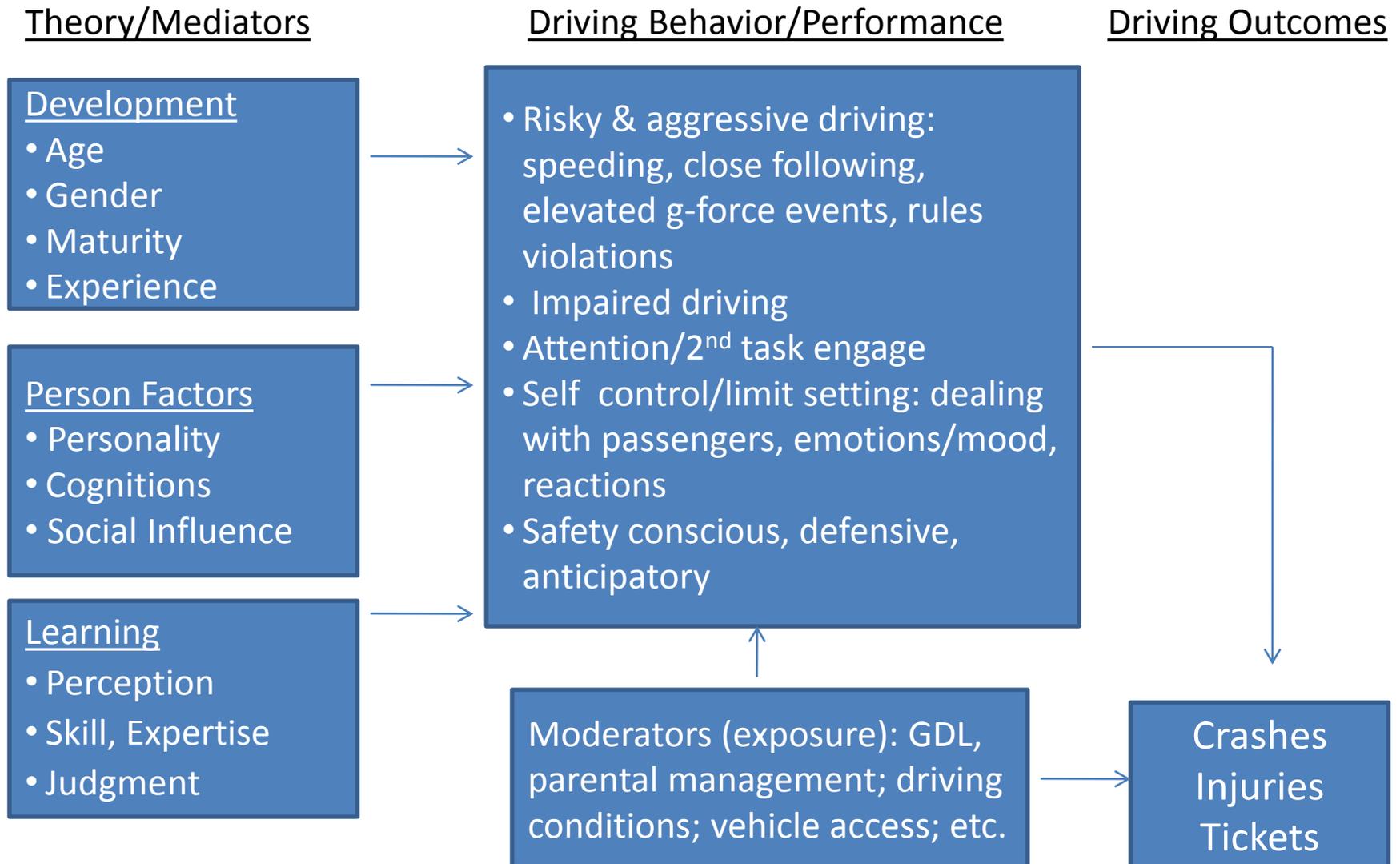
Person Theory

- Personality
 - Risk taking
 - Aggressive
 - Sensation/experience seeking
 - Other?
- Cognitions
 - Knowledge, beliefs
 - Perceptions
 - Attitudes
 - Emotions
 - Values
- Social Influence
 - Passengers
 - Peers
 - Social Norms
 - Parent/family influences

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



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

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