



# Future Directions in Teen Driver Safety: Goals & Obstacles

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# Preview

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- Need for a scientific footing
- What is life?
  - Nature of human behavior
- Specific research questions
- The Future



# Defining a Research Agenda

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- TRB Young Driver Subcommittee
- Woods Hole, MA
- July 2008
- 24 participants – young driver experts
- Goal: Identify critical research questions
  - Efficient use of limited research resources
  - Guidance for funding agencies
  - Stimulate additional interest



# Defining a Research Agenda

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“Future Directions for Research on Motor Vehicle Crashes and Injuries Involving Teenage Drivers”

Report available at:

[www.hsrrc.unc.edu/~foss/2008rpt.pdf](http://www.hsrrc.unc.edu/~foss/2008rpt.pdf)



# Top priority research issues

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1. Advancing a scientific approach to addressing teenage driver risk
2. The process of learning to drive (safely)
3. Teenage driver exposure
4. Parenting issues – how parents influence teenage driving
5. Passenger effects – how passengers influence teenage driving and crash risk



# Addressing teen driver risk scientifically

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- Current approaches:
- GDL – très bon, sehr gut, muy bueno
- Messages, slogans, short-term education/training
  - Little scientific or conceptual basis
  - No evaluation evidence
  - Potentially harmful
  - Opportunity costs



# Most programs / interventions fail

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- Medicine
- Psychology
- Education
- Social Policy
- Traffic Safety



# Bridges usually don't fail

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- Because ... we pay close attention to the properties of the phenomena and principles involved when designing & building bridges
- Not so when dealing with behavior







# Elements of Effective Intervention

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# Understanding Human Behavior

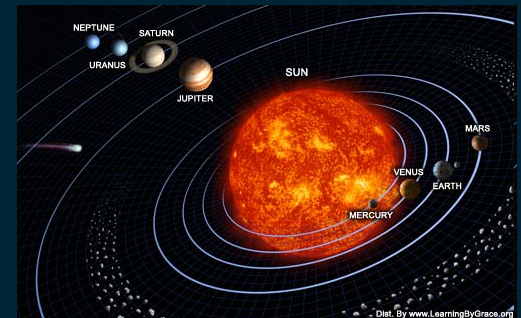
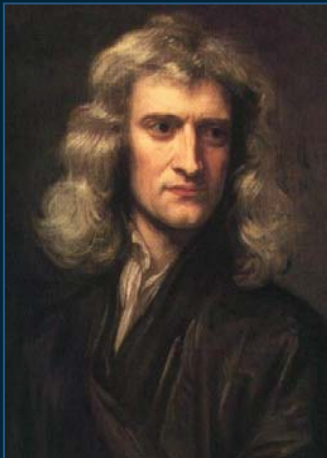
Not “Rocket Science”  
... it’s harder!





"I can calculate the motions of  
the heavenly bodies but not  
the madness of the people"

- *Sir Isaac Newton*



Dist. By www.LearningByGrace.org



“It has been said that man is a rational animal. All my life I have been searching for evidence which could support this.”

- *Bertrand Russell*

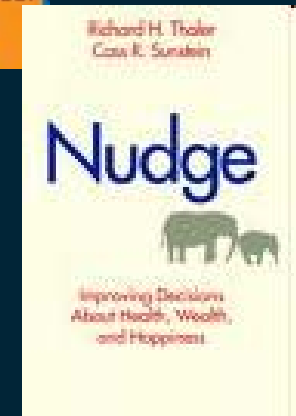
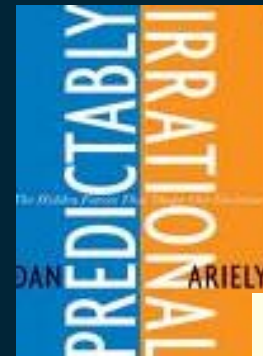
Philosopher, Mathematician, Author



# Human behavior

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- Not (merely) rational
- Social
- Emotional
- Moral
- Habitual
- Intuitive





# Humans ...

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- Active, interpreting, sense-making
  - Not passive recipients
  - Result: behavioral adaptation



# Humans ...

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- See things that aren't there
  - Visual illusions (& social analogs)
- Don't see things that are
  - Inattentional & change blindness
- Remember things that didn't happen
  - Or recall differs from reality





# Inattention blindness

Test Your Awareness: Do The Test





# Humans ...

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- Don't remember facts / details
  - Recall the "Gist"
- Misinterpret statistics / facts
  - Cognitive / emotional biases distort
  - Car crashes  $\neq$  jumbo jet crashes



# Human functioning - “Dual control”

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- System 1 (Intuitive)
  - fast, automatic, effortless
  - difficult to control or modify
- System 2 (Deliberate reasoning)
  - slower, effortful, controlled
- 2 monitors 1
  - But poorly – allowing many incorrect intuitions to be expressed
  - Experience  $\implies$  correct intuition





# Humans also subject to

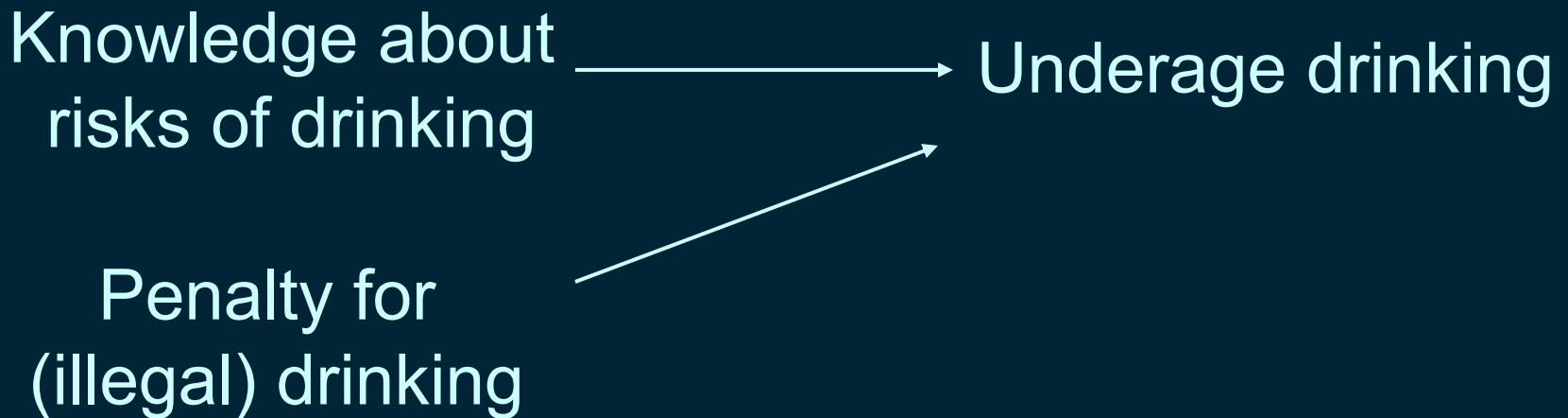
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- **Supra-individual influences**
  - Social structure
  - Culture
  - Rapidly changing conditions
    - Physical/biological world change slowly
    - Social world evolves extremely fast
      - Myspace --> Facebook --> Twitter --> next?
      - Internet, email, cell phone, texting all within 15 yrs



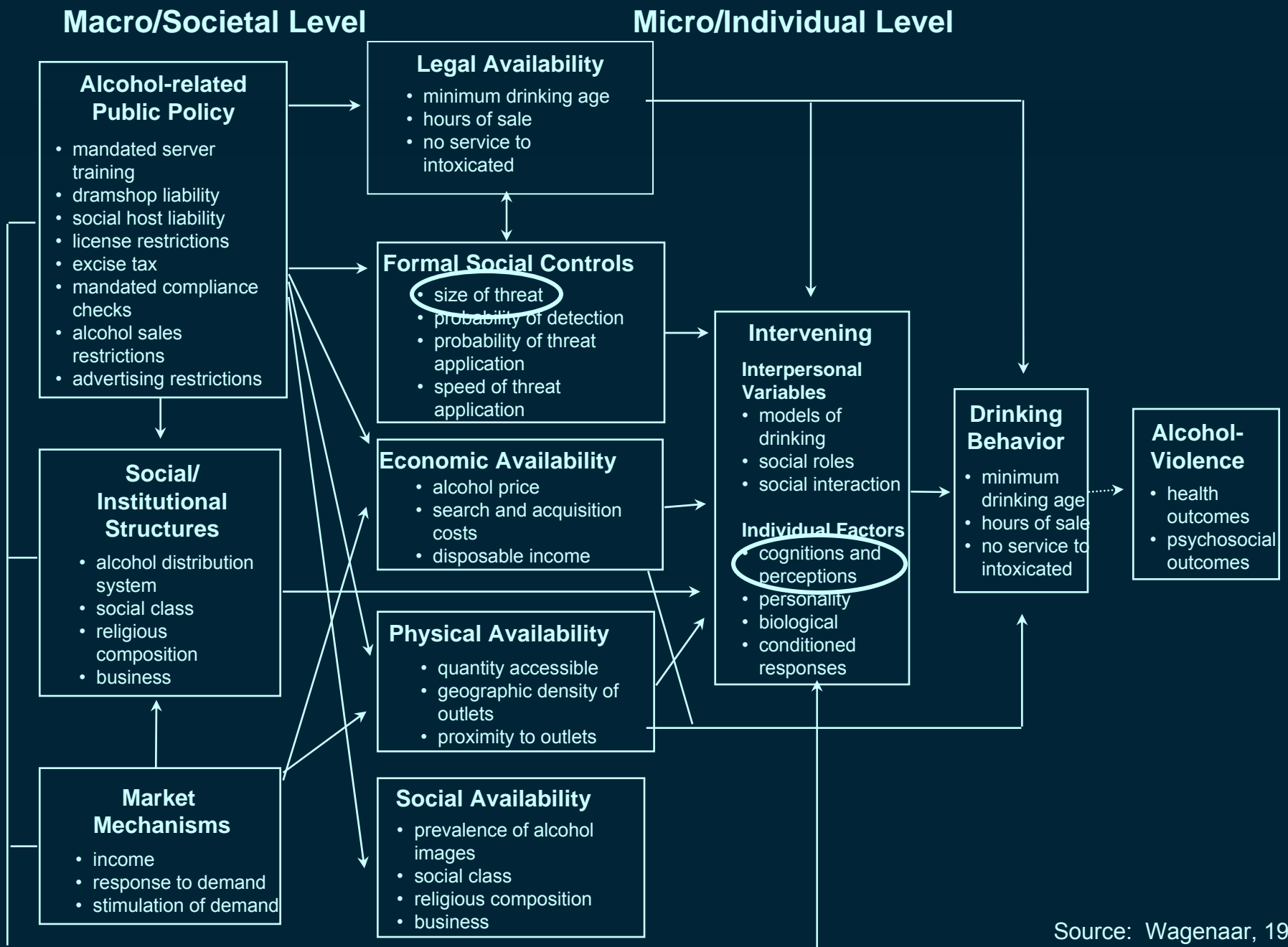
# A Typical Conceptual Model (Underage Drinking)

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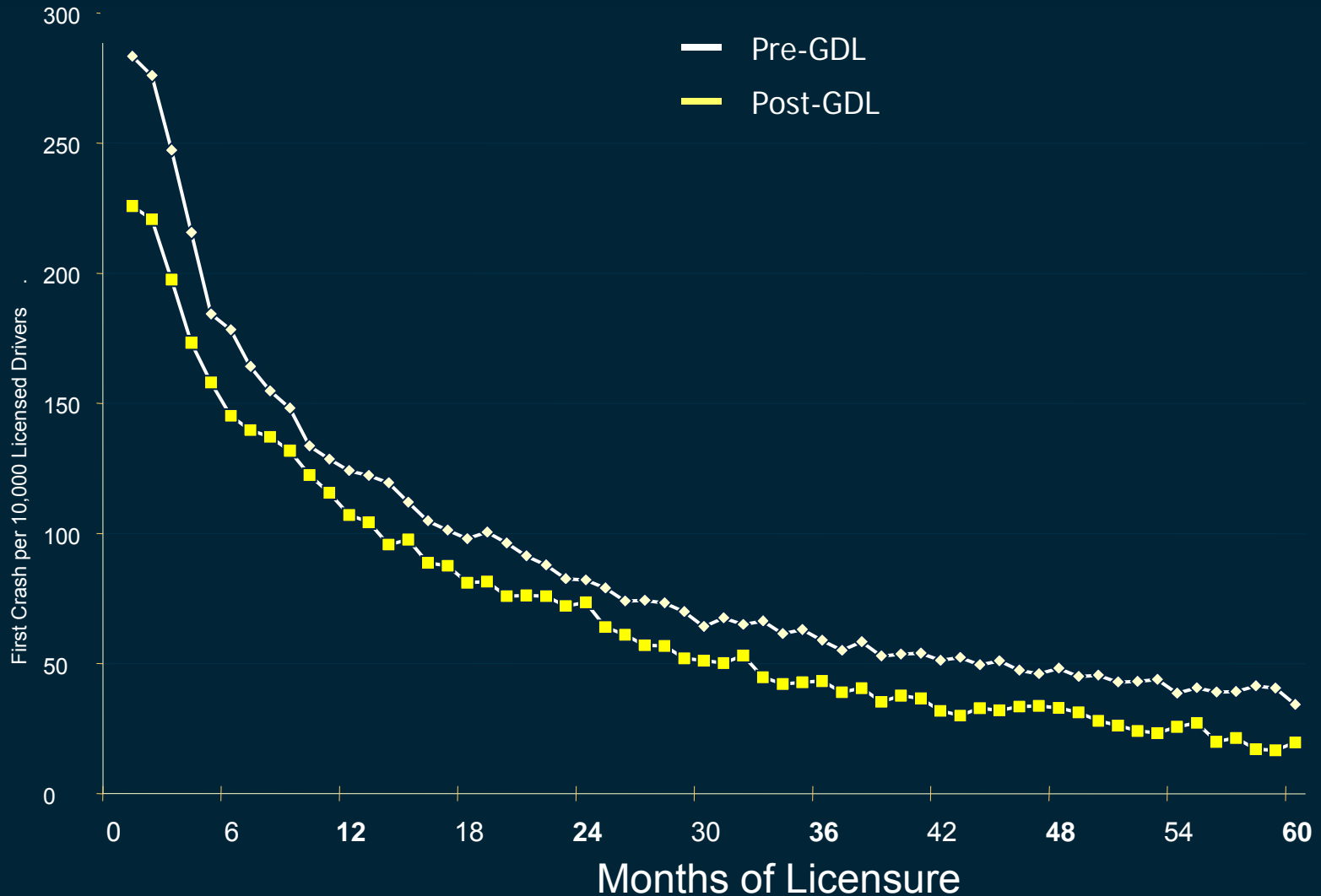
# Theoretical Model for Initiative to Reduce Underage Drinking





# First crash rate, by months licensed

## North Carolina





# Learning to drive (safely)

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- What is learned in first months?
  - Driving or self-control?
  - Vehicle instrumentation highly promising
- Can learning be accelerated, enhanced?
  - If so, how ...
    - Simulation?
    - Improved parent supervision?



# Other complications to address

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- Association vs. causality
  - Night as frontier
- Experimentation needed
- Theoretical frameworks can help



Merci, Danke, Gracias

Thanks!