

# Teen Driver Distraction

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# Immaturity and Maturation

- Brain development
  - Sensitization of the emotional centers
  - Rapid development of cognitive centers
- Psychosocial
  - Identity development
  - Independence and individuation
  - Trust and responsibility
- Puberty and sexual development
  - Keen interest in opposite sex

# What is Distraction?

A process or condition that draws away driver attention, thereby disturbing driver control.

- Lack of:
  - Attention/focus
  - Alertness
  - Vigilance
  - Situation awareness
- Presence of:
  - Heavy mental load
  - Stress
  - Fatigue
  - Drowsiness



[blogs.importtuner.com](http://blogs.importtuner.com)

# Sleep/Drowsiness

During adolescence:

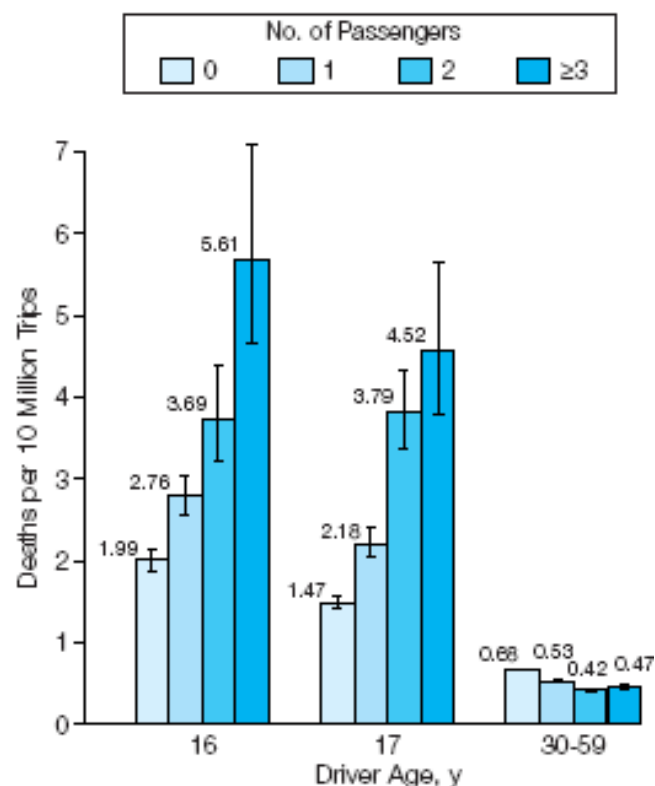
- Sleep patterns change
- Excessive daytime sleepiness
- Bad for performance, health, and safety

Sleep-patterns change during adolescence:

- Decreased sleep duration with increasing age
- Delayed bedtime and rise time
- Discrepant school-night/weekend sleep patterns
- Adolescents need 9-10 hours of sleep/night

# Effect of Passengers by Age

**Figure.** Trip-Based Driver Death Rates by Driver Age and Number of Passengers



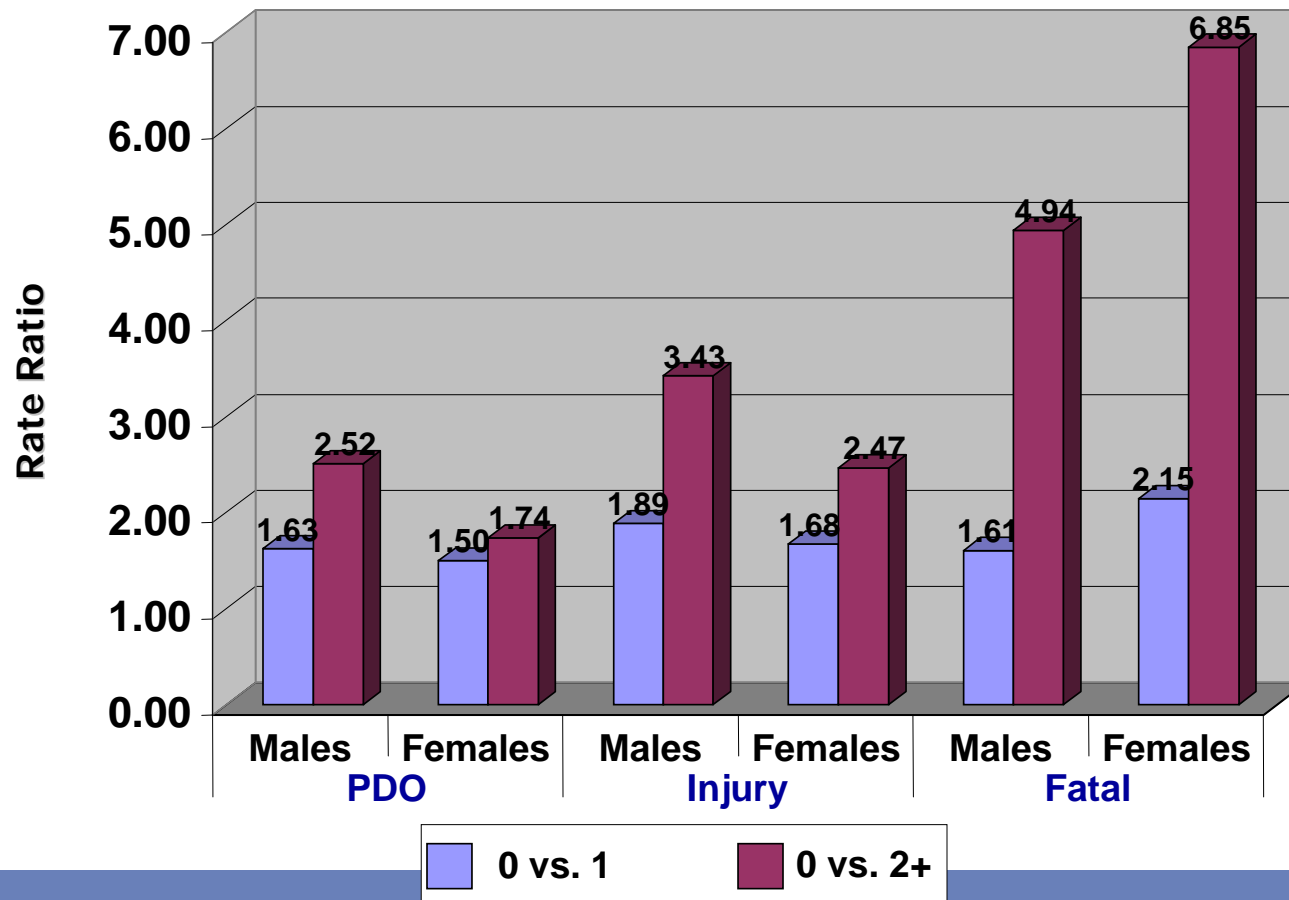
Error bars are 95% confidence intervals.

Chen, Baker, Braver, Li

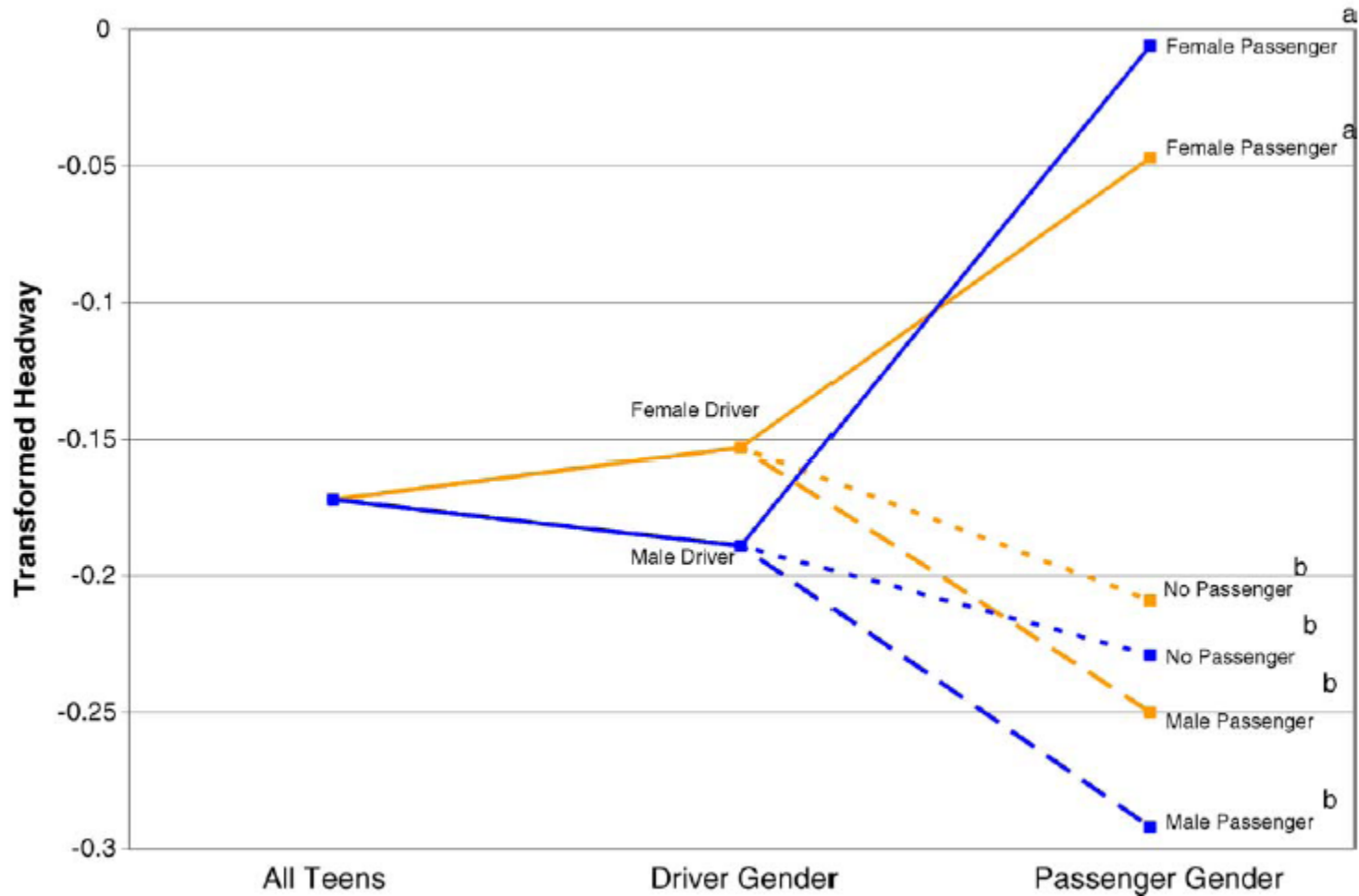
JAMA, March 22/29, 2000—Vol 283, No. 12

# Rate Ratio by Sex and Number of Passengers

Doherty et al, 1998



# Headway by Passenger Sex

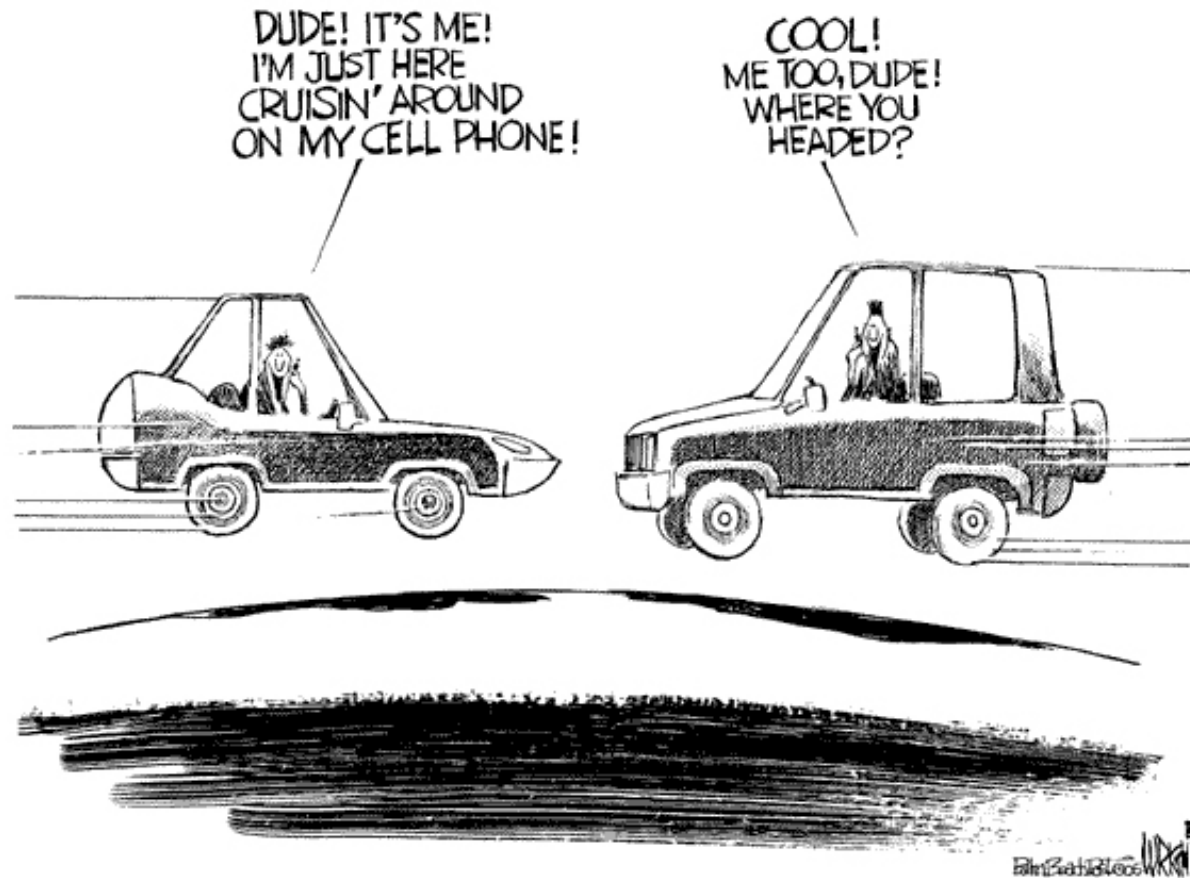


B. Simons-Morton et al. / Accident Analysis and Prevention 37 (2005) 973-982

# Rapid Increases in Technology

- Navigation systems
- Entertainment
- Information systems
- Other interactive devices
- Cell phones

# Rapid Increases in Technology



# Cell Phones

- **Phoning while driving increases crash risk**
  - **Field of visual search limited (Atchley & Dressel, 2004)**
  - **Attention to traffic and signs/signals**
  - **Vehicle control less precise and smooth**
  - **Conversation itself impairs**
  - **Hands free as impairing as hand-held**
- **Conversation content determines distraction**

(Sven & Patten, 2005)

# Technology

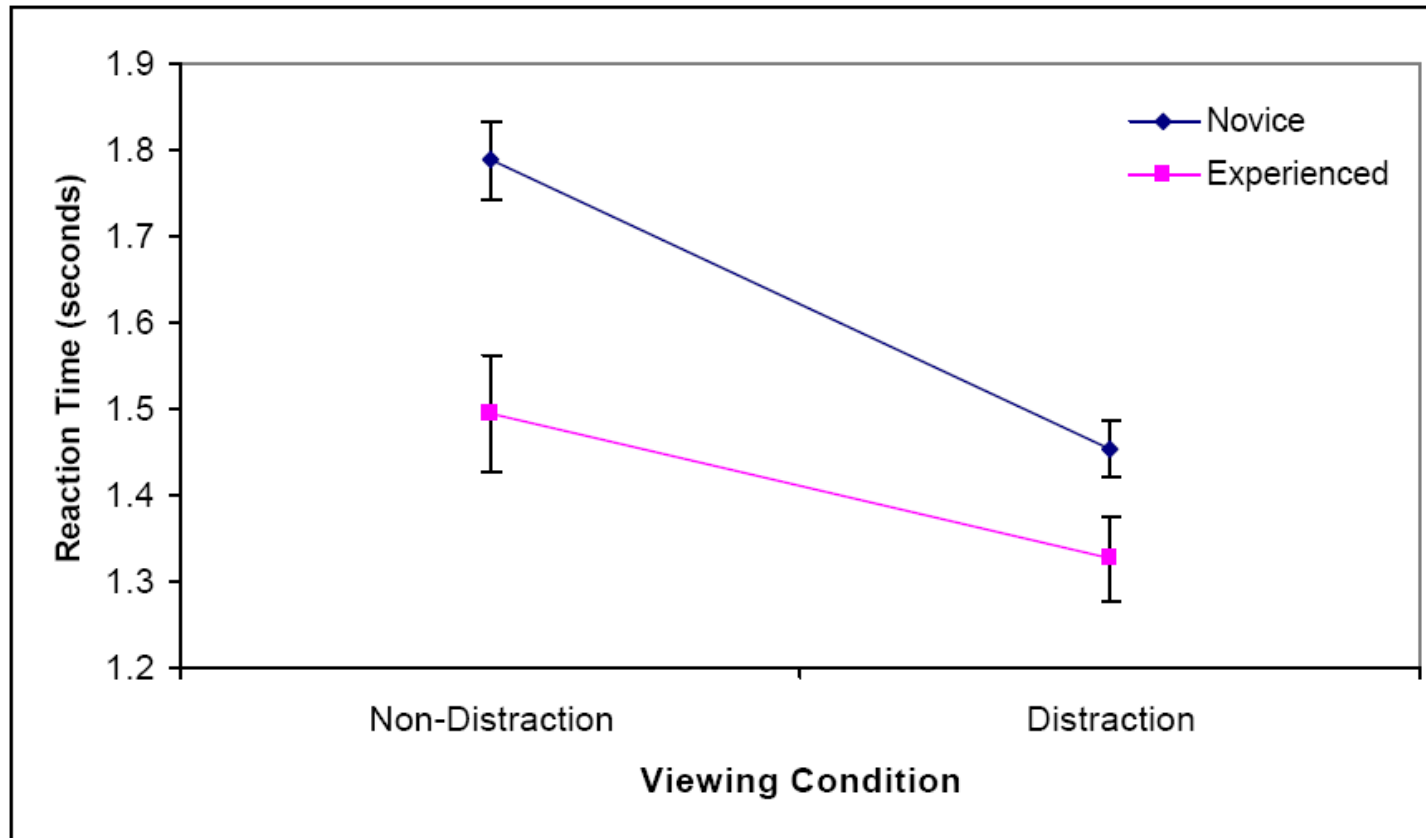


Figure 6.1 Mean reaction times (in seconds) to detect the primary hazard by Viewing Condition.

Whelan et al, 2004

# Technology

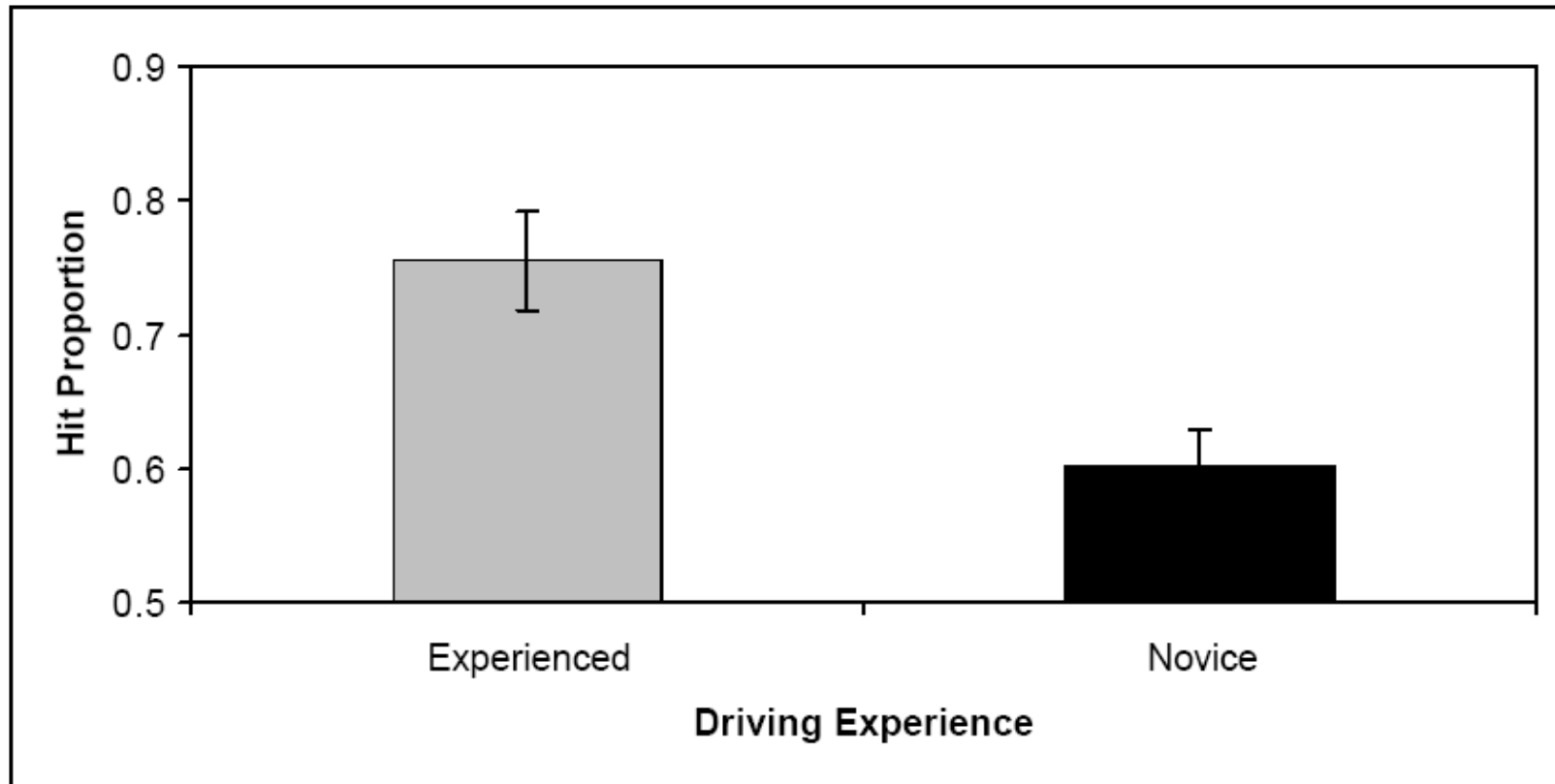


Figure 6.3 Mean hit proportions as a function of Driving Experience

Whelan et al, 2004

# Implications

- Two programs increase teen driver safety
  - GDL
  - Checkpoints Program
- Why do they work?
  - Restrict teens' exposure to highest driving risk
  - Emphasize practice and parental monitoring
  - Parents judge teen's readiness for more privileges
  - Parents can base decisions on what they know about their teen