



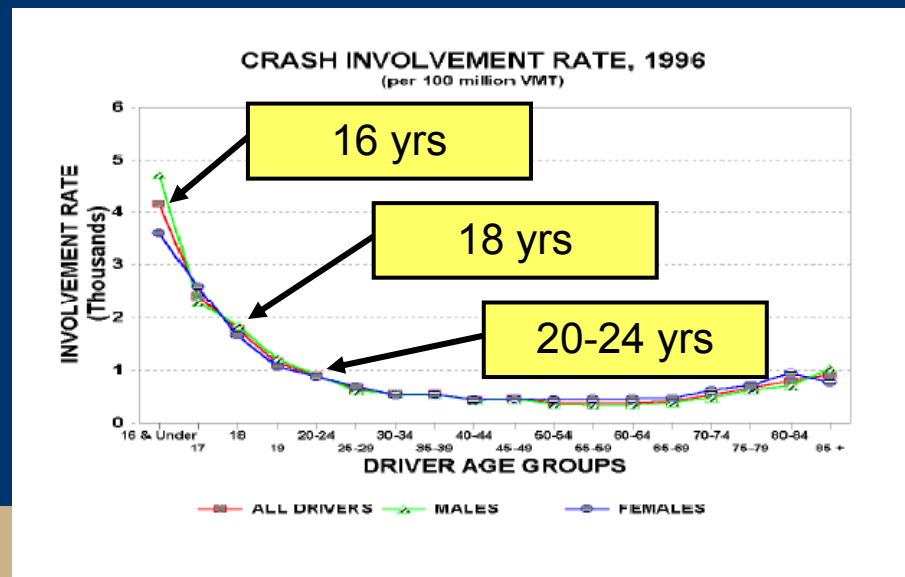
WHY A TRAFFIC OBSERVATIONAL APPROACH FOR TEEN PASSENGER STUDY?

- Naturally occurring trips and peer groups
- No “observer” effect
- Directly observe and compare teen drivers with various passengers vs. teen drivers alone vs. general traffic
- Observations made at the same times and places
 - Controls for extraneous variables: traffic, roadway, lighting, weather, time of day, etc.



HOW DO YOU KNOW A TEEN WHEN YOU SEE ONE???

- Very difficult to identify driver & passenger characteristics in roadway environment, at speed
- “Young” ≠ “Teen”
 - Very significant changes from 16 to 20
 - Other observational studies just judged “young” (≤ 25). Not useful





OVERVIEW OF APPROACH

- Observe vehicles leaving school parking lots
 - Driver & passenger age, gender
 - Record information to ID vehicle later
- Measure traffic some distance away
 - Sites that permit speeding or tailgating
- Discriminate teen vehicles based on match to school exit records



DETERMINING TEEN OCCUPANTS

Observer 1 at school exit notes occupants:

- Teen or adult; gender; seat position, vehicle type



Observer 2 videotapes exiting vehicles, including license plate

Observer 1's narration recorded on the videotape via wireless microphone



MEANWHILE.....

Observer 3 is about $\frac{1}{4}$ to $\frac{3}{4}$ miles away

Unobtrusive recording using LIDAR, video, PC

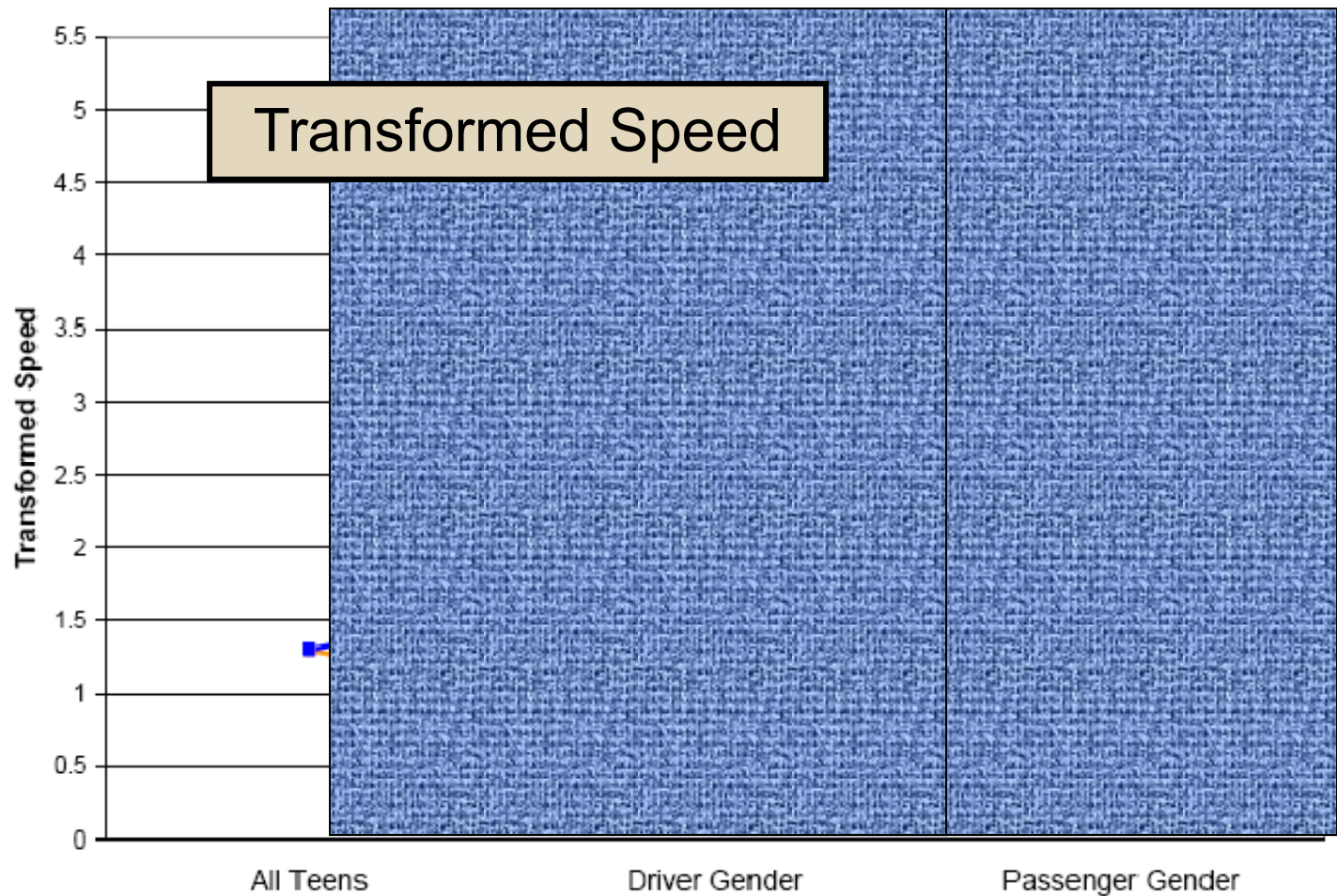
- Time stamp
- Speed
- Distance
- Headway (derived)

Superimposed
on video using
video-titrer



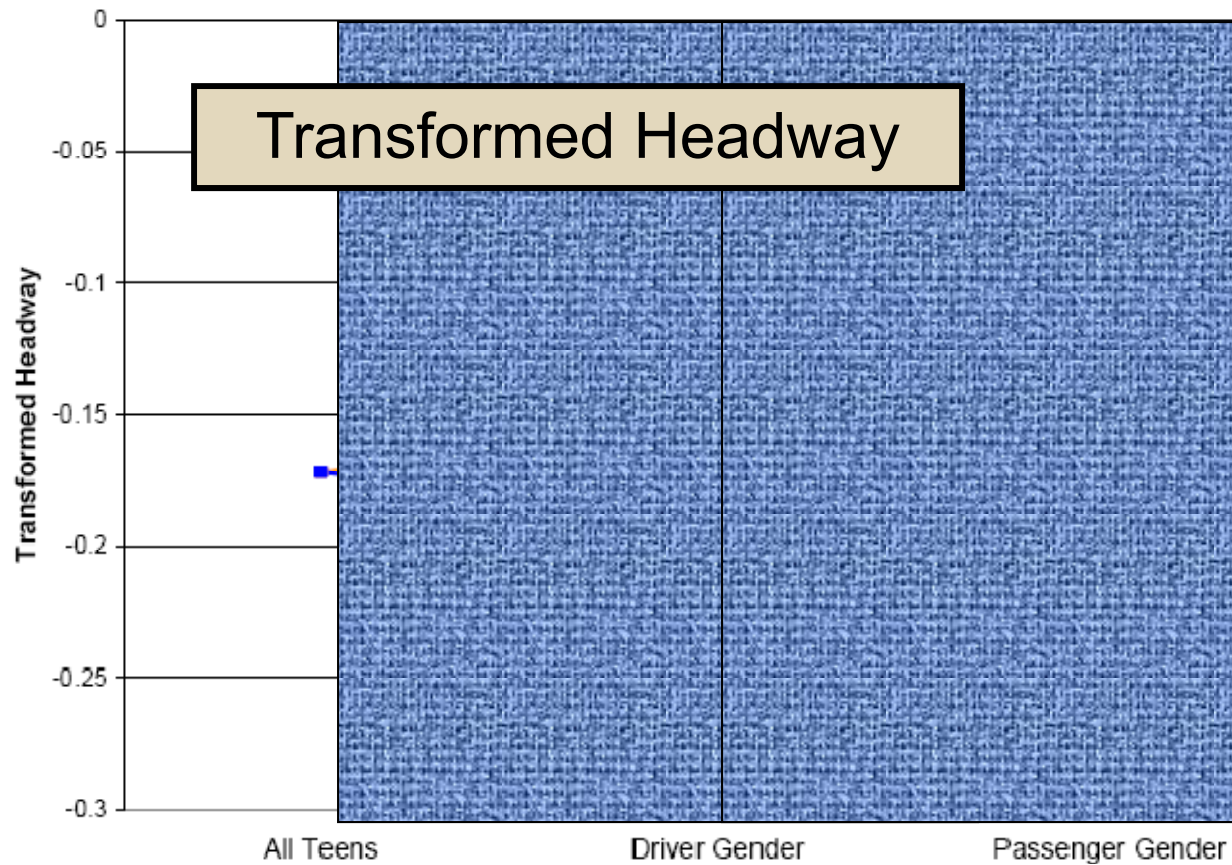


PASSENGERS & SPEED





PASSENGERS & HEADWAY





PERCENT HIGH RISK DRIVING [Speed >15 mph or headway ≤1s]

General traffic

9.6

Teen drivers/passengers

Male/None

16.8

Male/Male

21.7

Male/Female

5.5

Female/None

12.0

Female/Male

12.9

Female/Female

15.5



SOME LIMITATIONS TO OBSERVATIONAL METHOD

- Unknown link of risky driving behaviors to crash rate, injury, fatality
- Does not get at cause of behavior
- Limited ability to know vehicle occupant characteristics (beyond gender, approximate age)
- How do we expand method to get at other types of trips (not school-related) and still verify driver and passenger are teens?