The issue at hand

- Human performance and behavior contribute to over 90% of vehicular crashes.
- Roughly 10% of drivers account for almost 50% of the crash risk. Why?
  - impairment (due primarily to alcohol)
  - **inattention and distraction**
  - drowsiness
  - judgment-related error.
- **Newly licensed teen drivers have 3X the fatality rate of adults.**

A New Method of Study: Large-Scale Naturalistic Driving

- **20 to 2500 drivers**
- **No instructions**
- **6 mos. to 3 yrs.**
- **10,000's of hours**
- **Many MVMT**

Why are naturalistic data important?

Data based upon Police Accident Reports is our primary source of data:

Well meaning, nominally trained police officers coming upon a scene is the source of much of our data

- Vehicles have often been moved
- Drivers/Passengers may be deceased or injured
- Drivers/Passenger are almost always dazed
- Pre-crash events happen so fast key elements are forgotten by driver/passenger and left out by witnesses
- Drivers sometimes purposely deceive police officers to avoid prosecution or embarrassment
- Driver/Passengers may not be looking in the correct location to see critical information

Driver inattention is a key contributing factor in crashes for both truck and light vehicles

- The largest single contributing factor is **looking away from the roadway** just prior to an unexpected event or condition. This **accounts for somewhere between 70% and 90% of unsafe events**.
- Engaging in activities that are unrelated to driving (i.e., "secondary tasks") and external distractions account for most of the inattention-related risk.
  - **High Risk: Looking away many times and/or long periods**
  - **Includes: Cell phone dialing, text messaging, Ipod/MP3 manipulation, and internet interaction.**
  - Much less risk: Eating/drinking, talking to passengers, simple radio functions, and even talking on a cell phone.
- **Teens are four times more likely to be involved in a near crash or crash while performing a secondary task than their adult counterparts.**

Relative Crash Risks for Types of Inattention: A First

Type of Inattention	OR	Lower Confidence Level	Upper Confidence Level
Complex Secondary Task	**3.1**	**1.7**	**5.5**
Moderate Secondary Task	**2.1**	**1.6**	**2.7**
Simple Secondary Task	1.2	0.9	1.6
Fatigue	**6.2**	**4.6**	**8.5**
Driving-Related Inattention to the Forward Road > 2 s	**0.5**	**0.2**	**0.8**
Driving-Related Inattention to the Forward Road < 2 s	**0.2**	**0.2**	**0.3**
Reaching for moving object	**8.8**	**2.5**	**31.2**
Reading	**3.4**	**1.7**	**6.5**
Dialing Hand-held Device	**2.8**	**1.6**	**4.9**
Applying Make-up	**3.1**	**1.3**	**7.9**
Handling CD	2.3	0.3	17.0
Eating	1.6	0.9	2.7
Talking/Listening to Hand Held	1.3	0.9	1.8
Drinking	1.0	0.3	3.2
Adjusting Radio	0.6	0.1	2.2
Passenger in Adjacent Seat	**0.5**	**0.4**	**0.7**

Cell Phone Ban

- Prohibits wireless communication device use for those under 18:
  - Unless the vehicle is lawfully stopped
  - Except in case of emergency
- Is a secondary offense (can only be charged in conjunction with another, primary offense
  - In other words, they cannot be pulled over if seen talking on a cell phone, unless they are also breaking the law in another way

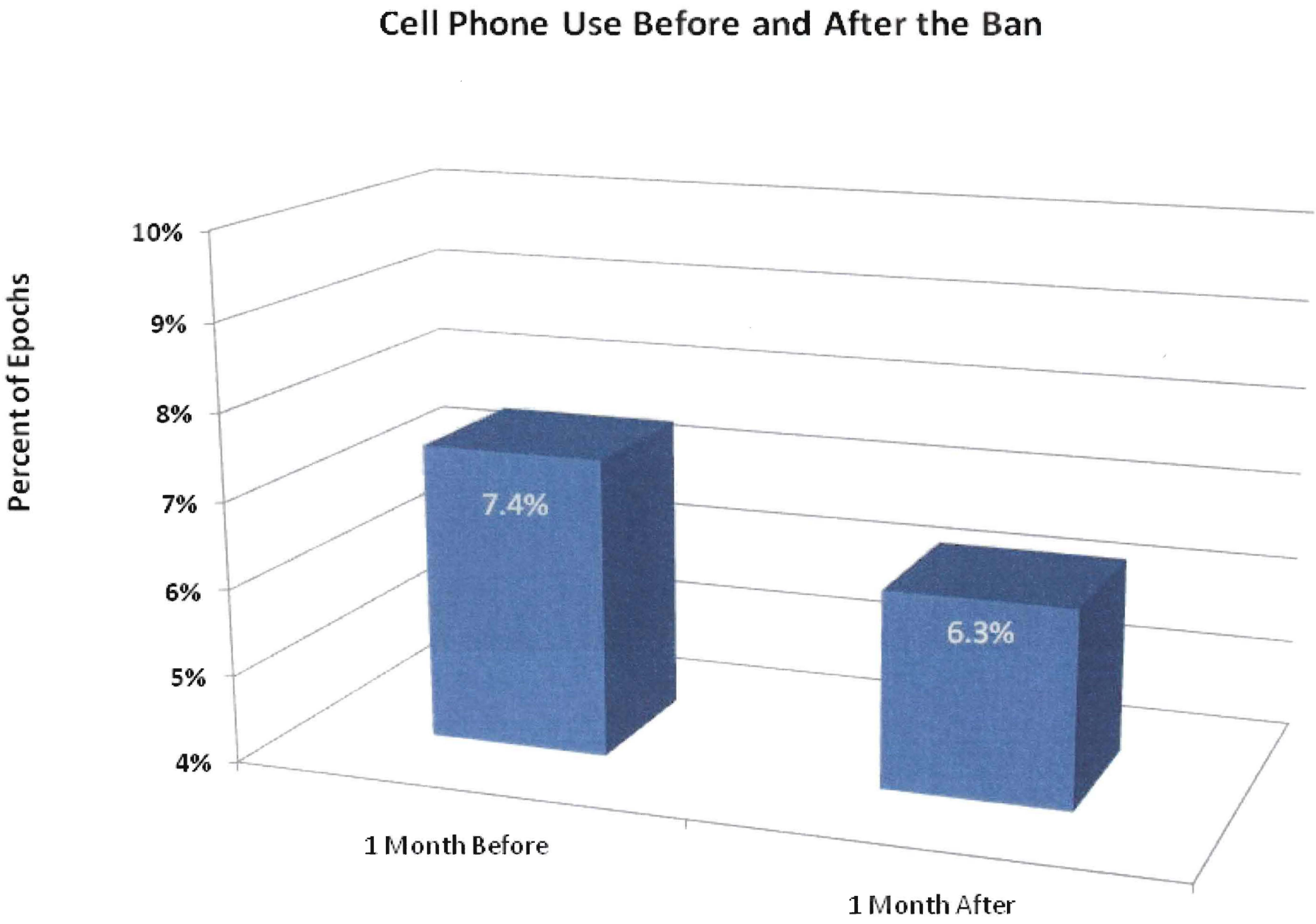
Research Questions

- Did the ban:
  - Affect the number of times cell phones were used in the month after the ban?
  - Affect the types of cell phone functions used?
  - Affect the task time for cell phone tasks?
  - Differentially affect "newer" novice drivers, compared to those who had been licensed for a while?

Did the ban:

Affect the number of times cell phones were used in the month after the ban?

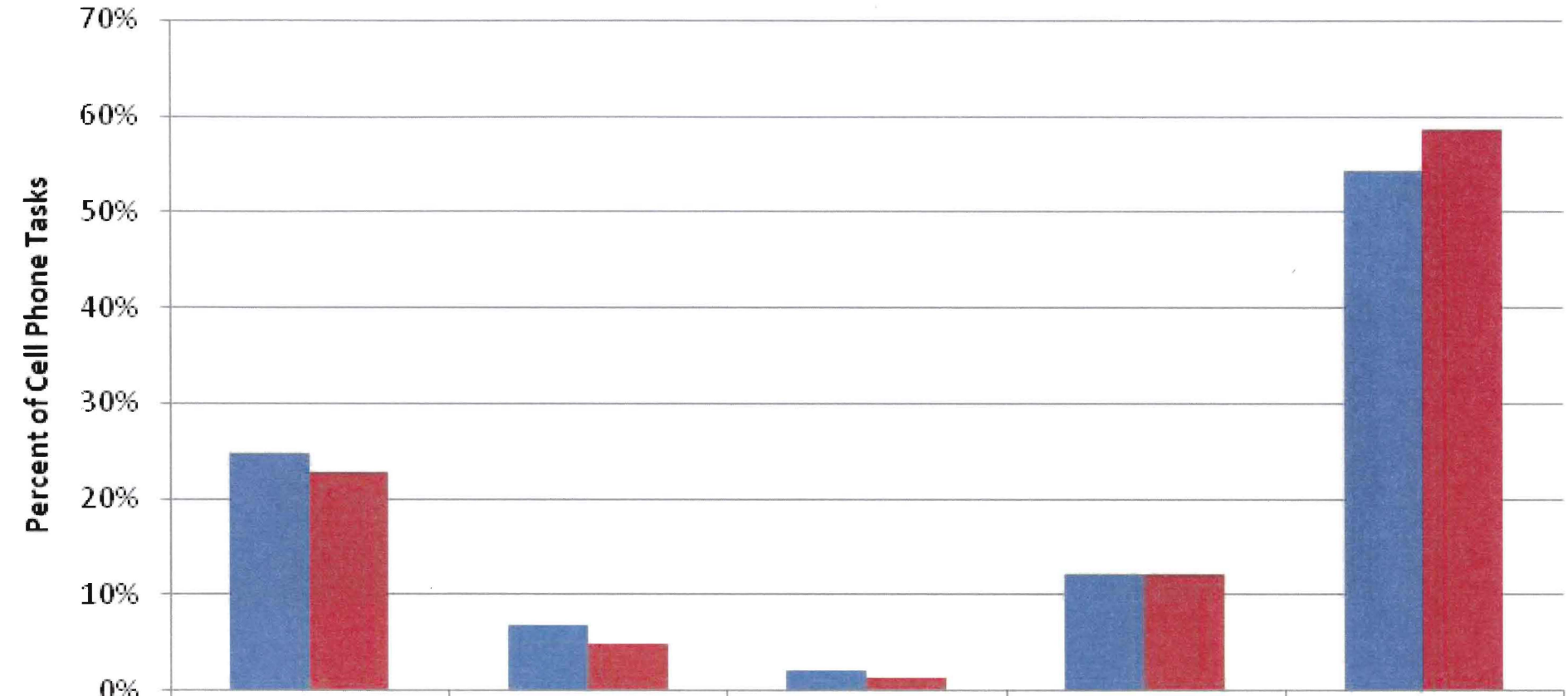
Not significant



Did the ban:

Affect the types of cell phone functions used?

Not significant



	Text messaging	Dialing	Locating/answering	Looking at display	Talking/listening
1 Month Before	25%	7%	2%	12%	54%
1 Month After	23%	5%	1%	12%	59%

Conclusions

- Law had a nominal, positive effect within the first month
- Strong evidence of reduced use for drivers with less experience

Conclusions

If legislators intend for teens not to use wireless devices while driving, the law should be a primary offense

- Until teens are charged themselves or know someone who is charged, they are unlikely to change their use patterns to a large degree
- Consequences are also important; consider higher fines and a zero tolerance rule for distracted driving in conjunction with a moving violation

Concluding remarks

We have a teen distracted driving epidemic

- New devices that are extremely dangerous to use while driving
  - More distracting than "traditional" automotive tasks by a factor of 10 or more
- New generation of users with:
  1. A high degree of confidence,
  2. An insatiable motivation to use the technology,
  3. An underdeveloped sense of risk perception, and
  4. A propensity to exercise poor judgment

Concluding remarks

The passage of primary laws with serious consequences is one of the few ways that we have to stem the tide of teen driving distraction and save lives

A general law would also save the lives of adult drivers; particularly younger adults