



**MONASH** University  
Accident Research Centre



# **BEHAVIOURAL ADAPTATION TO MOBILE PHONE LEGISLATION:**




***COULD THERE BE UNINTENDED CONSEQUENCES OF  
PARTIAL BANS?***

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## Behavioural adaptation

-  **The collection of behaviour(s) that occurs following a change to the road traffic system (OECD, 1990)**
-  **Typically, not intended by the initiators of the change**
-  **Mostly interested in changes that have a negative effect on road safety**



## Form of behavioural adaptation:

- 🚗 Will depend on the nature of the intervention under study
- 🚗 E.g., if dynamic route guidance, congestion in residential areas (Kubota et al., 1995)





## Form of behavioural adaptation:



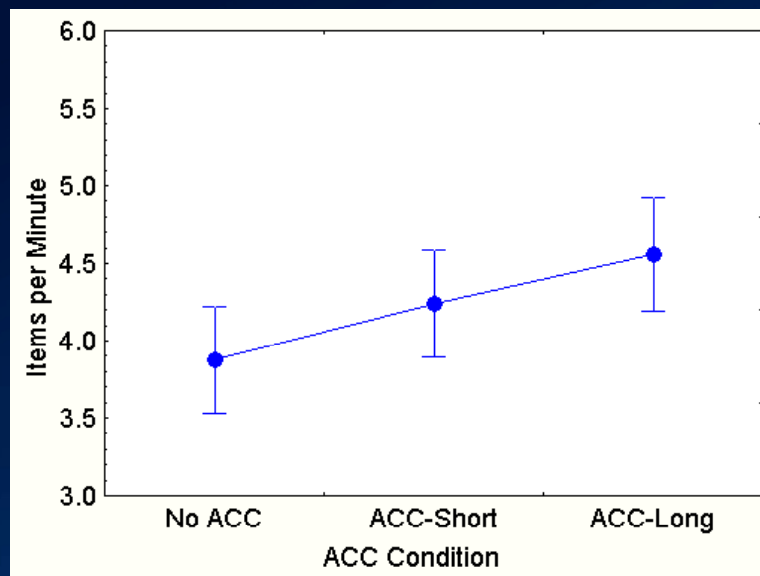
(Rudin-Brown & Parker, 2004)




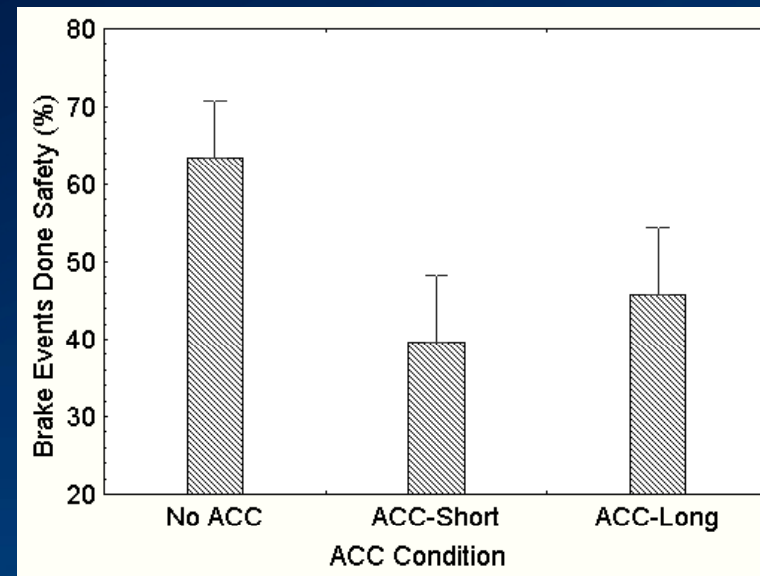
# Behavioural adaptation to adaptive cruise control (ACC):

## WITH ACC:

 Increased number of  
stock price entries



 Fewer instances of  
'safe' (< 2 s) braking







## What about mobile phone legislation?



**Ban all mobile phones (handheld *and* hands free) while driving**

➤ Not popular due to social, political and economic pressures



***Partial* ban more common → bans handheld while allowing hands free**



**Many jurisdictions ban handheld; also ban hands free in novices**





## What about mobile phone legislation?



**Argument against partial bans on handheld phone use → will send message that hands free is not distracting**



**Another possibility → could partial bans be inadvertently encouraging drivers to choose other, more *easily concealed* forms of electronic communication?**





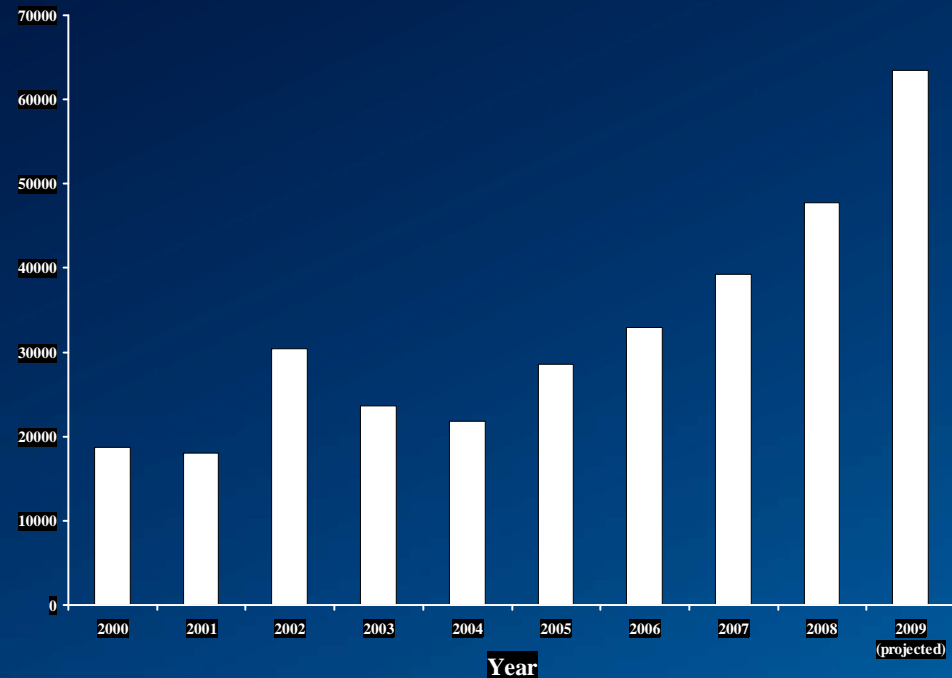
## What about mobile phone legislation?



**Victoria, Australia → legislation prohibiting handheld mobile phone use by drivers since 1960**



**Number of 'penalty notices' increasing steadily since 2004:**







## Mobile phone observational survey:



**Conducted May 2009**



**Aim: quantify drivers' phone use and other engagement in other non-driving activities**



**60 km/h zones; traffic lights; clear visibility**



## Mobile phone observational survey

 **5,813 vehicles: three sites x six time periods:**

Time	Site		
	CBD	Suburb 1	Suburb 2
8-9am	336	160*	403
10-11am	330	353	334
2-3pm	346	339	332
4.30-5.30pm	399	92*	389
10-11am (weekend)	277	337	344
2-3pm (weekend)	328	346	368

\* Denotes times when the inter-observer reliability was assessed.



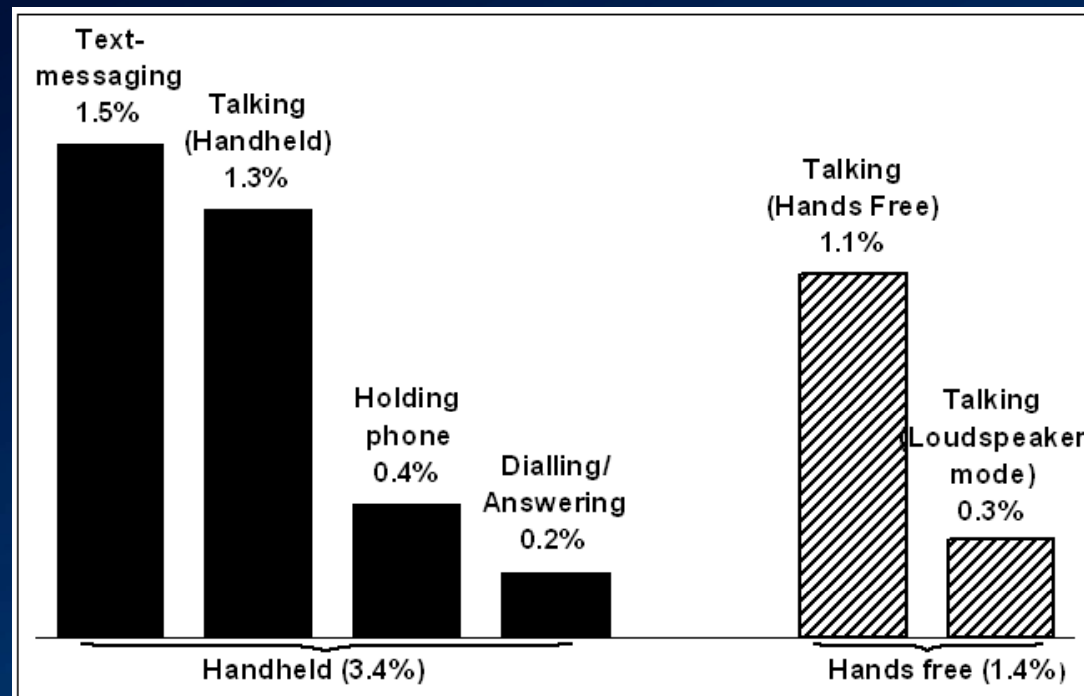
## Mobile phone observational survey: Results



**5% of drivers observed using mobile phone;  
(3.4% handheld; 1.4% hands free)**



**Most common activity: text-messaging (1.5%)**





## Characteristics of drivers :



### **All phone activities:**

- a) AGE [younger (under 30) > middle aged (30-50) > older (over 50)]
- b) TIME-OF-WEEK [weekday > weekend]



### **Text-messaging:**

- a) AGE [younger > middle aged > older]
- b) TIME-OF-WEEK [weekday > weekend]



### **Talking (handheld):**

- a) AGE [younger > middle aged > older]



## Discussion:



**Rate of handheld phone use similar to other jurisdictions with partial bans**



**One of first observational surveys to quantify prevalence of text-messaging (1.5%)**

➤ higher than expected



**More likely among younger drivers**

➤ consistent with previous research



**More likely on weekdays than weekends**



**While inconclusive, results support the possibility of behavioural adaptation to partial ban**





## Why use handheld phones despite legislation?



**Effort re: additional cost, installation, and set-up of hands free phones?**



**Perception that enforcement of ban is not taken seriously and/or is not reliable?** (Young & Lenné, 2008)



**Age of Victorian vehicle fleet?**

- Drivers of pre-2000 vehicles less likely than driver of newer model vehicles to use hands free



**Study design? (e.g., stationary vehicles)**



**Increased functionality of mobile phones?**



## Conclusions:



### **More research!**

- Compare results to another, similar jurisdiction *without* a partial ban on mobile phone use (e.g. *NZ*)
- Regular surveys to gauge future trends in mobile phone and other technology use over time



**Legislators should consider any unintended consequences of partial bans or other legal countermeasures re: merits *vs.* costs**



*Thank you.*

*Tack.*