Traffic policing and road safety for individuals and for populations

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“Extreme drivers” and the “Everyday driver”

- A starting point . . . we can distinguish between “extreme drivers” and the “everyday driver”
- A way of thinking about traffic offences is to consider drivers as belonging to one of three groups:
  - law-abiding drivers who do not commit offences;
  - extreme drivers who are contemptuous of their role in the road transport system and who undertake criminal behaviour (again, a small but identifiable group, perhaps say, BAC >0.10, speeding >20 km/h over the limit, not wearing seat belts, etc.); and
  - those drivers who haven’t “figured it out yet” and remain to be convinced that their behaviour is unsafe.

Wundersitz & Baldock (2011) The relative contribution of system failures and extreme behaviour in South Australian crashes

A simple truth

- A simple truth is so many crashes, injuries and fatalities are avoidable, being the result of speeding, drink-driving, fatigue, distraction, and no seat belts
- But we are now recognising that many crashes occur as a result of drivers performing illegal manoeuvres:
  - for example, illegal manoeuvres from failing to signal, crossing double lines, running red lights, and taking forbidden U-turns contributed to one quarter of all fatal crashes in Queensland in 2011
  - this was the single biggest contributor to road fatalities in Queensland in 2011
- We need enhancements to current data collection, particularly information on crashes, near misses and incidents
- While police continue to blitz speeding and drink-driving, etc., they also must try to convince motorists to obey even the most fundamental of road rules.

Who obeys the road rules?

- Road users do obey road rules if they make sense and are useful to travel
- But a problem is that sometimes what a road user understands about the sensibility and appropriateness of a road rule, and what they accept as being sufficiently “safe” for travel, are not what is desired.
- One way of thinking about this is that while some people are violators and intend to behave in illegal and non-compliant ways (because they think they won’t get caught), many commit violations because they . . .
  - Apply a rule, but in the wrong context (make a mistake);
  - They forget the rule (a lapse); or
  - They intend to comply but they are distracted and inattentive (a slip)

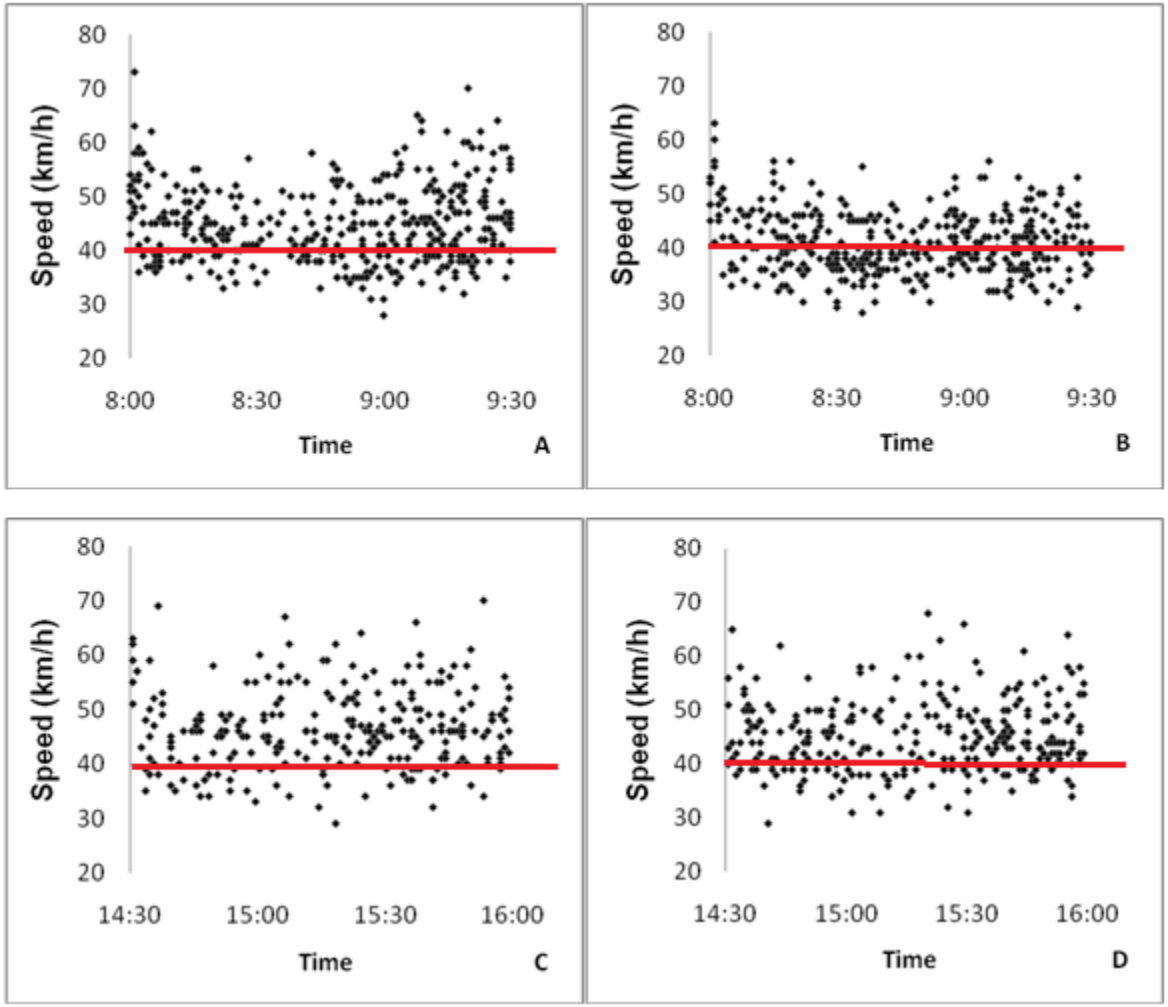
Faulks & Lane (2012). The Australian experience with road safety policy and traffic enforcement: Actions speak louder than words. Keynote presentation to the National Conference on Traffic Laws and Rules: Opportunities and Challenges Ahead, Teheran, Iran

Speed, speeding and speed limits?

- We present drivers with several “speed” concepts:
  - Speed limits – generally, but also by location, by vehicle type, by licence class, unexpectedly (work zones)
  - Advisory speeds
  - The notion of “maintaining traffic speed” (or travel speed, relative to other road users)
  - The notion of “drive to the conditions”
- These different speed concepts require discriminative learning by drivers.
- Do we adequately support these concepts in education and messaging about “safe speeds”?
- The bottom line is that relatively small changes in travel speed (<5%) result in relatively large changes in road casualty outcomes.

Violations in school zones – extreme or everyday drivers?

- (A) 70.0% of all vehicles entering school zones during the morning school zone period exceeded 40km/h, while (B) 47.6% of vehicles exiting the zone exceeded the limit.
- During the afternoon school zone period, (C) 78.8% of the vehicles entering, and (D) 75.4% of those exiting, school zones exceeded the reduced 40km/h school zone limit.



Faulks, Irwin & Chekaluk (2011) Factors affecting speeding in 40 km/h school zones in New South Wales. Australasian Road Safety Research, Policing and Education Conference, Perth, 6-9 November 2011.

Measures to address speeding

- Enforcement measures to address illegal speeds are well known: radar, LIDAR, fixed speed cameras, “safety cameras” (fixed speed cameras at signalised intersections), and mobile speed cameras
- A challenge about speeding is that it is a transitory behaviour, that is, you can be speeding one minute, and compliant with the speed limit the next.
- Point-to-point speed enforcement measures the average speed of vehicles over an length of road, but it is only being used for heavy vehicle speed enforcement in NSW
- With P2P enforcement, it is what you do, as a driver, over distance and over time that can be bought to attention, and enforced.
- In a sense, then, the problem of dealing with the transitory speeding behaviour is gone, replaced with the new “horizon” of dealing with sustained speeding as an illegal behaviour.

Future measures to address speeding

- There are a number of additional measures that will impact on future traffic policing for illegal speeds, and they are not enforcement measures . . .
- Intelligent Speed Adaptation – Australia leads the world in the commercialisation of ISA . . . everyone keeps running trials, including a number here in Australia, but since 2007 anyone has been able go to their local shopping centre and buy a world-class ISA device that has digital maps of the full Australian road network and the speed limits for the road sections within that network, all for less than $200. It is a passive ISA, advising the driver of the speed limit.
  - NEWS FLASH: You can now down load this functionality as a free app from iStore!
- For a while, you could have paid $2-3,000 for an Australian company to install an intervening ISA system in their vehicle, and never exceed the speed limit. That company has pulled out of the general market
- And, ISA devices are on-board data recorders too!

Drink driving

- The enforcement of drink driving through random breath testing is one of Australia's great road safety success stories and one of Australia's great policing success stories.
  - That we convinced our community that it is appropriate and proper for police to pull over a person driving down the road, who is otherwise showing no sign of impairment or who has not been observed committing an offence, and require them to identify themselves and submit to a breath alcohol test, and then be arrested if the test is failed, is extraordinary, and shows that the "civil society" relationships between the community, police, governments and the justice authorities are strong and resilient.
- The future developments in drink driving countermeasures lie more in the areas of alcohol control policy and dealing with offenders (e.g., education requirements, interlocks).

Drug driving

- While the introduction of speed camera enforcement technologies has been fraught, police in Australia have had a remarkable success with the introduction of random drug testing
  - this is perhaps even more extraordinary as the legislation does not require police to establish impairment.
- Again, the future developments in drug driving countermeasures lie more in the areas of control policy for illegal drugs and dealing with offenders (e.g., education requirements, fitness to drive issues in addiction medicine).
- However, drug driving related to prescription and therapeutic drugs remains a difficult issue, particularly for older people who may well be polydrug users.

The right to be on the road

- Police in Australia have also had remarkable success with the introduction of ANPR, Automatic Number Plate Recognition.
- Driver licensing offences, vehicle registration offences (and by default mandatory insurance requirements – CTP) can be addressed in a way not hitherto possible.
- Again, the future developments in these “road access” countermeasures lie more in the intelligence-led deployment of the technology, but also in linking this traffic policing technology into the general dealing with crime in the community . . . how else to those “of a criminal mind” get around?
- There have been attempts to use traffic policing tactics to address general crime, and perhaps these need to be revisited (e.g., random roadwatch policing (Tas, Qld), Operations Medea & Waratah (NSW), etc.)

Occupant protection and seat belt enforcement

- One area of traffic policing that remains problematic relates to occupant protection enforcement – seat belt wearing, child restraints, and inappropriate carriage
- While seat belt wearing compliance for drivers is generally very high, the non-wearing of belts by rear seat passengers remains an issue, and the incidence of non-wearing by vehicle occupants in fatal crashes is significant
- Inappropriate carriage – non-use of child restraints, over loading with passengers, conveying passengers in open trays of utes and trucks, and car surfing are all issues
- The major failure of road safety policy for occupant protection is the inability to secure legislative provision requiring seat belt interlocks (generally in the vehicle fleet, or as a licensing condition for offenders).

The interface between road safety and traffic policing

- We have no longer have a simple structure to underpin the strategic interface between road safety agencies and enforcement and compliance agencies and entities.

- When I started working in road safety in New South Wales in the late 1980s, the structures were simple . . .
  - NSW police did the enforcement and processed the fines
  - the RTA did the road safety prevention and the roads management, and
  - the NRMA represented the road users.
- There were some outliers (e.g, the RTA did heavy vehicle enforcement, Transport did public passengers, etc.), but this was minor, and there were, in essence, three strategic partners who were strongly linked.
- Now . . .

Who enforces traffic policing in NSW

- This is the enforcement structure supporting road safety in New South Wales in 2012 (the story will be different for each Australian State and Territory)
  - Traffic policing by specialist Highway Patrol police and also by general duties police, including alcohol, drug, speeding and vehicle and licensing offences
  - Red light enforcement by NSW Transport
  - Fixed speed camera enforcement by NSW Transport (includes “safety cameras” at intersections combining red light and fixed speed cameras)
  - Mobile speed camera enforcement by private contract
  - Parking enforcement by local councils (and related entities such as universities)
  - Public passenger vehicle-related enforcement by NSW Transport
  - Work-related use of vehicles – enforcement by WorkCover NSW
  - Some aspects of heavy vehicle enforcement by NSW Transport, and specialist access provisions by private contract
  - Enforcement of vehicle noise and emissions by NSW Office of Environment and Heritage
  - Enforcement of hazardous loads by NSW Office of Environment and Heritage
  - Fines processing by the Office of State Debt Recovery (NSW Treasury)
- This complex structure creates an uncoupled system, mixing public and private sector interests, and there is no means of monitoring and determining if it is working well.

What is traffic policing about?

- Traffic policing is about guiding, enforcing and promoting safe road behaviour within the road transport system.
- Typically, when we think of traffic policing, we think of enforcement alone . . . the detection, the ticketing, the penalties.
- But traffic policing has traditionally been much more than that,
  - partly as a consequence of not having the technologies to effectively enforce until the 1980s and 1990s and
  - partly as a consequence of the development of new technologies to monitor and analyse crime in the community.
- The Safe System approach provides perhaps the strongest direction for several decades, that guiding, enforcing and promoting are the three core taskings for traffic policing (or at the least the opportunity to take that direction).

Enforcement – long range cameras

- Long range cameras also target risky behaviours and illegal manoeuvres
  - New camera technology to target illegal manoeuvres, drivers not wearing seat belts, drivers using communication devices (mobile phones, texting, etc.)
  - Motorists photographed by NZ Police crossing double yellow lines, summer 2011-12, Otago, South Island

Enforcement – Event Data Recorders

- Use of event data recorders (EVRs) to provide a record of driver behaviour appears to have great promise
  - Already widely used in industrial contexts, including mining
  - Widely used for trucks in North America, but not in Australia
- Data recorded may include: vehicle speed; engine RPM; idle time; start time; finish time; engine hours; driving hours; heavy braking; heavy acceleration; driver identification; vehicle odometer; distance travelled
- The focus is on “exceptions”, i.e. bad and illegal behaviour

Data and recording systems

- Most Australian police are already well equipped – or well on the way to be equipped – with data recording technologies (audio and video recorders, GPS systems, on-board computers, etc.) for officers and vehicles.
- These technologies are cheap, and are easily available
- Most of us already have this functionality . . in our smartphones
- So it is expected that motorists will have these technologies too, but it may be a mixed result for them, as the data should support the traffic policing intervention
- But is the legislation in place to enable that data to be accessed (including OEM vehicle data systems)?

Tolerances

- The concepts of intentional violations, and the errors associated with mistakes, lapses and slips lie at the base of traffic policing and its aims for guiding, enforcing and promoting safe road behaviour within the road transport system.
- How does a police officer tell between these causes of the observed illegal behaviour, and what should be the response?
- These issues are all involved in the question of tolerances, and that is a political matter as much as anything else.
- It is also a commercial issue:
  - In NSW, the State Debt Recovery Office does not allow discretion for parking offences (revenue to local councils); or tolerances for camera offences detected by private contractors or NSW Transport (revenues to consolidated revenue, with payments for “actionable” enforcement to the private contractor)

Hypothecation of fine revenue

- The accusation of “revenue raising” as the alleged reason for traffic policing can be addressed through hypothecation.
- Typically, this is done for traffic fines revenue, which are “earmarked” for road safety or road transport-related purposes: the WA Road Trauma Trust Account is an example, receiving hypothecated revenue from traffic camera fines.
  - NEWSFLASH: This approach is being introduced in NSW for speed camera revenues
- Treasuries dislike and resist hypothecation, arguing it restricts the budgetary process, but there are good reasons for its use in the context of the safe operation of the roads transport system.

Statistics

- The challenge is to continue to innovate on the basis of sound safety principles, and to go beyond what is currently known to be effective to achieve even higher levels of safety performance.
- In doing this, we need to have the capacity to monitor, audit and report the appropriate metrics to assess performance (deaths per population, driver holders, vehicles registered and vehicle distance driven)
- Reliance on any particular one of these metrics will yield different priorities for action, and there is now a history of road safety agencies changing the metrics to ensure that the best safety performance is indicated (currently, deaths per vehicle distance driven is used in the NSW State Plan).

Road safety strategies – at the edges

- Road safety activities are strongly configured by the road safety strategies at national, state/territory and local levels – the current strategies seem well developed and wide-ranging, but many of the innovations that will impact over the next decade may not be identified at all, or may appear as “mentions” rather than major elements
- So, implement the strategies but “watch the margins” in social, economic, technological and political arenas for opportunities hitherto unrecognised
- “Solutions do not have to be of the same form as the problem” –
  - you can tackle speeding through insurance products; or
  - loss of control through speed, driver inattention or incapacitation can be addressed through electronic stability control and other braking systems; or
  - wire rope barriers protect impaired drivers without addressing drink driving, drug driving, driver inattention and distraction

What else is missing in the interface between road safety and traffic policing?

- A “smart card” drivers licence, allowing
  - Self-generating infringement notices
  - Enforcement without penalties – recorded warnings and “constabulary discretion”
- In police administration – looking into ways of minimising down time and maximising on-road time, e.g.,
  - Automatic download of vehicle, officer, and offence-related data
  - Video links to courts
  - Specific tasking for HWY
- Special constables in traffic policing
- Traffic Crash Review Teams