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Perspective on Road Safety

Promoting “Safe Speeds” behaviour by changing the conversation around speed and speeding

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Key Findings

- The evidence establishing that speed moderation is an essential “holding measure” (and sometimes a long-term measure) in the implementation of a “Safe System” is overwhelming
- Community norms entrench low-level speeding
- Intense enforcement is critical but the community is antagonistic
- Effective enforcement changes behaviour but attitudes lag decades behind
- A new long-term strategy to address the community norms and support intense enforcement is proposed to sustain and extend compliance

Abstract

Traditional speed limit setting and speed enforcement practices created a community norm which historically accepted, indeed valued, low-level speeding. Public education strategies to date have largely focussed on conveying crash risk and casualty consequences and have lacked credibility. The approach required stems from preventive medicine and is analogous to promoting inoculation; something everyone needs to do to protect the community as well as themselves. Elements of a proposed new strategy are outlined.

Keywords

Speed; speeding; public education; behaviours; enforcement

Introduction

The scientific evidence establishing the causal links between both casualty crash likelihood and severity and each of increased speed limits, limits set above the level of safety provided by extant conditions, and travel speeds above most limits (even by small margins) is incontrovertible (Johnston, 2004; Johnston, Muir and Howard, 2014). The "Safe Speeds" pillar of the Safe Systems conceptual model recognises that speed moderation is the crucial holding measure to manage road trauma levels until sufficient investment in infrastructure and vehicle safety can raise network safety to sustainable levels. Matching travel speeds to extant vehicle and infrastructure conditions is fundamental.

Despite the overwhelming evidence, measures to moderate travel speed remain controversial and under constant public challenge. Enforcement practices, especially the use of speed cameras and small enforcement tolerances, are regularly challenged (Wells, 2011). Limits are not seen as high and the relationship between a limit and the level of safety in that section of infrastructure is not understood (Bunting, *et al* 2017). Efforts to convince road users to moderate their speed behaviour have had measurable but limited success and such change as there has been has only occurred in conjunction with intense enforcement (VAGO, 2011).

The social and cultural context of low-level speeding

Exceeding the speed limit by small margins is endemic. Helen Wells describes it as *normal deviant behaviour* and as the *everyday crime of the law-abiding* (Wells, 2011). Many factors contribute to explaining why the cultural context is accepting of speed limit non-compliance:

1. The way we traditionally set limits was to measure speed distributions on different classes of road and set "default" limits around the 85th percentiles of the distributions under an assumption that compliance will be highest when most people are comfortable travelling at or around that speed. While we have since moved well past this practice we have (largely) retained default limits derived from the old days, especially on rural roads: limits that are discordant with the level of infrastructure safety built into many of these roads. We are out of step with accepted international practice; for example, two-lane two-way rural limits of 100 km/h are higher than in most comparable countries. In urban areas, particularly on arterials, especially those on older lower standard outer metropolitan arterials serving population growth areas, reducing traditional limits to match constructed and operating safety levels has proven difficult. Again, this is out of step with international practice.
2. Historically, police applied a tolerance to their speed enforcement of the order of 10% or 10km/h. For example, in a 60 zone, tickets were not issued for speeds below 70km/h. While the tolerance was never official (public) policy it was widely known and accepted by motorists with the resultant widespread belief that the number on a speed limit sign was not a limit *per se* and a view that travel speeds a little in excess were clearly recognised by government as safe.
3. Personal daily experience reinforces the belief that low-level speeding is not dangerous – the behaviour is endemic and crash risk for any individual trip is clearly very low. Trying to convince people that the risks are high and the consequences substantial lacks credibility (Blackwell, Zanker and Davidson, 2017). In short, we have an internalised speed limit which is the product of perceived enforcement tolerances and low perceived risk. Intense enforcement introduces a risk of detection to modify behaviour and it is only this perceived risk that underpins the speed moderation gains to date (Johnston, Muir and Howard, 2014).
4. Populist statements from government leaders has provided further reinforcement. For example, in the early 2000's in Victoria, enforcement tolerances and the use of speed cameras became an election issue with one party promising to restore the former and decrease the latter. Of course, political positions are underpinned by the prevailing community views and are part of the cultural context. The Victorian government requested an investigation of the integrity, accuracy and efficiency of the camera system on a high-speed toll road following public complaints. This toll road had fixed cameras that were also linked to create a point-to-point system. The report concluded *that the …public are …slowing at each of the cameras and then speeding up …. resulting in readings of higher point-to-point speed than instantaneous speed.* (Victorian Road Safety Camera Commissioner 2017)
5. What is credible to the public is that speeds well above the posted limits are both high risk and that resultant crashes have significant consequences. This is reinforced almost daily through the common media focus on dramatic crashes with their frequent reference to very high speeds. Many police still tend to focus their on-road speed interceptions on high-end speeders and many front-line officers hold the prevailing public views about low-level speeding (Johnston, Muir and Howard, 2014).
6. There is nothing in vehicle design that fosters speed moderation. For example, the speedometer is not a "fit for purpose" instrument. Typically, more than half the speedometer shows speeds that are illegal, even on our highest speed rural roads. The portion of the dial for the low range urban speeds is less than a third of the total. Vehicle advertising promotes power and performance – admittedly not to the extent that used to prevail, but clearly performance still sells. There is not a single vehicle safety design rule that addresses top speed capability or acceleration rates.
7. Unlike drink-driving, which is a once-a-journey decision, speed choice is a moment-to-moment continuous set of decision choices. There are instant perceived rewards from low-level speeding such as

overtaking a vehicle ahead, clearing an intersection before the signals change, and so on. As congestion increases so does the saliency of these immediate rewards.

A perspective from preventive medicine

Given the social and cultural context in which low-level speeding occurs it is instructive to examine preventive medicine for a possible way forward. Whenever a low risk is widespread within a population the most effective strategy is to seek population change rather than to treat the minority sub-population at highest risk (Rose, 1992). For example, seeking to reduce average blood pressure across an entire population will prevent more heart disease than treating only those currently with elevated levels. Rose puts it thus: *It is an irony of preventive medicine that many people must take precautions to prevent illness in only a few.*

In road safety, the success of mandatory seat-belt wearing legislation is that it protects the whole population, analogous to inoculation, when most are exposed to a very low risk at the individual trip level. Similarly, although most seriously injured drink-drivers have blood alcohol levels well above 0.10, setting the legal limit at 0.05 sends a message about separating drinking from driving and, when coupled with random breath testing, facilitates population level change. In the same vein, low-level speeding is of lower casualty crash risk than high end speeding but it is endemic whereas high end speeding is undertaken by only a small minority of drivers. A small widespread risk generates a larger absolute number of casualty crashes than a relatively rare high risk (Johnston, Muir and Howard, 2014). Thus, this fundamental preventive medicine principle underpins the system-wide speed moderation strategy.

While the strategy is sound, effective implementation is problematic. It requires road users to accept the value of changing personal behaviour in order that (unknown) others may benefit. In the case of seat belt wearing, at the individual level little effort is required, no transient reward is forgone and there is perceived insurance value. Strict speed limit compliance requires effort, forgoes perceived immediate rewards and, since crash risk is perceived as low, insurance is irrelevant.

It also seems that many drivers will "game" the system (see the Victorian Road Safety Camera Commissioner 2017 findings). It is a difficult journey to achieve willingly compliant behaviour. In a sense, population-wide behaviour change requires acceptance of the principle of "the greatest good for the greatest number" best explained by reference to the classic economic case of the dilemma of the commons (Rose, 1992). In centuries past, each village in the UK held land "in common" for villagers to graze stock. If individual villagers increased the number of animals they grazed the commons became unsustainable, hence each villager had to forgo personal gain in favour of communal benefit. Public roads are clearly held in common – ownership is joint, the large number of users have independent access, no one user can control the actions of others and total use can exceed supply. Yet road use behaviour appears determined by personal immediate gratification (Vanderbilt, 2008).

Facing the challenge

The inescapable conclusions are that the community-at-large simply does not accept that current speed limits on poorer standard roads need to be reduced as a priority or that low-level speeding is a risky behaviour. It seems the immediate rewards gained through everyday personal experience of the behaviour entrench these views. Success in behaviour change has been limited to intense enforcement, supplemented by public education seeking to justify that enforcement. It would seem from the ongoing opposition to intense enforcement that new public education strategies are needed. The principle is to mirror the social context for belt wearing and drink-driving to make low-level speeding undesirable from a community perspective. Turn enforcement into a positive.

The challenge to gain support for lower limits on less safe roads is complex and requires targeted education at regional and local levels. The following are suggested as principles for such a strategy:

1. Publicise the notion that infrastructure can be safety star-rated, just as vehicles are, and demonstrate the links between low safety ratings and crash history on a range of roads. Find and use blatant examples of the mismatch between built safety and extant speed limits.
2. Transparently relate intense enforcement to lower star-rated roads (including higher risk roads such as those with high volumes of vulnerable road users). Make enforcement about addressing the mismatch.
3. Consider reducing limits only on blatant sub-standard sections. Emphasise that enforcement is a holding measure until the poor standard roads can be upgraded.
4. Enhance deterrence through an increase in cameras across the network to create and sustain the anywhere, anytime principle so successful to date (Johnston, Muir and Howard, 2014).
5. Ensure that all road sections are well signed for speed limits. Credibility requires that drivers cannot claim not to have known the limit of the section they were on.
6. Ensure there is an avenue for appeal against perceived unfair enforcement (such as the speed camera Commissioner in Victoria).
7. Ensure all speed infringement fine revenue is transparently allocated to infrastructure safety remediation (to reinforce point 2 above).
8. Praise the public for improved compliance. For example, publicise the casualty reductions achieved by speed limit reductions to date and by intense enforcement. Similarly, do not publicise the number of infringements issued but praise the level of compliance (typically less than one or two percent of vehicles passing a speed camera site are above the limit).

9. Promote the links between lower speed and improved fuel economy, reduced emissions and improved urban amenity. As with campaigns such as "Keep Australia Beautiful" an effort is required to make speed limit compliance socially desirable.

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