

Can Australia be a global leader in road safety?

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Abstract

The ambitious concept of the safe system approach to improving road safety evolved from the Vision Zero and Sustainable Safety concepts introduced in the mid-1990s, and was adopted by political leaders of all Australian jurisdictions in 2004. If Australia aspires to be a global road safety leader, it is instructive to learn from the achievements and shortcomings of its approach to the task. This paper reviews the experience of the Swedish Vision Zero and Dutch Sustainable Safety strategies as well as the United Kingdom's road safety experience. A review of practices and outcomes in these three top road safety-performing countries has revealed that all of them had similarly good achievements despite the fact that only two countries have formally adopted a safe system model. The United Kingdom does not appear to have adopted safe system principles in its road safety strategy but has a comprehensive policy to "Making roads safer". While the safe system framework calls specifically for road traffic systems that may be better managed taking into account human factors and physical tolerances, there are important socio-political challenges that must also be managed in order to optimise safety outcomes. In order to assure that the targeted reductions in road injury are achieved by the current Australian road safety strategy, it is imperative that any weaknesses in road safety efforts are identified and addressed. Australia has the potential to be a global leader in road safety but is held back by some important and persistent shortcomings in its commitment to the endeavour. Lessons from northern Europe can be helpful.

Introduction

The so-called *safe system* approach was adopted unanimously by the General Assembly of the United Nations who passed the resolution to make 2011-2020 a Decade of Action for road safety 64th Plenary Meeting (2010). Safe system principles have been progressively underpinning road safety strategies of a number of nation States around the world.

The history of the safe system approach extends back into the early 1990s when the Dutch introduced the concept of the Sustainable Safety policy in 1992. This policy discourages the planning and design of roads on which one can predict that there will be road deaths and serious injuries. In other words the roads that are provided should be designed to sustain human life. This is premised on the idea that virtually all road injury risk factors are known and can be ameliorated. The five principles of Sustainable Safety (F. Wegman, Atze, D., Schermers, G., van Vliet, P., 2005) are:

1. Functionality (of roads)
2. Homogeneity (of mass, speed and direction of road users)
3. Predictability (of road course and road user behaviour by a recognisable road design)
4. Forgivingness (of both the road/street environment and the road users)
5. State awareness (by the road user)

The ideal of Sustainable Safety is to segment the road hierarchy into single purpose functions, i.e. roads for through long-distance traffic, local access roads, and distributor roads for connecting through roads to local access roads. The safest mix of traffic would be those road users that are similar in mass, speed and direction of travel. Roads should be self-explaining and predictable, so that users can readily understand how best to use them. Taking into account, the errors likely to be made by road users, the road should also be designed to prevent impacts that will seriously harm a

road user. Finally, attention to encouraging and guiding road users to assess their capabilities and understand what is safe and unsafe behaviour in traffic is integral to Sustainable Safety.

These principles provide guidance to authorities, and represent a significant shift in thinking in road infrastructure development and management. However, the Sustainable Safety approach was being developed and implemented along side the ‘spearhead’ approach¹ that targeted interventions at the prevalent factors involved in serious crashes from 1992 to 1998 when Sustainable Safety was embraced conceptually by Dutch authorities (Koorstra et al., 2002). The Sustainable Safety Start-up Program will be discussed later in this paper.

Also in the 1990s, the Swedes conceived Vision Zero, a policy that was passed into law by the Swedish Parliament in 1997 (Belin, Tillgren, & Vedung, 2011). This policy also took a deliberate ethical position that no one should be seriously harmed by the mistakes they make while using roads. Vision Zero rejects the notion that safety and mobility are trade-offs. So, for example, if increased travel speed on a road is a mobility goal, this can only be permitted if and when there are safeguards in place to ensure that road users will not suffer as a result of the increased risk that the higher speed poses. As advised to the Swedish Parliament when proposing the adoption of Vision Zero, "...the speed limits within the road transport system should be determined by the technical standard of vehicles and roads so as not to exceed the level of violence that the human body can tolerate. The safer the roads and vehicles, the higher the speed that can be accepted. (Tingvall & Haworth, 1999)"

Vision Zero recognises that safety is a shared responsibility between the road system managers and users, but its significant departure was the idea that the focus should shift from problems caused by road users to the responsibilities of system designers (Fahlquist, 2006). It is a policy that looks holistically at the system interactions of the road infrastructure, motor vehicles and human road users, placing fundamental kinetic energy transfer parameters as guiding principles for the system. Importantly, it does not aim to eliminate crashes, but rather focuses on eliminating the risk of injuries.

Australia made some dramatic strides in reducing road deaths in the 1970s and 1980s. But while outperforming other countries such as the United States (US), it falls well short of the road fatality rates in Sweden, United Kingdom (UK) and The Netherlands. Table 1 provides the fatality rates for these countries.

Table 1. Road deaths per 100,000 inhabitants 1970, 1980, 1990, 2000, 2010

Country	Traffic deaths per 100,000 inhabitants in 1970, 1980, 1990, 2000 and 2010				
	1970	1980	1990	2000	2010
Australia	30.4	22.5	13.7	9.5	6.1
Netherlands	24.6	14.2	9.2	6.8	3.6
Sweden	16.3	10.2	9.1	6.7	2.8
United Kingdom	14.0	11.0	9.4	6.1	3.1
United States	25.7	22.5	17.9	15.3	10.6

Source: IRTAD 2011 Annual Report, OECD/ITF 2012 (IRTAD, 2012)

The fact that Australia is not a global leader has been recently acknowledged by the (recently appointed) Minister for Road Safety (House of Representatives, 2013). Australian fatality rates were higher than those in the US in 1970, then after 1980, the rates reduced more so than the US rates for all succeeding years reported. But the Australian road safety performance, as measured in road fatality rates, remained high relative to a number of northern European countries.

¹ Note that the “spearhead” approach refers to the Dutch road safety strategy preceding Sustainable Safety.

In the year 2004 Australian Transport Ministers agreed to adopt, in principle, the policy position that calls for an inherently safe road traffic system, termed the *safe system* approach (ATC, 2004). This approach was founded on the principles underpinning Vision Zero and Sustainable Safety. However, it is noted that traditionally road authorities have largely used US road and traffic engineering standards and guidelines. These standards are slow to change in line with the new safe system policy framework. Moreover, it has been suggested that the lack of leadership at a national level may be hindering practical progress for achieving a safe system (F. Wegman, 2011).

The aim of this paper is to examine the differences in road safety advances, approaches and performance in Australia compared with those countries that have achieved the lowest road trauma rates in the world.

The best performing countries

The best road safety performing countries are in Europe. The European Union itself is actively engaged in the pursuit of road safety at European Parliament level, with high level political agreement on ambitious targets for the continent, together with a results-based approach in its two consecutive ten-years of road safety strategies (European Commission, 2013). The innovative road risk assessment program, EuroRAP, was the earliest attempt to take a comprehensive approach to examining in detail risks inherent in various road environments. This ultimately led to the International Road Assessment Program (iRAP), otherwise known as the Vaccine for Roads (iRAP, 2008). Moreover, EuroNCAP has led all New Car Assessment Programs in promoting active as well as passive vehicle safety features, such as seatbelt reminders (EuroNCAP).

Three countries in northern Europe have consistently maintained some of the lowest road fatality rates per population in the world. These are Sweden, the United Kingdom (UK), and The Netherlands (SUN). Together they are referred to as the “SUN” countries for which benchmark reviews have been undertaken (Koornstra et al., 2002; Lynam et al., 2005). The first of these studies concluded that the three countries have a similar approach to road safety which includes, a willingness to debate road safety issues in Parliament, a strong lead agency with good coordination at national and local levels, supportive funding, and well supported non-governmental and non-profit groups that have a strong influence on road safety decision-making (Koornstra et al., 2002). Each of the three countries invests considerable resources directly into road safety improvements and set outcome targets in their strategies. The obvious difference in the three countries is that the UK has not adopted a safe system policy, unlike Sweden and The Netherlands. Instead, the UK has taken a systematic approach to implementing evidence based road safety actions, driven by performance targets (Broughton, 2009).

Road safety in The Netherlands

As discussed in the Introduction, the Netherlands was one of two original pioneers of the safe system approach. While, like many other countries the Dutch had taken measures to reduce speeding and drink driving and improve seat belt use through legislation and enforcement, since the 1970s they also introduced new methods of calming traffic in residential areas, bringing speed limits down to 30 km/h. When Sustainable Safety was introduced in the early 1990's a shift in thinking resulted in a greater emphasis on the need to separate vulnerable road users from motorised traffic where speed differences could not be eliminated (Bicycle_Dutch, 2012). At the same time, the Dutch set out to design roads such that road users automatically understand how they are meant to use them. That is, the road gives information to the user so that a correct selection of travel speed can be made.

The real contribution of the Dutch to road safety improvement is their holistic approach to managing a road system that accommodates human needs on human terms, rather than trying to adjust humans to fit the designs of road traffic systems. The earliest practical results of this thinking have been to extensively re-design local streets such that vulnerable road users like pedestrians and cyclists are not at risk of being killed by motorised vehicles as speeds are kept to < 30 km/h. Another example is the extensive rezoning of rural access roads to limit travel speeds to 60 km/h, and separation of vulnerable road users from motorised traffic where possibilities of harmful conflict are present. These relatively low-cost solutions were implemented in the Sustainable Safety Start-up Program progressively from 1992 and achieved fatality reductions of around 6% per year. During the Start-up, 1997-2002, an action program was agreed and mandated by all tiers of Government. The Start-up Program achieved consensus on the proposed road hierarchy system and associated standards while traditional road safety actions based on known crash and injury factors continued to be implemented. However, progress on implementing stalled between 2002-2005 due to “political developments” (F. Wegman, Atze, D., Schermers, G., van Vliet, P., 2005). But by 2006 a critical review called for a more multi-sectoral approach to addressing road, vehicle and behaviour risks, more action to secure community and political commitment, more funding and a formalisation of Sustainable Safety principles in road authority guidelines (F. Wegman, Aarts, L. (eds.), 2006). More recently the Sustainable Safety strategy has incorporated more effort to improve the capabilities of road users to be aware of their limitations and learn to assess and adapt to safe behaviour in the road environment (F. Wegman, Aarts, L. (eds.), 2006).

An evaluation of Sustainable Safety measures found that collectively these measures prevented between 300-400 road deaths in 2007, and that an overall benefit-cost ratio of 3.6:1 was achieved by Sustainable Safety between 1998-2007, saving between 1,600 and 1,700 lives (Weijermars & Wegman, 2011). Sustainable Safety advocates advise that the way forward to 2020, is to base the road safety vision on five principles, including the original three – functionality, homogeneity and predictability (of the road traffic system) – and the additional principles of road user awareness and (physical and social) forgiveness of the road traffic system (Fred Wegman, Aarts, & Bax, 2008).

Road safety in Sweden

Sweden virtually began its road safety efforts in 1967 when a decision was taken to shift from left-hand driving lanes to right-hand driving. A re-fitment of the road system and re-education of the road user population was undertaken. In addition, annual motor vehicle inspections were introduced in 1965, and a system-wide lowering of speed limits occurred in 1972. A number of countermeasures were implemented targeting progressive reductions in road deaths throughout the 1970s and 1980s.

But by 1997, the Swedish Parliament passed the Vision Zero law following a period of little change in road death rates (Koornstra et al., 2002). Vision Zero changed the strategic thrust in Sweden to the prevention of injuries, and away from the prevention of crashes. It changed the thinking from “what can be done about the problems found?” to “what must be done to make the road system inherently safe for current and future road users?” (Belin et al., 2011). What ensued was a well-publicised and well-resourced road safety program to optimise measures that make the road environment forgiving of human error, using vehicle and other technologies to prevent harmful mistakes (e.g. drink driving, non-use of seatbelts, and speeding), and tightening the regulatory system to enable removal of deliberately unsafe users. However, progress was stalled in the years 2000-2003 when politicians restricted road and legal authorities from introducing some proposed traffic safety measures (Lynam et al., 2005). The local road safety measures, such as the innovative 3+1 road barrier system (Johansson, 2009) and separation measures for vulnerable and motorised traffic was continued during this time. But a review of Sweden’s road safety programs, in 2008

recommended that Sweden needed to get back on track with its long term protective system engineering programs, as well as to build stronger multi-sectoral coordination with common aims (J. H. Breen, E., Bliss, A., 2008).

Road safety in the United Kingdom

Although British Governments have not adopted a “safe system” road safety policy, road safety has been on the public agenda for a very long time in the United Kingdom (UK). The first recorded automobile fatality occurred in Ireland, in 1869 (Fallon & O'Neill, 2005). At the time, the event was described as a “public scourge and a private tragedy.” The coroner was moved to say, “This must never happen again.” Nearly a century later, in post war 1947, J S Dean wrote a book entitled, “Murder Most Foul: a study of the road deaths problem.” He concluded that “The ‘reconstruction of Britain’ will indeed be a dismal failure if it includes as a permanent feature of the national life the killing and maiming of a quarter of a million, or more, of persons every year on the roads...there is no reason for failure...all that is needed is the will to act (Dean, 1947, reprinted 2007).”

No clear historical analysis of road safety developments in the UK have been found in the literature. However, the UK has consistently maintained a comparatively low road death rate, at least from the year 1970. It is not entirely clear why this is the case. However, since 1967 the road authorities experimented with porous asphalt and determined that this material would provide good skid-resistance and carry good safety benefits on its motorways (Nicholls, 1997). In terms of traffic, the UK does not have as much foreign through traffic and, given that heavy vehicle speeding is a problem in all three countries, this may contribute to an explanation of comparatively better road safety (Lynam et al., 2005). The relatively high traffic density in the UK has been cited as a possible reason for lower vehicle occupant fatality risk than Sweden with a much lower traffic density (Lynam et al., 2005).

In urban and built-up environments, a traffic calming and self-enforcing (low) speeds have been designed into the system. Local government authorities play an active role in this as well as in speed camera enforcement. Notably, self-reported compliance with speed limits is higher in the UK than in The Netherlands or Sweden. This is explained in part by a higher acceptance by British drivers of speed limits and in part by a more comprehensive speed enforcement program. Moreover, the UK Department of the Environment, Transport and the Regions have consistently researched road safety risks, largely through the Transport Research Laboratory, to guide their road safety investments in the most targeted way, including engineering, enforcement and education (Taylor, Lynam, & Baruya, 2000). The research-driven strategy has consistently analysed all types of road user, road infrastructure, and vehicles in the development of countermeasures that tackle the most important risks in the most effective way in order to achieve specific outcome targets (Broughton, 2009). And while the UK has not yet formally adopted a safe system approach, their 1987 national road safety strategy indicated a need to reduce the problems caused by human error with vehicle and road engineering means, as well as the need to “reduce the scope for unsafe road user conduct rather than seeking directly to persuade road users to refrain from such conduct.” (J. Breen, 2012)

However, a recent report by TRL claims that the 31% reduction in road fatalities between 2007 and 2010 in the UK were primarily explained by reduced travel (except for pedal cyclists) and economic instability (recession). The report argues that reduced economic activity not only influenced traffic exposure, but also had a positive effect on reducing speeding and drink drive behaviours (Lloyd, 2013). The authors make no mention of any road infrastructure changes during this period.

Moreover, in July, 2012, the House of Commons Transport Committee raised concerns about increases in road deaths and casualties between 2010 and 2011. These concerns are heightened by the fact that the current Government has removed targets from the 2011 strategy and have set a

course for “decentralisation” of road safety at a time when reductions in funding to local authorities have stretched their resources (House of Commons Transport Committee, 2012b). The current UK policy on road safety is “Making roads safer” (Hammond, 2013).

Australian road safety

Unlike the SUN countries, Australia is a federation of semiautonomous States and Territories. The Federal Government has a road safety role that is limited to vehicle standards and infrastructure funding. Therefore, while there are some Federal Government agencies involved in road safety, e.g. Australian Design Rules for vehicles, the State and Territory Governments assume the primary responsibility for managing road safety. Local or municipal Governments are guided and often funded by State and Federal Government agencies to carry out road safety work. This effectively means that road safety is not a national priority, even though Federal and State Ministers for Roads and Transport may agree that something should be done about it and seek to coordinate their efforts through Austroads, an agency created for this purpose.

Another notable difference in Australian political structures is that wider Parliamentary involvement is largely limited to the Ministers with specific road safety responsibilities (primarily Roads and Police Ministers), and cross-Party Parliamentary Committees that operate at State level only. Members of these Committees have no responsibility for implementing road safety actions. Western Australia is different in this regard as, by statute, a Road Safety Council is appointed by the Minister for Transport and includes representatives from all Ministers that have a role in road safety, as well as community representatives.

An examination of attempts to implement safe system road safety strategies in three Australian States (New South Wales, Victoria and Western Australia) was undertaken in 2011 by the authors of this paper (Mooren, 2011). Like the SUN country reviews, differences in the physical and socio-political environments and institutional arrangements of the three States were found. Each State had developed safe system strategies, but these differed a bit in emphasis and rigour in implementation.

Road safety in New South Wales

Not unlike the UK, in 1999, the New South Wales (NSW) Roads and Traffic Authority (RTA) investigated the potential for saving specific numbers of lives with specific countermeasures in this State’s road safety strategy for 2001-2010. It calculated that 680 lives could be saved through safer people initiatives, with 330 of these being saved by enhanced speed education and enforcement. A total of 595 lives would be saved by safer roads initiatives, including 230 from the implementation of 50 km/h urban speed limits. And a total of 725 lives would be saved through safer vehicles initiatives, with 160 being saved by speed limiting vehicles. While this strategy did not specifically adopt a safe system approach, it referred to Vision Zero and Sustainable Safety as models for a new approach to road safety “through a systematic change in the planning, design and management of the road networks and road safety strategies. (Roads and Traffic Authority NSW, 2000)”

In 2006, the RTA changed its approach to managing road safety under the banner of “mainstreaming road safety.” Having adopted *safe system* principles, the infrastructure development group worked together with the RTA’s road safety experts to:

- Ensure safety benefits were a key consideration in selecting development projects;
- Develop and implement a method to forecast road safety outcomes of projects;
- Involve internal stakeholders at an early stage of project planning; and
- Ensure that specific road safety objectives are set for all major infrastructure projects.

By 2008, safe system principles and team approach methods were codified in all key guidance documents related to road infrastructure development by the NSW Centre for Road Safety (formerly RTA). In 2010, new speed zoning guidelines, consistent with safe system principles were also introduced (Bhatnagar, 2010). However, speed enforcement remains a publicly contested issue in this State, even after an audit of speed cameras in 2011 found them to be an effective road safety measure (Achterstraat, 2011).

The road fatality rates in NSW have reduced from 7.6 per 100,000 inhabitants in the year 2004 to 5.0 in the year 2011 (BITRE, 2012). The New South Wales Government has reaffirmed its commitment to the safe system approach in its recently released NSW Road Safety Strategy 2012-2021 document (Transport for NSW, 2013). This strategy reflects recognition of the importance of speed management as well as the need to focus greater efforts on the needs of vulnerable road users such as pedestrians and cyclists. It also reaffirms commitment to a collaborative approach with road safety stakeholders.

Road safety in Victoria

The emphasis on safe travel speeds, presented in a conference paper (Tingvall & Haworth, 1999), was embraced by the Victorian road authority, VicRoads, without fully adopting the recommended introduction of Vision Zero. Between the years 2001 and 2004, the Victorian Government introduced a number of strong measures to reduce the risks of unsafe travel speeds in recognition of the pivotal role of speeding in road trauma risk. However, when a new government took power in 2011, it called for an audit of the Safety Camera program (Pearson, 2011). While the results confirmed the safety benefits of speed and red light camera use, vocal opponents to speed cameras continued to appear in the media.

Other efforts at achieving road user compliance focused on initiatives to reduce alcohol and drug impaired driving. These initiatives were carried out in an environment where strong whole-of-government coordination between the road authority, police, department of justice and a government-owned monopoly third party insurance organisations combined their efforts, supported by government funded research and advocacy.

By the year 2004, the concept of *safe system* road safety was incorporated into the Victorian road safety strategy. At this time the Australian Road Assessment Program (AusRAP) was carried out to assess the crash risks inherent in the Victorian road system, with a commensurate infrastructure program to ameliorate the sites of the major crash risk types.

Victoria continued to reduce its fatalities and fatality rates, and by the end of calendar year 2011, the fatality rate per 100,000 inhabitants was 5.1, down from a rate of 6.9 in the year ending 2004 (BITRE, 2012).

The latest road safety strategy in Victoria seeks to both raise the involvement in road safety at the Ministerial level and, at the same time, to more strongly engage the wider community in road safety (VicRoads, Victoria Police, TAC, & Department of Justice, 2013). It announces the establishment of a Ministerial Council on Road Safety, chaired by the Police Minister, and advises of the views received by 16,000 Victorians on what should be done about road safety. The development of the strategy considered community views on what should be done, but these were assessed against the scientific evidence for effective interventions.

Road safety in Western Australia

Western Australia (WA), the first State to officially adopt the safe system approach to its road safety strategy, took a consultative and inclusive approach to developing and implementing road safety programs. An important strength in the WA strategy was the level of bipartisan support. But while there was a hypothecation of revenues from red light and speed cameras, the initial investment in road infrastructure measures fell short of what was required to dramatically improve the inherent safety of the road traffic system (Corben, 2008). A boost in funding for remedial road safety works of greater than \$100 million in the years 2009, 2010 and 2011 were allocated to address road infrastructure safety.

The Office of Road Safety is financed largely through a hypothecation of revenues from red light and speed camera fines. It has a unique institutional position as a group within the road authority but providing secretariat support to an independent Road Safety Council and Ministerial Council on Road Safety. Its activities have gained broad active support for the Toward Zero strategy by a range of non-government, local government, community and business sector groups. A website for the Office of Road Safety presents a wealth of information and resources, specifically aiming to encourage broad and active community participation in road safety. (See <http://ors.wa.gov.au/>.)

As required by law, the Road Safety Council reports activities and outcomes each year to the Minister for Police. Last year's progress report indicated a broad range of activities carried out by a number of organisations in Western Australia, and positive road safety outcomes for the year (Holman, 2013). The road fatality rates in WA have reduced from 8.9 per 100,000 inhabitants in the year 2004 to 7.7 in the year 2011 (BITRE, 2012).

Discussion

A number of issues emerge from an examination of how road trauma has been reduced and how it has increased following specific changes. It is fairly clear that road- and vehicle-engineering countermeasures produce lasting results, compared with behaviour countermeasures that need to be researched and applied consistently to assure safety benefits (Grzebieta, 2013). The management of a safe road and traffic system must include both.

The ambitious road safety visions proposed by the Dutch and the Swedes in the 1990s are acknowledged for having a profound effect on other countries (OECD, 2008).

The differences between the European jurisdictions compared with Australian States include:

- A much higher and more detailed and specific commitment and involvement in road safety at the Parliamentary levels (Belin et al., 2011; F. Wegman, 2013);
- Road and traffic engineering standards used in Australia have been based on US standards rather than European standards (Grzebieta, 2013);
- Unsafe driving speeds are culturally more acceptable in Australia compared with the SUN countries Job, Sakashita, Mooren, and Grzebieta (2013); (OECD, 2006); and
- The systems approach to making the vehicle and the road network intrinsically safe was embraced earlier and more fully in the SUN countries (Koornstra et al., 2002).

The similarities between the SUN countries and Australian States include:

- A long tradition of using research evidence to inform road safety strategies and programs;
- Adoption of safe system principles for road safety policies (except for the UK); and
- An understanding of the pivotal role of speed management.

While Australian State agencies (road, police, education, local government) have collaborated well in carrying out road safety programs, they have not benefitted from a strong non-government community advocate sector as much as in the SUN countries. There are very few substantial road safety focused organisations that advocate for road safety in Australia. These include the Australasian College for Road Safety, 33,900, and the Australian Automobile Association.

Important road safety strategy characteristics of each of the jurisdictions examined are compared in Table 2, with one tick being some evidence, and three ticks being evidence of a great degree. These ratings derive from road safety strategies and reviews (J. H. Breen, E., Bliss, A., 2008; Holman, 2013; Koornstra et al., 2002; Lynam et al., 2005; Transport for NSW, 2013; VicRoads et al., 2013). Some preliminary areas for road safety strategy comparison of the SUN countries and Australian jurisdictions as indicated in Table 2 could form the basis for a kind of benchmarking program for identifying strategic road safety improvements.

Table 2. Summary of degrees of strategic characteristics evident in selected jurisdictions

	High level political involvement	Active NGO advocacy	Funding commitment	Safe system policy	Research based interventions	Collaboration
Sweden	☐☐☐	☐	☐☐	☐☐☐	☐☐☐	☐☐
UK	☐☐☐	☐☐☐	☐☐		☐☐☐	☐☐
Netherlands	☐☐☐	☐☐☐	☐☐☐	☐☐☐	☐☐☐	☐☐☐
NSW	☐	☐	☐☐	☐☐	☐☐☐	☐☐
Victoria	☐☐	☐	☐☐☐	☐☐☐	☐☐☐	☐☐
WA	☐☐	☐☐☐	☐☐	☐☐☐	☐☐	☐☐
Australia		☐	☐	☐	☐	

The high level political commitment in the SUN countries is evidenced by road safety being discussed and debated in national Parliaments of these 3 countries (Belin et al., 2011; House of Commons Transport Committee, 2012a; F. Wegman, 2013). There is little evidence of any such level of involvement by the Australian Government until very recently. On Monday, 17 June, 2013, the Australian Minister for Road Safety and the opposition spokesperson both addressed the House of Representatives on progress against the National Road Safety Strategy 2011-2020 (House of Representatives, 2013). However, despite safe system principles that officially underpin this Strategy, there was no safe system flavour in either's speech. In fact, the opposition spokesperson qualified his road safety commitments with "wherever possible" twice in his concluding remarks – and earlier in his speech asked, rhetorically, if we are doing everything "we possibly or reasonably can". If one was cynical, "wherever possible" could be interpreted as "wherever popular".

Moreover, while NSW has a strong lead agency for road safety, the problem of road trauma and road safety is rarely addressed in the NSW Parliament beyond Committee level. Western Australia and now Victoria have Councils involving a broad spectrum of Ministers. But road safety in these States is not as high a profile issue as it is treated in the SUN countries. Also, Australian jurisdictions have not been supported by road safety interest groups as well as is the case in the SUN countries.

Additional specific challenges of applying the *Safe System* approach to road safety in Australia, and producing results similar to those in the SUN countries include the following:

- The Australian infrastructure engineering fraternity need to be targeted by road safety professionals to explain and promote safe system road engineering as was the case in the Sustainable Safety Start-up Program.

- Australian NCAP needs to catch up with EuroNCAP in assessing vehicles for both active and passive safety features. For example, the Australian Government should consider the introduction of seatbelt and alcohol interlocks and intelligent speed adaptation (ISA) technologies.
- Australian media debate over speed enforcement and claims of revenue raising has been intense, resulting in at least two State Governments critically reviewing the use of speed cameras.
- While Vision Zero principles have been embraced more strongly in the SUN countries, the aims of no harm to humans may seem unrealistic to the Australian community and many of its leaders despite these principles being accepted from an occupational safety perspective.
- Australian jurisdictions with vast road networks and small populations compared with the SUN countries are faced with funding challenges needed for re-engineering the road infrastructure.
- Last but not least, prominent Australian political leaders and Parliaments have not visibly and vocally embraced the safe system approach to road safety compared with the level of interest apparent in the SUN countries.

Until these issues can be addressed, while in many ways it is certainly more effective in its road safety efforts and commitment than other countries, including the United States, it is unlikely that Australia can truly lead the world in practical implementation of safe system road safety.

Conclusions

There are still gaps in understanding of safe system road safety and how to design and manage roads and vehicles with inherent safety in Australia and elsewhere. There is a small but vocal minority of those who do not believe they should be penalised for exceeding legal speed limits in Australia. And Australian political commitment to do what is necessary to achieve a safe road traffic system is not yet at the level apparent in the SUN countries, especially at the national level.

Australian jurisdictions have hit on a model of road safety that is globally embraced by United Nations member States. And they have demonstrated how a safe system approach can be applied in practice and achieve good results. However, the interpretation and implementation of the safe system approach in Australia has been patchy and varied across State and Territory jurisdictions. Perhaps Australian jurisdictions could conduct a number of pilot projects to learn how to implement safe system components by trialling some measures.

Can Australia catch up with the performance levels of the SUN countries and even surpass them? It seems unlikely. Can Australia offer some leadership in implementing *safe system* road safety? It seems probable. This goal could be assisted by a serious effort by Australian jurisdictions to improve their strategic approaches through a benchmarking program similar to the SUN countries' efforts.

Disclaimer

The views expressed in this paper represent a majority view but are not necessarily those of each author. In addition, these views do not necessarily represent the views of the institutions of the authors.

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