

Informal methods of social control: managing speed behaviour on SA roads

**Karien Venter Traffic Safety Researcher-
CSIR Built Environment Intelligent Systems and Traffic Management**

The engineering process of setting speed limits is specialised and considers a wide array of factors, including the number of crashes, existing engineering interventions, type of vehicles, road users, vehicle volumes, modes of transport, road alignment, socio-economic and human factors; as well as the road environment in general. Fieldwick and De Beer (1988) emphasised that an urban speed limit is a necessary and effective road safety tool. Speed



limits are an important part of speed management, as posted speed limits convey important information related to what the maximum speed is for a certain road—in order for a driver to adopt a safe speed considering the prevailing conditions. Roads have set speed limits that fit the individual roads' primary function. Speed limits are determined by considering the quality and type of road, the type and mix of road users and traffic as well as the surrounding environment.

Law enforcement activities and engineering interventions, such as camera speed enforcement and traffic calming on lower order roads, are by far the more popular methods of speed control in South Africa. Road user, or more specifically, driver education follows and then social marketing messages that focus specifically on speed-related behaviour. South Africa has extensive legislation and regulations regarding speed behaviour, but

compliance with these regulations still lies in the road users' understanding of when, where, how and in South Africa - "why should I?" comply. A different approach should perhaps be considered as law enforcement and physical measures might not be the only method for controlling deviant behaviour of individuals such as drivers exceeding the speed limit.

This quote: *"Social control entails rules of behaviour that should be followed by the members of a society. Some of the rules of conduct fall into the realm of good manners as the culture define the rules"* (Social control Law website: 2006) suggests that in society, people who violate norms can be subjected to gossip, public ridicule, social ostracism, insults, and even threats of physical harm by other members of their community in cases of non-compliance.

EMERGING SOCIO-ECONOMIC PRESSURES ON SPEEDING BEHAVIOUR

The global economic crisis is having its effect on the South African economy and one of the main problems associated with the global financial crisis is the erratic oil prices. The increases and short-lived decreases in the fuel price influences South Africans one way or another.

The supposition put forward in this paper is whether or not the escalation in fuel prices brought about an unintentional reduction in speed behaviour on SA roads. Was it possible that drivers consciously or unconsciously are driving slower, in order to save costs directly related to fuel and indirectly related to saving on living costs in general?

SPEED PICTURE FOR SA ROADS

In an attempt to paint a picture of speed behaviour and its contribution to crashes on South African roads information available in the form of reports posted by the RTMC and NDOT on the Arrive Alive website were collated and analysed. This information is some of the only official sources of data on road safety that is publically available. Essentially, this analysis should be based on road crash and related data for a period of ten years. However, because the different year reports were not consistent year-on-year or standardised in such a way that data and findings pertaining to specific sections of the reports on road traffic crashes in South Africa could be compared for the period 1998-2008/9, different reports were used as an attempt at such a comparison. The number of fatal crashes and fatalities that occurred during the December holiday season of each year (Figure 1) is one of the more consistent indicators. This indicator was considered to benchmark the road safety status quo of SA through the number of fatalities made public in January each year.

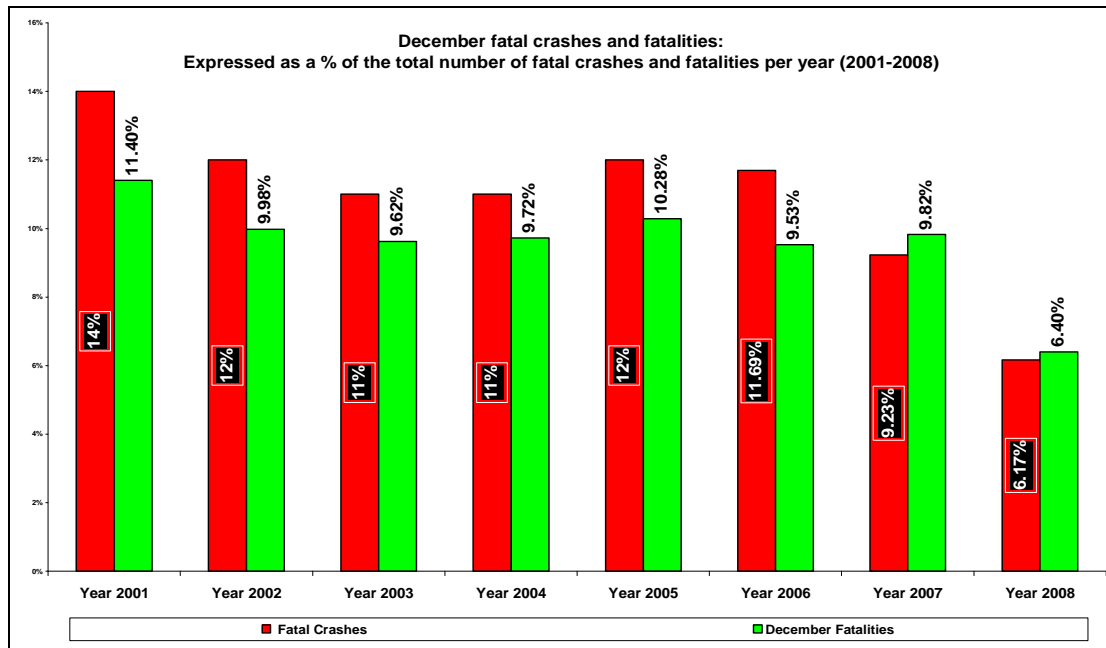


Figure 1: December fatal crashes and fatalities as a percentage of the total number of crashes per year

In an attempt to understand speed as a contributory factor in fatal South African crashes (based on the assumption that recording of speed is done correctly and objectively) speed was expressed as a proportion (percentage) of the total number of reported fatal crashes per year as well as December fatalities for the past 8-10 years.

Table 1: Speed on SA roads for the period 2001-2008

	Speed was a factor in...crashes	Fatal Crashes in December	Speed related fatal crashes	Average exceeding speed limit
Year 2001	no estimates or reference to speed as contributory cause	935	no estimates or reference to speed as contributory cause	no estimates
Year 2002	30%	976	293	21.42%
Year 2003	28%	950	266	20.54%
Year 2004	29%	993	288	21.23%
Year 2005	40%	1201	480	26.50%
Year 2006	no estimates or reference to speed as contributory cause	1220	no estimates or reference to speed as a contributory cause	30.40%
Year 2007	no estimates or reference to speed as contributory cause	1261	no estimates or reference to speed as contributory cause	no estimates
Year 2008	75%	733	550	no estimates

The RTMC confirmed that there was a decrease in fatal road crashes and associated fatalities during the December 2008-January 2009 holidays and indicated that the reduction in fatalities was not due to fewer vehicles on the road, as would be expected in view of the financial crisis, but rather it was attributed to the success of the Arrive Alive campaign, increased visible policing and enforcement.



The RTMC (2009) issued a media report indicating that “*speed was still the contributory factor in approximately 75% of crashes*” during the December 2008-January 2009 festive season. Meaning that despite a global financial crisis, drivers are still not adhering to the speed limit as one would expect in.

PERCEPTION OF SPEED



Masango (2005) revealed that 30% of drivers exceed the 120km/h limit, 14% exceed 130 km/h and 6% drive faster than 140 km/h. This was the findings of an extensive speed analysis of about 25 million vehicles of all types in 2004. Bester and Geldenhuys (2007) stated that the percentage of vehicles (excluding trucks, minibus taxis and buses) exceeding the posted speed limit on roads in South Africa decreased between the years 2002-2005, but that there was an increase in all vehicle

speeds (excluding trucks, minibus taxis and buses) the following year 2006. The researcher concluded that an increase in fatal crashes due to inappropriate speeds in 2006 could be expected.

One of the reasons cited to influence adherence to speed limits is the fact that speed limits need to be credible, in other words, the speed limit should for the majority of the driving population be comfortable and safe on a particular stretch of road (Goldenbeld & Van Schagen: 2007). Where there is general acceptance and agreement that the posted speed limit for a specific road is reasonably correct it might be perceived as credible and the posted sign might subliminally effect greater compliance with the rule. SWOV research confirmed the fact that at least one-third of all crashes can be related back to speeding behaviour of drivers (Van Schagen: 2008; Beilinson: 2004). Van Schagen (2006) indicated that between 35% and 45% of the driver population in the Netherlands exceeded the highway speed limit of between 100km/h-120km/h in 2005. Norwegian research (Ragnoy: 2008) indicated clearly that a reduction in speed reportedly also brought about a reduction of 16% in injuries and 42% reduction in fatalities.

CHOICE OF SPEED - A COMPLEX HUMAN PROCESS

Driving behaviour and driving performance involves complex social and psychological processes during which driving behaviour is influenced by motives and attributes that are indirectly transferred to exist in other drivers. In a survey that comprised (Van Schagen: 2008) of 8000 Dutch drivers the reasons (Table 2) were given in terms of why drivers do exceed the speed limit as well as why other drivers adhere to the speed limit.

Table 1: Reasons for exceeding or adhering to the speed limit in the Netherlands

Reasons for exceeding the speed limit

1. Adapting to other drivers' increase in speed
2. Driver is late for meeting etc.
3. No particular reasons
4. Driver did not notice the speed limit
5. Out of boredom

Reasons for not exceeding the speed limit

1. Safety reasons
2. It is the law
3. It is comfortable to drive at the correct speed
4. High costs associated with speeding
5. Not in a hurry anywhere

In the eighties Fieldwick and De Beer (1987) through a comprehensive study comparing South Africa with other international countries concluded that South African drivers favour higher driving speeds than drivers in countries such as New Zealand, Finland and the USA. The study considered speeding behaviour from the angle that a vehicle's speedometer is a credible indication of the travelling speed, and indicated that exceeding the speed limit is mostly a choice after all external and internal factors (Mehmood: 2007) were considered by the driver. It boils down to a deliberate decision by the driver to either adhere or to ignore the posted speed limit. Choice of speed becomes a complex process to understand.

EXCESSIVE SPEED WITHIN THE CURRENT ECONOMIC SITUATION

The escalation of fuel prices in 2008, brought along hikes in food prices and other basic living costs. These normally stems from a soar in prices related to transport services. The fluctuating fuel price influenced South Africans one way or another. The theory put forward in the first part of the paper considered the possibility of whether or not the escalation in fuel prices brought about an unintentional reduction in speed behaviour on SA roads. In modern day, is it possible that drivers are consciously or unconsciously driving slower, in order to save costs directly related to fuel and indirectly related to saving on living costs in general?



Previous research efforts suggested that it might be possible. South African research found that, when the rural speed limit in the 1970's were lowered due to an oil crisis experienced in 1973 (OPEC fuel crisis) and in 1979 (Iranian fuel crisis), driver behaviour were adapted accordingly. Along with the lowering of speed limits (Fieldwick and Fernie: 1980) the South African government at the time also introduced another type of *social control* in the form of restricted hours for *buying* fuel. This formal method of control ensured that drivers had to adapt their driving style in order to make the best of the fuel they had to their disposal. Fieldwick and De Beer (1988; 1989) also indicated that the looming oil and fuel crises experienced during the 1980's contributed to drivers adhering to speed limits and obeying the law in an attempt to save fuel, but also in an attempt to stay clear from the informal social control carried out by fellow road users, who sanctioned those "wasting fuel" by waving arms and making verbal comments to those drivers who ignored the speed limit.!

Commercial literature suggests that the same type of informal social control might be exerted today. Not in the form of restricted fuel sales or the fear of being sanctioned by other drivers but in the form of feeling the global economic crisis at home, and therefore applying self-discipline and good governance to personal spending, which could include less holidays or driving slower, and adhering to speed limits.

Internationally one of the responses to the global economic crisis has been to advise drivers to drive slower in an attempt to save costs on fuel (Shell: 2008). SA based car manufacturers, fuel companies and organisations such NAAMSA and the AA have been issuing and publishing advice with regard to saving on fuel costs by driving slower. But, traffic crashes

ultimately have their origin in the way that people think, act or react (behavioural aspects) and feel (emotional components) which makes it detrimental to take cognisance of the psychological and behavioural aspects which lies at the core of explaining most societal problems. Driving at excessive and inappropriate speeds become a personal choice and an attitude towards the enforcement authorities, towards fellow road users and life itself. Thus a change in thinking, perceptions, attitudes and behaviour is called for to address underlying causes of social problems such as road traffic crashes.

Consideration should be given to the role and extent that social approaches to behaviour change can play in changing undesired road user behaviour. When disciplines associated with the understanding of social behaviour, the motivation, cognition and emotions responsible for specific road user behaviour are considered, it starts to make sense that deeper behavioural strategies are essential in changing unwanted behaviour. Although the primary objective of something such as fuel hikes are not aimed at altering any behaviour, the secondary and unintentional spin-offs of such alternative actions, could in the long-run contribute to making South African roads safer. It might be safe to say that thinking differently about the problem might bring along alternative solutions for changing road user behaviour, responsible for the carnage on our roads!

REFERENCES

Beilinson, L. 2004. *Speeding-a huge problem in traffic safety?* In Proceedings of the International Conference on Transport and Traffic Psychology. Paper 2.

Bester, C.J. & Geldenhuys, F. 2007. *Speed Trends on Major Roads in South Africa*. In proceedings of the 26th Southern African Transport Conference. CSIR: Pretoria.

Beukes, E. & Van der Schuuren, M. 2007. *An Evaluation of Intelligent Speed Adaptation*. In proceedings of the 26th Southern African Transport Conference. CSIR: Pretoria.

Botha, G. & Van der Walt, H. 2006. *Fatal Road Crashes Contributory Factors and the Level of Lawlessness*. In proceedings of the 25th Southern African Transport Conference. CSIR: Pretoria.

Cillie, J. *Petrol prys bly dieselfde*. Beeld 25 April 2009 Available online at: <http://www.beeld.co.za>.

Feasta Organisation. 2005. *South Africa and the Oil Price Crisis*, Website available online at: <http://www.feasta.org>.

Fieldwick, R and Fernie, B.E. 1980. The 70 km/h Rural Speed Limit and Accidents, CSIR National Institute for Transport and Road Research, Technical Report RF/4/80, November 1980.

Fieldwick, R, 1984. Some Factors Influencing Traffic Accidents, CSIR National Institute for Transport and Road Research Technical Report RF/7/84, October 1984.

Fieldwick, R., and de Beer, E.J.H. 1987. The Rural Speed Limit and Traffic Accidents, CSIR National Institute for Transport and Road Research Technical Report RV/26, January 1987.

Fieldwick, R., and De Beer, E.J.H. 1988. Rural Speed Limit Changes and Safety, CSIR National Institute for Transport and Road Research Technical Report RR 645, 1988.

Goldenbeld, C. & Van Schagen, I. 2007. The credibility of speed limits on 80km/h rural roads: The effect of road and personality characteristics. *Accident Analysis and Prevention* 39, 1121-1130.

Jungu-Omara, I.O. & Van der Schuuren, M.J.W.A. 2006. *Ways of Reducing on South African Roads*. In proceedings of the 25th Southern African Transport Conference. CSIR: Pretoria

Mackey, T.C. & De V Roodt, L. 2002. Speed-Is it Relevant? In Proceedings of the 21st South African Transport Conference Pretoria: CSIR.

Masango, D. 2005. Zero tolerance for holiday drivers, Website available online from: www.southafrica.info/what_happening/news/arrivealive-220305.htm. 12 February 2009

Mehmood, A., 2007. Understanding the Dynamics of Causal Factors related to Excessive Speeding Behavior of the Drivers, Website available online from: <http://systemdynamics.org/conferences/2007/proceed/papers/MEHMO512.pdf>

Naidu, E. 2008. Food prices bite into your budget, Sunday Independent, 2 November 2008, Website available online from: http://www.iol.co.za/index.php?set_id=1&click_id=13&art_id=iol1228209139212P364.

Social control Law, 10 June 2006, Website available online at: http://anthro.palomar.edu/control/con_2.htm.

SHELL Price Change Forecast, Website available from: <http://www.shell.co.za/vpower/pprice.htm>. 5 February 2009.

Steg, L. & Rothergatter, T. (ed) 2008. *Applied Social Psychology: Understanding and Managing Social Problems*. Chapter 1 Introduction to applied social psychology. University Press: Cambridge.

Ragnoy, A. 2008. Lowering *speed limits reduces speeds and saves lives in Norway*. Nordic Road and Transport Research (2)

Road Traffic Authority New South Wales Road User Behaviour Study Recommendations Summary Report. 2003, Website available from: <http://www.rta.nsw.gov.au/roadsafety/downloads/roaduserbehaviourstudy.pdf>. 2 December 2008.

Road Traffic Management Corporation: Estimated Traffic: 2001, 2002 & 2003, Website <http://www.arrivealive.co.za>

Road Traffic Management Corporation: Road Traffic and Fatal Crash Statistics 2003-2004. June 2005 (PDF), Website <http://www.arrivealive.co.za>

Road Traffic Management Corporation: Road Traffic Report March 2008. 17 April 2008. (PDF), Website <http://www.arrivealive.co.za>

Road Traffic Management Corporation: December 2005 Road Traffic Report. 10 January 2006. (PDF) Website <http://www.arrivealive.co.za>

Road Traffic Management Corporation: April 2006 Road Traffic Report. 13 May 2006 (PDF), Website <http://www.arrivealive.co.za>

Road Traffic Management Corporation: Interim Road Traffic and Fatal Crash Report for the year 2006. 26 January 2007(PDF), Website <http://www.arrivealive.co.za>

The Rand Today, Website <http://www.therandtoday.com/2008/03/02/petrol-price-rise-on-wednesday> 2 February 2009.

Van Schagen, I.N.L.G., 2008. Snelheid en Snelheidbeheersing. SWOV: Leidshendam.