

Impediments to the measurement of road violence

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Over the past ten years, there has been considerable discussion of what is often called 'road rage'. Articles appear regularly in the academic literature and the press, and governments have been prompted to take action to control what seems to be a growing incidence of violence associated with motor vehicle use. But is road violence a real and growing crime problem, or simply an exaggeration by the press? Most importantly, how can this crime problem be measured in terms of its incidence and impact? This paper considers how best to define the problem and to quantify its extent. It offers some suggestions for improving data collection so that policy-makers can truly understand whether action is needed to deal with violence associated with driving.

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Defining road violence and related concepts

'Road rage' is one of those notoriously difficult concepts in crime and justice. In some respects it is, like an elephant, easier to recognise than to define! The experience of driving may cause motorists to become agitated, leading to the use of obscene gestures or angry words. At the more serious end of the scale however, serious injury and even death may result. In Victoria, on 20 April 2005, the Drugs and Crime Prevention Committee of the Parliament of Victoria tabled its final report on the topic, *Violence associated with motor vehicle use* (VPDCPC 2005). The Committee formed the view that the colloquial expression 'road rage' was so imprecise and subject to differing interpretations that its use should be avoided entirely. Instead, the Committee adopted three separate concepts: road violence, road hostility, and selfish driving (VPDCPC 2005: 19–20).

Road violence was defined as involving spontaneous, driving-related acts of violence that are specifically targeted at strangers, or where strangers reasonably feel they are being targeted. This definition is generally accepted in the academic community worldwide.

Road hostility was defined as spontaneous, driving-related non-violent but hostile acts that are specifically targeted at strangers, or where strangers reasonably feel they are being targeted. Examples include making obscene gestures at other road users or verbally abusing them. The difference between road violence and road hostility is simply one of severity.

Finally, **selfish driving** was defined as time-urgent or self-oriented driving behaviour, which is committed at the expense of other drivers in general, but which is not specifically targeted at particular individuals. Selfish driving is driving behaviour with the objective of gaining time, space and pleasure but without the intention to harm people. Examples include weaving in and out of traffic or overtaking in the left lane. Unlike acts of road violence and road hostility, such driving is not specifically targeted at particular road users. The aim of selfish driving is not to harm another

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person or even to express displeasure with others. Rather, the aim is generally to 'get ahead' or to maintain progress.

There is no clear line that can be drawn between the three forms of conduct. Violence need not always be physical. For example, approaching individuals but not touching them can sometimes be violent such as when an attempt is made to force another driver off road, or where tailgating amounts to stalking. Some acts such as an assault and battery will however, be unambiguous, and will always amount to road violence. Most acts are capable of falling into multiple categories, depending on the circumstances. For example, tailgating may amount to road violence or road hostility, or even selfish driving, depending on how long it is done for, to whom it is done, and whether the victim becomes fearful for his or her safety.

A further problem identified by the Drugs and Crime Prevention Committee (VPDCPC 2005: 40) is the difficulty in determining precisely whether the parties involved in incidents are offenders or victims. The Committee found that sometimes it is unclear who the primary victim or perpetrator of an incident actually was, with both parties often blaming each other with, on occasions, each contributing to the final outcome of the incident. In quantifying the extent of road violence, therefore, a decision needs to be made about whether individual offenders and victims will be counted or whether incidents will form the unit of measurement. Finally, problems arise where there has been a series of offences that arise out of one incident. Decisions need to be made as to whether every offence that took place should be counted, only the most serious offence, or whether simply to count the entire transaction as one incident.

Understanding the impact of road violence

Measuring the financial and personal impacts of road violence presents particular difficulties. The statistics

on road user violence supplied by Victoria Police to the Drugs and Crime Prevention Committee (VPDCPC 2005: 159) indicated that in almost 80 percent of cases, no financial loss was reported. For the remaining 20 percent of cases in which victims did report some financial loss, the mean value reported lost was \$174 per incident with a maximum of \$28,000. In addition to monetary loss, the Committee found that more than half of the individuals involved in incidents of road violence suffered injuries, many requiring treatment and occasionally with serious consequences including psychological, emotional or physiological effects and even death. In only three percent of incidents however, were injuries classified as severe (VPDCPC 2005: 162).

There can, however, be a range of other consequences of road violence including public liability costs and insurance claims. The experience of road violence may also lead some individuals to withdraw from road usage in part or in full. Road violence may also be costly in terms of higher fuel consumption, tyre and brake wear and the repair of collision damage. All these consequences need to be considered in assessing the overall impact of the problem.

Data sources

The principal sources of data which have been relied on to quantify the nature and extent of road violence include victimisation surveys, official police statistics, and analyses of media reports.

Victimisation surveys

Because road violence is a relatively rare phenomenon, the use of victimisation surveys that sample the general population is problematic as sample sizes are often too small to obtain data appropriate for statistical analysis. There have, however, been a number of surveys which have sought to document the extent of road violence by focusing on specific groups. Some of the key findings

reported by the Committee, as well as some more recent findings follow.

In Victoria, between 25 November 1997 and 2 December 1997, the Victorian Community Council Against Violence conducted a survey of 801 Victorian drivers aged 18 years or over about aggression and/or violence associated with motor vehicle use (VCCAV 1999). The definition of severe road rage included not only assaults but also following a vehicle, swerving in front of a vehicle, and trying to run a vehicle off the road, amongst others. Some 14 percent of those surveyed recalled being a victim of severe road rage as either a driver or passenger within the past 12 months, with 18 percent recalling having been victims in the past two years, and 35 percent having ever been a victim. Only seven percent of drivers admitted perpetrating severe road rage themselves.

For the past eleven years, the insurance company AAMI has conducted research on driver attitudes, drawing on claims data as well as, in 2005, the results of a national telephone survey of 2400 adults in major population centres and regions around Australia. Questions about road rage (which is not defined by AAMI, but considered synonymous with aggressive driving) have been included in the survey since 1996. The eleventh *Crash index* was released in October 2005 (AAMI 2005). The principal finding was that some four percent of those who had experienced road rage said that they had been physically assaulted by another driver. In both the 2003 and 2004 *Crash index*, five percent said that they had been physically assaulted by another driver.

In Western Australia, telephone interviews were conducted with a sample of 1208 drivers to determine the incidence of road rage offending and victimisation. Road rage was defined as 'situations where a driver acts aggressively or violently towards another driver, bike rider or pedestrian as a result of some perceived conflict while driving'. An assessment

was also made of criminal driving-related violence which was limited to assaults, threats of violence, or damage to vehicles (Roberts & Indermaur 2005: 367). Considering only the more serious category of criminal driving-related violence, it was found that 13.5 percent of respondents reported ever having been the victims of such conduct. Some 7.1 percent of all respondents reported victimisation over the previous two years, although only 1.4 percent reported actually being assaulted. In terms of those who admitted committing criminal driving-related violence, lifetime prevalence was 3.6 percent and two-year prevalence 2.1 percent. Only one percent of respondents admitted committing driving-related assaults.

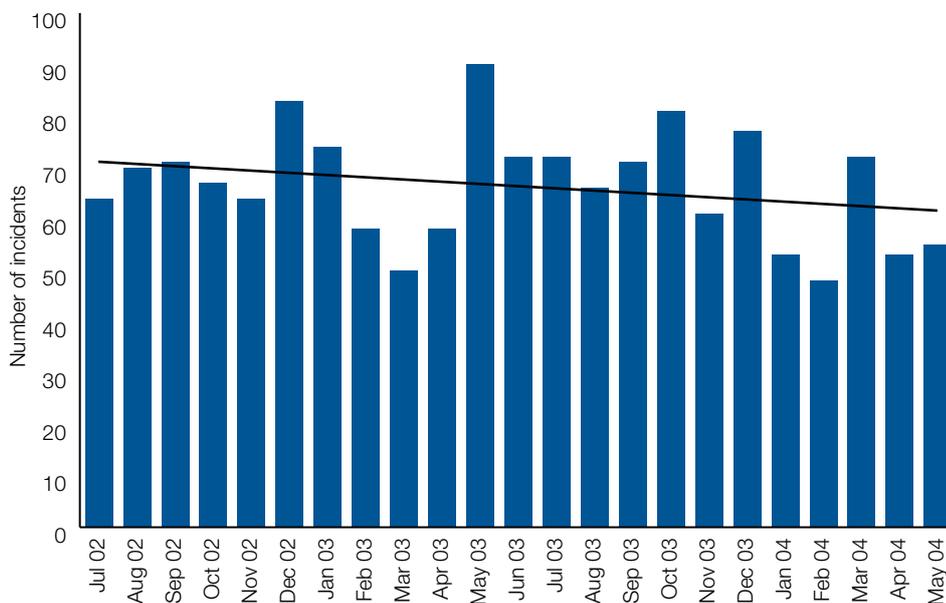
Overseas, large scale victimisation surveys have been conducted, particularly in the United States, Europe and Canada where between one and five percent of those surveyed have reported being victimised by severe forms of road rage. A number of the victimisation surveys have however, been of questionable value as they have sought to quantify the extent of road rage without adequately defining the concept (VPDCPC 2005: 69).

When these small percentages are extrapolated to the total number of road users, large numbers of individuals are likely to have been victimised. In Victoria, for example, there are some 3.3 million licensed drivers. Applying victimisation rates of between one and five percent would equate to 33,000–165,000 individuals being victimised by road violence, assuming that all demographic groups of drivers have the same risk of victimisation as others. Even accounting for different rates of victimisation for different demographics, the result would still be that many thousands of individuals are victimised each year in Victoria alone.

Police statistics

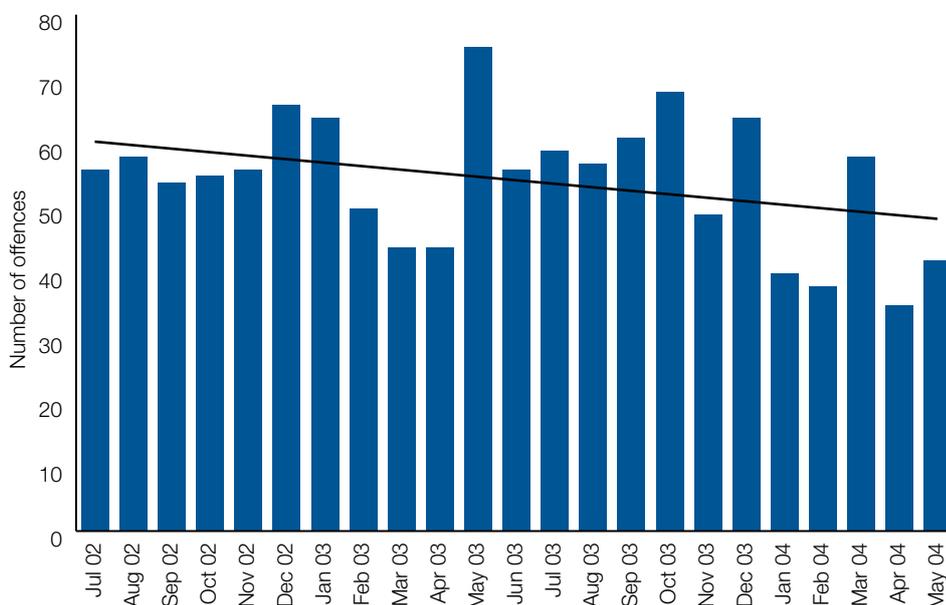
As is the case with many other quantitative questions in criminal justice, official statistics are often not classified

Figure 1: Incidents reported to Victoria Police involving road user violence, 1 July 2002 – 31 May 2004



Source: Victoria Police. Statistical Services Division. Data extracted from LEAP, 10 June 2004, adapted from VPDCPC 2005: 73

Figure 2: Reported Victoria Police assault offences associated with road user violence 1 July 2002 – 31 May 2004



Source: Victoria Police, Statistical Services Division. Data extracted from LEAP, 10 June 2004 adapted from Drugs and Crime Prevention Committee (2005, p. 74).

into sufficiently specific categories to enable trends to be detected with respect to particular methodologies of offending, without examining actual narratives attached to police reports.

In Western Australia, incidents of driving-related violence present on the Offence Information System of the Western Australia Police from 1991 to 2000 were examined. Over this period, the number of incidents of driving-related

assaults and threats per 100,000 vehicles was found to have increased. However, as a percentage of all street assaults by strangers reported to police, there had been no increase, with road rage incidents ranging between 10 and 11 percent of all street assaults reported over the ten year period (cited in Roberts & Indermaur 2005: 364). Comparable data have been collected by Victoria Police since 2000. During the period from 1 July 2002 to 31 May 2004, incidents of road user violence have remained constant, neither increasing nor decreasing significantly (Figure 1).

In order to understand these data more fully however, it is necessary to compare trends in motor vehicle usage as well as in general crimes of violence. In Victoria, between 1995 and 2003 for example, the number of recorded assault offences increased approximately seven percent according to unpublished data from the Australian Bureau of Statistics recorded crime collection, 2003, cited by the Drugs and Crime Prevention Committee (VPDCPC 2005: 78). This was not, however, statistically significant. By way of comparison, assault offences associated with road user violence as recorded on the Victoria Police database, LEAP, have declined since July 2002 as shown in Figure 2, although this decline was not statistically significant ($b = -0.54, p = 0.091$).

There has also been an eight percent increase in the number of licensed drivers in Victoria between 1998 and 2003, and a 15 percent increase in kilometres travelled annually by vehicles in Victoria between 1998 and 2002 (VPDCPC 2005: 79). This means that the number of potential opportunities for road violence to occur has increased over the past five years.

In addition, the number of incidents of road violence appears to be considerably smaller than the number of motor vehicle crashes that occur in Victoria as recorded by VicRoads. Based on these data, and assuming a reporting rate for road violence of nine percent (VCCAV 1999),

the Drugs and Crime Prevention Committee (VPDCPC 2005: 80–81) estimated that the number of incidents of road user violence was approximately three percent of the number of crashes involving casualties and fatalities that took place in Victoria in 2001–02, or one case of road user violence for every 34 casualties or fatalities.

Finally, it should be recalled that police statistics only record matters that have come to the attention of the police. Previous studies have found that road rage tends to be under-reported as many victims simply accept that it was a consequence of the driving environment and take the matter no further. An additional cause of non-reporting is that often the perpetrator will leave the scene, not be identified by the victim or located by the police. Victims of road rage may also not report the incident to the police because of lack of damage to the car, concern about reprisals, fear of appearing foolish, or through concern at the effect the report may have on their insurance premiums.

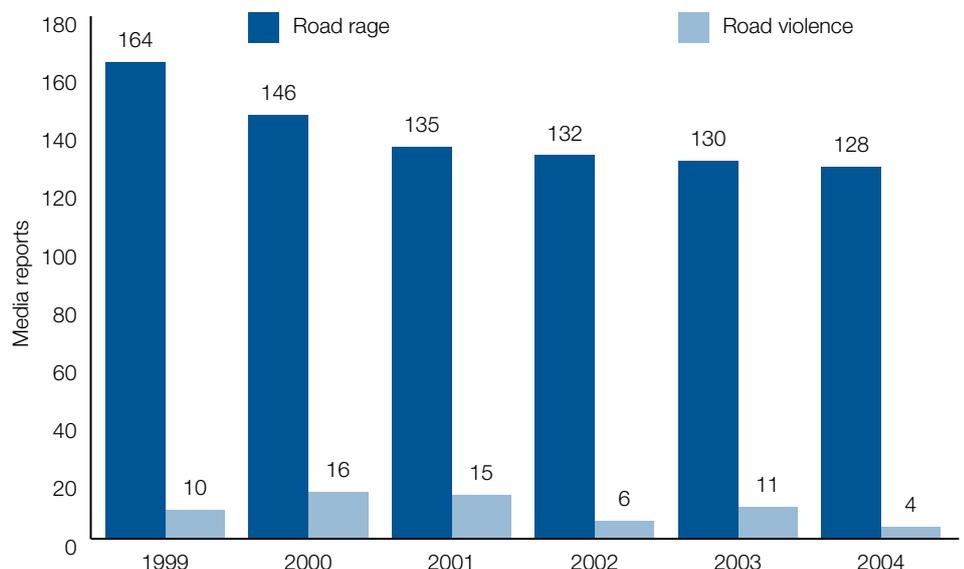
Generally, it seems that the reporting rate for incidents of road rage is much lower than for assaults generally. In the latest

International Crime Victimization Survey for example, some 37 percent of assaults or threats were reported to police in the Australian sample (Johnson 2005: 37). In the survey conducted in Western Australia, 21 percent of victims asked about their most recent driving-related violent incident said that they had reported the offence to police (Roberts & Indermaur 2005: 370). Other studies that have examined reporting rates for road rage, have found lower rates with less than 10 percent of incidents being reported to police (VPDCPC 2005: 42–45).

Media analyses

Owing to the fact that road rage is frequently discussed in the media, researchers have sought to quantify the extent of the problem by examining media reports in which the expression ‘road rage’ has been used. The difficulty, however, is that the incidence and prevalence of road rage is often inaccurately captured by many newspaper reports, with much of the discussion in the press concerning the concept of road rage or the use of the term itself, without identifying

Figure 3: Media reports of road rage and road violence in Victorian newspapers, 1999–2004



Source: VPDCPC 2005: 95
 Note: Data have been extrapolated to full calendar years.

Table 1: Menacing and predatory driving charges and convictions in New South Wales, 1999–2004

Year	Menacing driving		Predatory driving		Total	
	Charges	Proved	Charges	Proved	Charges	Proved
1999	3	–	12	–	15	–
2000	176	59	1	–	177	–
2001	169	66	16	–	185	–
2002	172	91	13	–	185	–
2003	173	–	12	–	185	–
2004	82	–	6	–	88	–
Total	775	–	61	6*	836	6*

Note: – indicates information unavailable. * only total charges proved is available.
 Source: NSW Police Service, unpublished data, cited in VPDCPC 2005: 52.

specific incidents. As a means of quantifying the scale of the problem of road violence, such analyses leave a good deal to be desired.

The VPDCPC undertook an analysis of articles in *The Age* and the *Herald Sun* newspapers that mentioned the words ‘road rage’. On average, from 1999 to 2004, approximately three articles a week referred to road rage, although fewer than one a month concerned an identifiable incident of road violence within the Committee’s definition (Figure 3).

On the basis of this research, it may be concluded that media commentary on road rage has been extensive in recent years, but that the vast bulk of this does not involve the reporting of individual incidents of road violence. As such, the analysis of media reports does not offer much in terms of precise quantification of the problem of road violence.

Data accuracy

Most of the problems associated with measuring the incidence of road violence are due to definitional inaccuracy rather than data inaccuracy. This was confirmed by the Drugs and Crime Prevention Committee (VPDCPC 2005: 75) which carried out a verification check on the cases included in Victoria Police’s database of road user violence for the month of March 2004. After reading the narratives attached to each of the

62 LEAP reports of road user violence, it was found that all but one of the incidents involved road violence within the definition adopted by the Committee. The one exception concerned an incident that fell within the Committee’s definition of road hostility. What has not been determined however, is the extent to which all incidents of road user violence are being captured on LEAP. This would require an analysis of narratives for all possible offences for the years in question.

Improving data collection

There are various ways in which the measurement of road violence could be improved.

A specific road violence offence

In some places, specific offences have been created to deal with various forms of road rage. In New South Wales for example, the *Traffic and Crimes Amendment (Menacing and Predatory Driving) Act 1997* created new offences of menacing driving and the more serious predatory driving. Between 1999 and 2004, 836 charges were laid under this legislation, with 88 charges in 2004. Only six of the 61 predatory driving charges were proved between 1999 and 2004 as shown in Table 1.

In Victoria however, the Parliamentary Committee took the view that the

incidence of road violence was too low to warrant the introduction of a new criminal offence, and that there were few problems with using existing criminal laws to prosecute cases of road violence. It seems on the basis of the experience in New South Wales, that even if a new offence were enacted, it would not be used very often, and that difficulties may arise in proving allegations in the courts.

Identifying road violence incidents in official statistics

In Victoria, the approach that has been taken is for police to flag specific incidents of road user violence when recording new reports of alleged crimes. This requires the use of a carefully defined concept which will take account of the complexities of incidents, in order to isolate clearly the role of offenders and victims, and to distinguish between acts of varying degrees of seriousness. It would be worthwhile for the data collected in this way to be verified regularly in order to ensure that incidents being recorded do fall within the parameters of the definition being used.

Not a great deal is known about the judicial outcomes of cases of road violence that have been prosecuted in the courts. Unfortunately, official court statistics collected by the Australian Bureau of Statistics do not have an offence category or sub-category that approximates to crimes involving road violence, road hostility, selfish driving and related conduct. The Australian Bureau of Statistics is taking steps to improve data relating to criminal court statistics and hopefully questions relating to the collection of court statistics concerning road violence and related offences will be considered during this review.

Victimisation surveys

The most effective way to improve research would be to conduct large scale victimisation surveys which would enable appropriate statistical analyses to be carried out. Care would be needed

to ensure that the precise concepts being measured are defined with clarity. Simply asking subjects about their experience of road rage victimisation is inadequate as the concept is far too broad. Carefully designed questions eliciting information about actual incidents of road violence could, however, provide useful data on the extent of victimisation as well as the nature and extent of harm suffered.

Media analyses

The analysis of media reports can provide information on the extent to which various aspects of road rage are being reported, but care is needed to distinguish commentaries about the use of the term 'road rage' from actual reports of incidents. Although reference to the term 'road rage' appears to have increased in the media in recent years, actual reports of incidents are rare and do not seem to be increasing. The Parliamentary Committee suggested that journalists should familiarise themselves with the terms road violence, road hostility and selfish driving and that these terms be used in preference to road rage in future media reporting. The Committee also thought that general deterrence would be enhanced if journalists publicised the judicial outcomes of cases involving road violence, including details of sentences imposed for specific offences committed. This would help to educate road users of the seriousness of road violence and make known that it is taken seriously by the community and the courts.

Conclusion

To conclude, although a good deal of research has been carried out into road rage and associated activities, the quality of the research has been marred by poor definition of terms and concepts and by inadequacies in the recording of official statistics. Studies of media reports have provided few insights, again owing to the generality of what is being reported. Serious forms of road violence continue to arise and although they are not as prevalent as other crimes involving physical violence, there remains a need to document their extent more precisely. Once the evidence base has been improved, efforts can then be made to devise appropriate strategies to reduce the extent of the problem. There is currently no shortage of potential solutions, but care is needed in choosing measures that are proportionate to the actual extent of the problem.

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All URLs were correct at April 2006

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