Drinkers and their Driving: Compliance with Drink-Driving Legislation in Four Australian States

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This paper was to discuss drivers and their drinking, using data from a recent national study which investigated the behaviour, experiences, and attitudes towards drink-driving of Australian drivers. The reversal of the title is not merely a frivolous gesture, but reflects the author's conviction that the focus should be widened beyond a concern with the way in which some drivers consume alcohol, thereby placing themselves and the community at risk, to all drivers who consume alcohol (75 per cent of this sample) and the circumstances under which they find it easy or difficult to comply with drink-driving legislation. This understanding is surely necessary if we are to design preventions that take human factors into account.

This paper, then, looks at compliance rather than offending, and asks the basic question 'How do people who drink manage their driving?'. Focusing on the drinker recognises that Australia is a country where alcohol is intricately entwined in almost every leisure, and many business activities, and where one of the worst epithets that can be levelled at an individual is that of 'wowser' (Horne, 1971). At the same time, sprawling cities, vast hinterlands and poor public transport combine to make car ownership not only desirable but almost essential, so that a majority of people travel by car to and from their leisure and recreational pursuits. Small wonder, then, that driving after drinking appears to be an ubiquitous behaviour.

The Study

The data that are presented here are taken from a recent survey of drivers in four states - New South Wales, Victoria, Queensland and Western Australia. The study investigated the general deterrence and general prevention of drink-driving and followed in a tradition of research initiated in the United States by Snortum and Berger in California (in press). Noting that H.L. Ross had argued that harsh legislative procedures had only a minimal and, as he put it, 'evanescent effect' on drink-driving fatalities, Snortum suggested that more than a simple deterrence theory, which used fear of apprehension as the major variable, was needed to evaluate the efficacy of legal provisions. It had been pointed out that the law also serves an educative and moralising function, 'which fosters a change in moral outlook and promotes habitual law abiding behaviour' (in press, p.2). This, however, would be longer term, and gains might be less dramatic than those immediately following legislative change. To explore this possibility, drivers in Norway and the United States were surveyed in 1983 on a range of attitudinal, knowledge and self-reported behavioural questions. In 1986 the survey was repeated with American drivers.

It was found that restraint and control were being exercised by some drivers - and by more drivers in 1986 than in 1983, during which period powerful new drunk-driving legislation was enacted by many American states. By 1986, a significant proportion of drivers took steps to control their drinking or driving, even though the perceived chance of arrest was low. Moreover, these findings were supported by independent evidence, such as the Fatal Accident Reporting System that, over the period in question, alcohol related road fatalities had fallen. Snortum and Berger (in press) concluded that strict drink-driving legislation, if not causal in these changes, at least acted as a catalyst.
In the Australian study, a similar questionnaire was used to that employed in the American and Norwegian studies, so that cross-cultural as well as inter-state comparisons could be made. While the total data set is complex, a small section has been extracted for the current analysis. Most of the data that is to be presented focuses on restraint and control, and looks at direct or self-report measures, and at estimates of maximum blood alcohol for the last occasion on which the driver consumed alcohol away from home, as well as similar estimates for usual consumption. This analysis is a partial replication of that done by Sprott and Berger (in press), who looked at compliance with drink-driving legislation in the United States.

Method

The prevention/deterrence survey was conducted in June 1988, before the introduction of RBT in WA. There were 1504 respondents: 333 from NSW, 339 from Victoria, 333 from Queensland and 499 from WA. Respondents were selected from large metropolitan and regional centres such that 60 per cent of the sample came from urban, and 40 per cent from rural centres. There were equal numbers of men and women, and all respondents were over the age of 17 and had full drivers licences. Only 1 per cent had been disqualified from driving.

Respondents were selected by a stratified probability sampling frame with a cluster size of two. Three callbacks were allowed at each house. The same market research organisation conducted the surveying in each of the four states, so that consistency across states was assured. Respondents were interviewed at home during evenings and on weekends. Response rates were in the region of 80 per cent.

Four major areas of enquiry were covered by the questionnaire:

- **Behaviour**: normal alcohol consumption and preferred beverage; details of alcohol consumed and travel arrangements on last occasion on which alcohol was consumed away from home; self-reported drink-driving behaviour, and arrangements to separate drinking from driving; experiences of police breath testing and convictions for drink-driving; friends’ experiences of testing and being charged.

- **Attitudes towards drink-driving**: perception of the risks of apprehension or accident; moral values about drink-driving; opinions of breath testing; attitudes towards regulations and legal enforcement.

- **Knowledge**: of penalties and regulations and understanding of the relationship between alcohol consumption and blood alcohol concentration.

- **Demographics**: age; sex; education; employment status; occupation; marital status and post code.

Results

Respondents were categorised into drinker types on a Quantity-Frequency measure (Caetano and Suzman, 1982). Those respondents who said they never drank alcohol, or who reported drinking alcohol less than once a year were classified as abstainers and have been omitted from these analyses. This left a drinker sample of 1133.

**Self-reported behaviour**

Respondents were asked a series of questions about their drinking and driving behaviour. Sixty-seven percent claimed not to have driven ‘while slightly intoxicated’ during the previous year; 30 per cent said they never drank before driving, and 30 per cent felt that they could handle more than four drinks before driving. Eighty-three percent said that they drank less before driving, at least sometimes, and 67 per cent said they always did so. Nearly half always arranged for someone else to drive when they were drinking, but 24 per cent never did so.

On the more moral issues, 78 per cent said that it was wrong to drive after consuming four drinks in one hour, and 60 per cent thought that their friends, and 83 per cent their relatives, would probably or definitely disapprove of them doing so. Only 17 per cent thought that they could handle more
alcohol than the average drinker, and 45 per cent said that they could handle less. Finally, 40 per cent said that they used roadside breath testing as an excuse to limit their drinking when they were with their friends.

In summary, what emerges is a picture of people who appear to be aware of the need to control the interaction of alcohol and driving. A majority claimed not to have driven while intoxicated, and/or to have taken some steps to reduce drinking while driving, or found another driver. A large majority felt it was wrong to drive when over the legal BAL, and believed their friends and/or relatives would disapprove of this.

Derived measures

A Maximum Blood Alcohol Estimate (MBAE) was calculated for drinkers for the last occasion on which they consumed alcohol away from home. This calculation is similar to that done for the American studies referred to above (Snortum and Berger, in press) and uses a similar formula:

\[
MBAE = 1.37 \times \left( \frac{\text{No. of drinks}}{\text{Weight in kg}} \right)
\]

The formula assumes that all the drinks were consumed in one hour, and makes no allowance for the lower alcohol tolerance of women (Blaze-Temple et al., in press). A Blood Alcohol Concentration (BAC) calculation was also performed using a formula which did allow for these variables:

\[
BAC = \frac{\text{grams of ethanol consumed} - 7 \times \text{(period of consumption in hours)}}{\left( \text{Widmark factor} \times \text{body weight (kg)} \times 10 \right)}
\]

The Widmark factor is the proportion of the body weight that is water - 0.7 for males, and 0.6 for females (Sloan and Huebner, 1980).

MBAE was a more convenient measure to use for the present analysis because it enabled comparisons to be made with usual alcohol consumption, for which no length of session data were available. MBAE was therefore correlated with BAC to see whether it was a reasonable approximation: the Pearson Product correlation for the total sample was .94: for men this was .97 and for women .86.

Table 1 shows the MBAE for the last away-from-home drinking occasion for people who either drove home or were non-drivers (i.e. were passengers or used public transport) and for women and men. 'Usual' MBAE's were calculated from normal quantity of favourite beverage consumed in a single session and compared across drivers and non-drivers, and women and men. The final section of the table looks at 'restraint' - that is, the difference between an individual's usual consumption and his or her consumption on the last occasion on which they consumed alcohol away from home. This is an approximate measure of restraint only, as it does not take into account usual consumption variation for driving or not driving.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>N*</th>
<th>MBAE</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Last Occasion'</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>506</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>423</td>
<td>0.07</td>
<td>41.27***</td>
</tr>
<tr>
<td>Driver</td>
<td>444</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>Non-Driver</td>
<td>485</td>
<td>0.11</td>
<td>104.34***</td>
</tr>
<tr>
<td>Usual Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>602</td>
<td>0.08</td>
<td></td>
</tr>
</tbody>
</table>
Women 523 0.06 32.91***
Driver 444 0.06
Non-Driver 681 0.07 18.43***

'Restraint' (Usual Consumption Minus Last Occasion)
Men 506 -0.02
Women 423 -0.01 5.85*
Driver 444 0.00
Non-Driver 485 -0.03 37.83***

* There were 929 in the total sample - this represents all of the drinkers minus those who did not have a 'last occasion' within the last 12 months, those who did not drink on the last occasion, and those who refused to give a body weight.

* p <05 ** p < .01 *** p <.005

From Table 1 it can be seen that there are both gender and driving role differences. Men drank significantly more than women, both on the last occasion, and normally. Non-drivers drank more than drivers on the last occasion, and were also those who drank more usually. There was no evidence for restraint in any of the groups, and some people apparently drank more on the last occasion than normally, which may reflect some degree of under-reporting of usual consumption, or, in the case of the non-drivers, a degree of 'celebration' because they did not have to drive.

There are also significant interactions between gender and driving role (Figure 1). On the last occasion, men who were drivers (n=260) had a mean MBAE of 0.06, compared with 0.14 for non-drivers (n=246); there was less difference among the women: 0.05 for the drivers (n = 184) compared with 0.08 for the non-drivers (n = 239). (F = 31.21, p.<.005). More men than women drove home.

**Figure 1**

Mean MBAE For Male and Female Drivers and Non-Drivers from the 'Last Occasion'

A similar pattern is evident for usual consumption, with the male drivers having a mean MBAE of 0.06 compared to 0.09 for the non-drivers, while the women drivers had a mean MBAE of 0.06 whether they were drivers or non-drivers. (F = 13.68, p<.005).

In summary then, although there is no evidence of people drinking less than they would normally
because they were driving, there is evidence that people who normally drank less were those that adopted the driving role.

The analysis can be taken a step further when driver roles both to and from the last occasion are considered. A three-way ANOVA was used to compare mean MBAEs with means of travel to (driver to), means of travel from (driver from) and gender as main effects. There were the same simple and interaction effects for driver from and gender as were seen in Table 1, because those data were identical. The additional information of driver to, allowed who was 'rescued' from the driving role (drove there, but did not drive home) or who 'rescued' (drove home although did not drive there) to be assessed.

There was no difference in the MBAEs of those who did or did not drive to the occasion, and the three way interaction was not significant, but there was a significant interaction between 'driver from' and 'driver to'. These means can be seen in Figure 2.

**Figure 2**
Mean MBAE For Drivers and Non-Drivers To and From the 'Last Occasion'

<table>
<thead>
<tr>
<th>D/D</th>
<th>Drove both ways</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/ND</td>
<td>Driver there, driven home</td>
</tr>
<tr>
<td>ND/D</td>
<td>Driven there, drove home</td>
</tr>
<tr>
<td>ND/ND</td>
<td>Non-driver both ways</td>
</tr>
</tbody>
</table>

It is clear from Figure 2 that while those who drove home from the last event had been more restrained in their drinking than those who did not drive home, this restraint was stronger in those who also drove to the event; i.e. those who perhaps had anticipated that they would be two-way drivers. The least restrained were those who were rescued from driving home, followed by the two way non-drivers who may have arranged to have an evening out without having to worry about driving. The rescuers were more sober than the non-drivers, which is appropriate, but not as sober as those drivers who appear have known in advance that they would be driving home, and prepared accordingly.

The picture becomes a little clearer with the addition of gender differences as in Table 2, which shows mean MBAEs of men and women in the four possible driver combinations: two-way driver, drove to but driven from, driven to but drove from, and two-way non-driver.

**Table 2**
Mean MBAE of Drivers and Non-Drivers for the 'Last Occasion' as a Function of Means of Transportation To and From the Event

<table>
<thead>
<tr>
<th></th>
<th>MEN (n=506)</th>
<th>WOMEN (n=423)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td>Drove both ways</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>(50.2)</td>
<td>(33.3)</td>
</tr>
<tr>
<td>Drove to, but driven home ('rescued')</td>
<td>0.15</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>(14.2)</td>
<td>(4.3)</td>
</tr>
<tr>
<td>Driven to, but drove home ('rescuers')</td>
<td>0.16</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>(1.2)</td>
<td>(10.2)</td>
</tr>
<tr>
<td>Did not drive at all</td>
<td>0.14</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>(34.4)</td>
<td>(52.2)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>(100.0)</td>
<td>(100.0)</td>
</tr>
</tbody>
</table>

Male and female two way drivers were equally restrained in their drinking, and both had an average blood alcohol estimate at .05. The similarity between men and women ends there, however. Men who were 'rescued' from the driving role had an average MBAE of .15, and obviously needed rescuing. There were 72 of them, or 14 per cent of the male group. The women who were rescued were also over the legal limit with an average MBAE of .10, but had not drunk as much as their male counterparts and there were fewer of them. It is tempting to speculate that the rescued were, by and large, rescued by women - 10 per cent of the female group switched roles to drive home, although they had a slightly higher MBAE than those women who had started out driving. The male rescuers, however, had the highest blood alcohol estimates of any of sample - .16 - and it is fortunate that they represent only a tiny group - there were, in fact, only six of them. There were more 'rescued' than 'rescuers', but this perhaps reflects the driving roles of abstainers, who were not included in the analysis. Finally, those who did not drive at all apparently felt free to celebrate - both men and women had higher MBAE than the drivers, with the men having particularly high estimates.

In summary, then, there are differences between the driving roles people choose for themselves based on how much they have drunk, or, perhaps, intend to drink. Those who appear to have planned to drive home (two way drivers) drank less than those who did not drive, and these blood alcohol levels were not affected by sex, although a greater proportion of men than women fell into this category. On the other hand, those who had arranged alternative transport both to and from the event drank much more - they kept themselves safe on the roads, although one might speculate about other problems of intoxication. The women who were 'rescuers' were relatively safe, and there was an aberrant group of six men who drank a great deal and then drove home. Finally, those who were 'rescued' apparently realised, or were made to be aware, that they were in no fit state to drive.

Table 3 and Figure 3 are concerned with the reduction in consumption on the last occasion as a function of normal drinking patterns, in order to see whether those who normally drank the most were any more or less likely than those who normally drank less to reduce their consumption if they were driving. This is important because of the increased risk to those who drive with higher blood alcohol levels. There is also some suggestion in the literature that heavy drinkers might be the most resistant to behaviour change (Homel, 1988) so that is important to ascertain what type of drinkers are changing their drinking behaviour before driving, and by how much.

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Figure 3 shows the percentage of drinkers whose usual alcohol consumption gave them a MBAE of greater than .05 who reduced their consumption on the last occasion. The drinkers are divided into three categories - Usual MBAE greater than .15, between .08 and .015, and between .05 and .08. Reasonably, there were no drinkers whose usual consumption was less than .05 who reduced their consumption on the last occasion.
It is clear from Figure 3 that many of the heavier and moderate drinkers who were driving were able to reduce their consumption, although fewer of the lighter drinking drivers apparently felt the need to do so. These gross effects can be seen in more detail in Table 3, where the amount of reduction is analysed.

**Table 3**

Cumulative Percentage of Drivers and Non-Drivers Who Drank Less Than Specified MBEAs on the 'Last Occasion' As a Function of Usual Alcohol Consumption

<table>
<thead>
<tr>
<th>Usual MBAE</th>
<th>MBAE on Last Occasion Less Than</th>
<th>N</th>
<th>.01%</th>
<th>.05%</th>
<th>.08%</th>
<th>.15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBAE .15%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drivers</td>
<td>26</td>
<td>0</td>
<td>15.4</td>
<td>42.3</td>
<td>65.4</td>
<td></td>
</tr>
<tr>
<td>Non-drivers</td>
<td>64</td>
<td>0</td>
<td>3.1</td>
<td>10.9***</td>
<td>29.7***</td>
<td></td>
</tr>
<tr>
<td>MBAE .08 - .15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drivers</td>
<td>65</td>
<td>0</td>
<td>41.5</td>
<td>60.0</td>
<td>93.8</td>
<td></td>
</tr>
<tr>
<td>Non-drivers</td>
<td>103</td>
<td>0</td>
<td>6.8***</td>
<td>21.4***</td>
<td>69.9***</td>
<td></td>
</tr>
<tr>
<td>MBAE .05-.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drivers</td>
<td>115</td>
<td>0</td>
<td>40.0</td>
<td>81.7</td>
<td>96.5</td>
<td></td>
</tr>
<tr>
<td>Non-drivers</td>
<td>110</td>
<td>0</td>
<td>15.5***</td>
<td>47.3***</td>
<td>82.8***</td>
<td></td>
</tr>
<tr>
<td>MBAE &lt;.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drivers</td>
<td>238</td>
<td>0</td>
<td>75.6</td>
<td>94.5</td>
<td>99.5</td>
<td></td>
</tr>
<tr>
<td>Non-drivers</td>
<td>208</td>
<td>0</td>
<td>61.5***</td>
<td>79.8***</td>
<td>93.3***</td>
<td></td>
</tr>
</tbody>
</table>

*p <05 ** p < .01 *** p <.005

Table 3 divides respondents into four subgroups based on the MBAE of their usual consumption of their favourite beverage. This is used as the baseline measure, against which people's reduction in consumption on the last occasion can be seen. To take those in the heaviest drinking category first, only a minority chose to drive home, but of those few who did so, 65 per cent modulated their consumption below .15, and 42 per cent reduced to below .08, which in some states would have put
them within legal limits. (Given that these are maximum estimates, exact delineations of who might and who might not have been safe are difficult). Of the non-drivers, who function as a control group, however, only 30 per cent reduced their consumption on the last occasion, and only 11 per cent to within reasonably safe limits. Clearly, then, the knowledge that one was going to drive was salient to the heavy drinkers. There was a significant difference in modulation to below .15, and below .08 between the drivers and non-drivers.

In the second group - those who usually drank to MBAEs of between .08 and .15 - 60 per cent of the drivers reduced their consumption to below .08, in what appears to be compliance to drink-driving legislation. Of these, almost 42 per cent managed to reduce to below .05, although it is a matter of concern that 40 per cent were still drinking at above .08 and driving home. This, however, represents a fairly small number of drivers, as there were only 65 drivers altogether in this group. Again, the differences between drivers and non-drivers are significant, with non-drivers less likely to reduce their consumption.

Even within the groups where usual consumption would hardly place the driver at risk, there is evidence of some restraint among drivers. Forty per cent of those who normally drank to no more than .08 reduced their drinking to below .05 - an effect that has been labelled prevention, given the increased risk of accident from .05 to .08 (Snortum and Berger, in press). This compares to only 16 per cent of non-drivers in this group who also reduced their consumption on the last occasion. There are, however, a number of those in lower drinking categories, both drivers and non-drivers, who drank more than usual on the last occasion, which suggests that there may be under-reporting of usual consumption for these drinkers.

Generally, then, there is evidence that many drinkers, even those who normally drank heavily, moderated their drinking on the last occasion on which they consumed alcohol away from home, although a majority of the heaviest drinkers elected not to drive. There are strong contrasts between drivers and non-drivers on these measures, suggesting that the driving role was very relevant. However, if a cut off line of .08, as the most generous point of being within legal limits is assumed, more than half of the heaviest, 40 per cent of the next heaviest, 20 per cent of the next to lightest and, 5 per cent of the lightest alcohol consumers still drank enough alcohol to put them over the legal limit, and drove home. This represents many people who were behind the wheel with too much alcohol in their bloodstreams.

Discussion

The overall impression to be gleaned from this analysis is that there is some good news and some bad news. The good news concerns the number of drinkers who appear to be complying with drink-driving legislation; the bad news, of course, concerns the number of drinkers who are still driving with dangerous blood alcohol concentrations. There are also some questions which are unresolved, and these have to do with the adequacy of self-report measures and the lack of understanding people display of serving sizes and the differing strengths of alcohol beverages.

To take the good news first then, it seems that many people do care about drink-driving laws, and do try to separate their drinking from their driving or, at least, to drink less when driving. Many people reported that they did not drive when intoxicated, or that they drank less when driving, and moreover, many felt that it was wrong to drive when they were likely to be over the legal BAL.

Compliance with drink-driving legislation can take a number of forms. People can generally consume no more alcohol than would allow them to legally drive a car. Drinkers can reduce their consumption if they are driving. People can find alternatives to driving such as using public transport, or finding someone else to drive them, if they are drinking. When we look at how drinkers coped with transportation on the last occasion on which they consumed alcohol away from home, we found evidence of all three strategies. Those whose usual consumption was the heaviest were less likely to drive home that those whose usual consumption was lighter. The choice of
driving role appeared also to have been influenced by a consideration of how much alcohol had been consumed. Generally, drivers had drunk less than the non-drivers, and those who had driven to the event and then apparently drunk too much were likely to have been driven home. Finally, there is evidence that some drivers in all consumption categories - even the heaviest - moderated their drinking, often to within safe limits, when driving. That even heavy drinkers do alter their behaviour if they are driving is consistent with findings in NSW (Homel, 1988) and the United States (Snortum and Berger, in press).

What, then, is the bad news? There was a sizeable minority of drinkers who claimed never to moderate their drinking because they were driving, and felt that it was morally acceptable to drive after drinking four beers (as the question was asked) in an hour. Nearly a third of the sample felt that they could personally handle that amount of alcohol, or more, and still drive safely.

Although there was no evidence that the drivers drank less on the last occasion than normally, the heaviest drinkers did not drive. There is some suggestion that 'rescuers' (those who adopted the driving role home, although they were non-drivers to the occasion) had higher blood alcohol concentrations driving home that those who apparently planned to drive home. This suggests that the decision about who is to drive home ought to be made at the beginning of the evening, rather than at the end, when judgment may be clouded.

There was also a minority of drinkers in each category who did not reduce their drinking when driving. With the most generous interpretation, more than half of the heaviest drinkers, 40 per cent of the next heaviest, and 20 per cent of lighter drinkers were driving home with unsafe blood alcohol concentrations.

The latter finding raises questions about the accuracy of the self-report of 'usual' consumption, given that for many people it was lower than consumption on the last occasion. The 'usual consumption' calculation relied on a self-report of how much of the preferred alcoholic beverage was normally consumed in a single sitting. However, self-report of alcohol consumption is notoriously inaccurate (Blaze-Temple et al., 1988). In a community, the amount of alcohol consumed according to self-report is always less than the amount of alcohol sold, and it is known that such factors as forgetting and deliberate or defensive under-reporting affect self-reports. There are also difficulties inherent in catching the heaviest drinkers at home for inclusion in household surveys, which means that these drinkers are likely to be under-represented in such surveys (Blaze-Temple et al., 1988).

Even if our respondents were reporting accurately as far as they could remember, there is still the problem of glass and serving size. People were asked how much they had consumed in terms of standard drink, or pub serving, sizes but it is clear that for those who drink at home, who are in the majority, the quantity poured is often unknown, and people tend to underestimate the amount of alcohol they are consuming, often by a factor of two (Carruthers and Binns, 1987).

Further complications arise when the strength of the beverage is taken into account (Stockwell and Stirling, in press). The calculations for this study assumed 11.4 grams of ethanol per standard drink, but this can vary widely - in Western Australia, 'full strength' beer can vary from 5 to 9 per cent alcohol by volume and wine from 8 to 15 per cent. Even if our respondents, then, knew accurately how much they were drinking, neither they, nor the research design, were able to take these differing strengths into consideration.

None of these unresolved questions, of course, cloud the comparisons between drivers and non-drivers. They do, however, suggest that the 'good' news may not be quite as good as it sounds. People may truthfully report drinking within safe limits, but the environment hardly supplies them with enough information, such as knowledge about standard drink sizes, or accurate labelling of alcohol containers, to really know how much alcohol they are consuming. Drinkers who appear to be safe drivers, then, may, through no fault of their own, not be safe at all.
Having said that, it is encouraging to see strong evidence that so many people modify their drinking if they know they are driving. They need assistance and information, however, to enable them to ensure that the modification is sufficient.

**FOOTNOTES**

1. Contrasts between drivers and non-drivers were tested with two by two chi-square tables for the cumulative frequencies at each of the four last occasion MVAE categories.

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