The long term benefits of random breath testing in NSW (Australia): Deterrence and social disapproval of drink-driving

R.F. Soames JOB, Tasha PRABHAKAR, S.H. Vivian LEE
Department of Psychology, University of Sydney, NSW 2006, Australia

SUMMARY

Random Breath Testing (RBT) was introduced in the state of New South Wales (NSW) in 1982. Its continued operation and associated media campaigns have produced long term benefits, with the percentage of fatal crashes involving illegal blood alcohol concentration dropping by 12 percentage points since RBT, with an estimated saving of over 1600 lives. The present paper reports the results of a series of door-to-door surveys of NSW drivers’ attitudes, knowledge and behaviour in relation to RBT and drink-driving. Surveys were conducted just prior to the introduction of RBT in 1982, in 1983, 1984, 1987, and 1993 (Total N= 3,751). The results suggest that the perceived probability of apprehension by RBT has been maintained. The long term success of RBT appears to be due to a legal deterrence effect and greater social disapproval of drink-drivers who have been viewed increasingly as irresponsible, a criminal and a potential murderer. These attitudinal changes may be accounted for in terms of cognitive dissonance: Forced behavioural compliance (due to threat of legal sanctions) may have caused some dissonance which has been at least partially reconciled by less favourable attitudes towards drink-driving.

INTRODUCTION

Alcohol induced impairment is a major contributor to road trauma throughout the developed world (Ross, 1985), including Australia (Prabhakar, Lee & Job, 1994; Longo, Hunter & Lokan, 1996). For example, from 1990 to 1994 inclusive, 31% of fatally injured drivers in Australia were found to have blood alcohol concentrations over the legal limit of 0.05 (Federal Office of Road Safety [Australia], 1995).
In December, 1982, Random Breath Testing (RBT) was introduced in the state of New South Wales (NSW). RBT involved drivers being stopped by police at random (i.e. without any requirement of suspicion of alcohol intoxication) and tested for blood alcohol concentration (BAC). Prominent breath test stations (typically involving a large bus for evidential testing) were employed along roadsides as part of the high profile introduction of RBT. Vehicles were randomly selected for testing from the passing stream of traffic.

The introduction of RBT in NSW differed from the introduction of similar measures in many other countries in that the campaign was more intensive and aimed at long term effects from the beginning (Job, 1985). The introduction of RBT included extensive media campaigning on television, radio, in print, and on road-side billboards. There was also a deliberate effort to ensure direct exposure to RBT which was aimed at testing one in every three drivers in one year. Subsequent media campaigns have been based in significant part on the sequence of research presented here, and have included campaigns aimed to stop drivers taking back streets to avoid RBT stations, promotion of the number of testing being conducted, and education as to the number of drinks which can be consumed and still remain below the legal limit. This total package of enforcement, road-side prominence and mass-media campaigning is evaluated in the present research.

**CRASH DATA BASE ANALYSIS**

Crash data bases were examined as a basic step in the evaluation of RBT. While it is recognised that attribution of effects on road trauma to RBT is likely to be confounded by other changes, relevant data suggest that substantial effects have been achieved. First, analysis of crash statistics to overcome the problem of incomplete records of blood alcohol concentrations of crash involved drivers suggests that alcohol involved crashes have been reduced by RBT in NSW (Stanislaw, 1996). Second, there has been a sudden and subsequently consistent drop in the proportion of fatal crashes which involved illegal levels of blood alcohol from the time of RBT (Prabhakar et al., 1994). By considering the proportion of alcohol involved fatalities prior to RBT and the proportion since RBT, Prabhakar et al. (1994) estimated the savings of lives by RBT at 1338 people up to 1992. This estimate of savings arises from applying the percentage of alcohol involvement prior to RBT to the number of non-alcohol-involved crashes after RBT and comparing the resulting total with the actual total for that year. Continuing the same logic the number of lives saved in NSW up to and including 1994 is 1559. Third, the neighbouring state of Victoria can be taken as a
comparison to address the possibility that alcohol involvement was dropping generally in Australia regardless of RBT in NSW. This comparison supports the contention that the drop was due to RBT: in the two years prior to RBT, the state of NSW averaged three percentage points more fatally injured drivers (including motorcycle controllers) with illegal concentrations of alcohol whereas for the five years after RBT NSW averaged 5 percentage points less alcohol involved fatally injured drivers and motorcyclists than Victoria. Finally, the involvement of alcohol in fatally injured drivers has continued to remain low in NSW. For the two years prior to RBT over 405 of fatally injured drivers were over .05 BAC, compared with 34.5% for the two years after RBT and 25.5% for 1993 and 1994.

The above data point to the long term effectiveness of RBT in NSW. The present research addresses the psychological mechanisms by which these effects were achieved. (This line of research was supported by funding from the Roads and Traffic Authority to R.F.S. Job and others, and by a grant from the Federal Office of Road Safety to the authors.)

**METHODS**

Door-to-door surveys of drivers were conducted prior to the introduction of RBT late in 1982, 1983, 1984 (see Job, 1985, 1990), 1987, and 1993. In each survey year many identical questions were included in order to allow comparison of responses across the years. Interviews were conducted mainly in the metropolitan area of Sydney as well as in Woollongong and a number of rural areas. The sample sizes for the surveys were: 993 in 1982, 988 in 1983, 971 in 1994, 502 in 1987, and 287 in 1993. The refusal rate varied from 30% in the early surveys to 45.7% in the 1993 survey. Dwellings were selected from randomly selected starting points and drivers were randomly selected within households, within age and gender stratifications. Further details of methods are available from Job (1990).

Statistical analyses were generally conducted using Chi-square tests (unless otherwise specified) for changes in proportions providing the different answers, and for all significant differences the alpha rate was set at .05.
RESULTS

Optimism bias about driving after consuming alcohol.
In relation to driving and road safety people show the typical optimism bias effect by on average rating their ability as better than the average for their peers, and rating their chances of being injured or killed in a crash as less than the average for their peers (Dalziel & Job, in press; DeJoy, 1986; Job, 1990; Lee & Job, 1995; Prabhakar et al., 1996). In the present study, drivers were asked to rate the extent to which their ability to drive is affected by alcohol, compared with average. In the earlier surveys this question had revealed optimism bias (Job, 1990). However, in males although there was not a statistically significant change from 1982 and 1983 to 1993, there was no significant optimism bias in 1993 (ie. respondents on average rated the effect of alcohol on their driving as about the same as average). In females, there was a statistically significant change from 1982, 1983 and 1984 to 1993 (Kolmogorov-Smirnov tests), with significant pessimism in 1993 (eg., less than 6% of female respondents rated the effect of alcohol on their driving as less than or much less than average, whereas over 42% rated the effect as greater than or much greater than average). Despite the lack of optimism bias in relation to ability to drive after consuming alcohol, optimism bias regarding ability to drive continued to be present throughout the surveys.

Legal deterrence versus avoidance of detection by RBT.
Perceived risk of detection is a critical component of deterrence. As shown in Figure 1, the perception that RBT cannot be avoided (eg., by taking small back streets) has steadily decreased.

The percentages of people reporting that RBT can be avoided has changed significantly from 1983 (33.0%) and 1984 (26.8%) to 1993 (18.4%).

Consistent with a deterrence effect of RBT, in the 1993 survey the vast majority of respondents reported having seen an RBT station in action (97.5%), and 71.3% reported having been random breath tested.

Social deterrence: Disapproval of drink-driving.
Respondent were asked to classify an habitual drink-driver who is caught driving over the legal limit as Unlucky, Stupid, Irresponsible, Criminal, or a Potential Murderer. A statistically significant gender effects was observed in the 1993 survey (such that females were more
disapproving of the driver described) and so the genders were analysed separately, as shown in Figure 2 parts a and b.

**Figure 1. Deterrence Perception: Percentage of drivers who report that they cannot avoid RBT, over surveys.**

In male drivers disapproval increased significantly from the pre-RBT survey to the 1993 survey with the proportion of respondents who classified the drink-driver as Unlucky, decreasing from 22.4% in 1982 to 8.6% in 1993. This immediate effect of RBT in males has persisted but has not been followed by any further statistically significant change from the first post-RBT survey (1983) to the most recent survey (1993).

Female drivers show a different pattern with statistically significant increases in disapproval from the pre to post RBT surveys, and further changes in the direction of greater disapproval since the introduction of RBT (eg. between the 1983 and 1993 survey results). Females have become more likely to describe a drink-driver as criminal or a potential murderer. Therefore, it appears that RBT has produced a change in moral values toward greater disapproval and a change in attributions such that drink-driving is seen as controllable rather than a matter of luck.

In response to questions about the reactions of friends to the respondent drink-driving, respondents also perceived their peers’ attitudes to have changed. Peers were reported to be significantly less likely to show approval or indifference and more likely to take other actions such as stopping the respondent from driving, from the pre to the post RBT surveys (for
example in the pre-RBT survey 47% reported that their peers would stop them from driving compared with 52% in 1983 and 57% in 1993).

Finally, in the 1993 survey only 1 of the 287 respondents interviewed strongly agreed with the statement that RBT is too tough on drink-drivers, whilst the vast majority disagreed or strongly disagreed. This question had not been included in previous surveys.

**Figure 2. Percentage of Respondents who Classify a Drink-driver who is Caught Over the Limit. Categories: unlucky; stupid; irresponsible; criminal; potential murderer.**

**a. Males**

![Graph showing the percentage of respondents who classify a drink-driver who is caught over the limit by category for males across years 1982 to 1993.]

**b. Females**

![Graph showing the percentage of respondents who classify a drink-driver who is caught over the limit by category for females across years 1982 to 1993.]

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CONCLUSIONS

The long-term success of RBT in NSW is profound and appears to have arisen in the first instance from deterrence which forced a change in behaviour. In many people the cognitive dissonance (see Cooper & Fazio, 1984), thus generated between avoiding drink-driving while still not feeling it was wrong may have been resolved by changes of attitude such that drink-driving is now regarded more negatively.

RÉFÉRENCES


