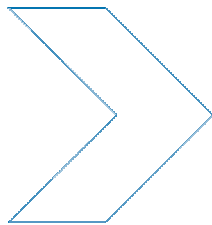# Centre for
Automotive Safety Research

South Australia's Driver Intervention Program: Participant characteristics, best practice discussion and literature review

LN Wundersitz, TP Hutchinson

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South Australia's Driver Intervention Program: Participant characteristics, best practice discussion and literature review

AUTHORS

LN Wundersitz, TP Hutchinson

PERFORMING ORGANISATION

Centre for Automotive Safety Research
The University of Adelaide
South Australia 5005
AUSTRALIA

ABSTRACT

The Driver Intervention Program (DIP) is a 90-minute interactive small group workshop that aims to address the over representation of young drivers in crashes by confronting them with the potential risk and consequences of road trauma. Any driver aged 25 years and under who has breached the conditions of their South Australian Learner's Permit or Provisional Licence, and has been subsequently disqualified from driving, is required to attend.

In the present report, the operation, content and program delivery of the DIP was compared to programs elsewhere that have similar aims. Methodological limitations are acknowledged. Results are given of a survey of personality characteristics and driving related attitudes of a sample of DIP participants, and a comparison is made with those of other young South Australian drivers (University students). DIP participants were found to be personally well adjusted and not very different from the students. However, there were differences on some measures related to aggression. Finally, key findings from the literature review and the psychological profile of DIP participants are brought together and discussed in terms of potential future directions for the DIP.

KEYWORDS

Young driver, Offence, Driver characteristics, Driver retraining

Summary

The Driver Intervention Program (DIP) is a 90-minute interactive small group workshop that aims to address the over representation of young drivers in crashes by confronting them with the potential risk and consequences of road trauma. Any driver aged 25 years and under who has breached the conditions of their South Australian Learner's Permit or Provisional Licence and has been subsequently disqualified from driving is required to attend.

In the present report, there is a selective review of literature on driver improvement, and a description of the personality characteristics and driving related attitudes of DIP participants.

The operation, content and program delivery of the DIP were compared to programs elsewhere that have similar aims. Methodological limitations were acknowledged. Our view is as follows.

- The general quality of empirical evidence about the effectiveness or otherwise of these programs is quite poor.

- No exemplar driver improvement programs exist that convincingly establish best practice.

- It is unlikely that any program will have a large effect on crashes.

- Such programs are cheap (compared with the costs of deaths and injuries), and even if of low effectiveness are nevertheless sometimes worthwhile.

- Several ideas have been proposed in recent years that offer some hope for better programs in the future.

A survey compared the personality characteristics and driving related attitudes of a sample of DIP participants with those of a group of young South Australian drivers (university students). The aim was to assist in tailoring DIP to the specific motivational needs of the young traffic offenders. The profile of characteristics for DIP participants indicated they were not a psychologically dysfunctional group in comparison to the students, but a relatively normal group. However, there were differences on some measures related to aggression; DIP participants reported higher levels of driving related aggression and driving to reduce tension (males only). They also reported less safety-oriented attitudes towards road safety issues than the comparison group.

Key findings from the literature review and the psychological profile of DIP participants were brought together and discussed. Some options for developing or modifying the DIP were also examined.

- Some details of the delivery of DIP could be improved.

- Increasing the number or length of sessions, or increasing the degree of psychological engagement could strengthen the program.

- Delivery of some elements of the program by computer might be practicable.

- The program could be targeted more specifically at the driver's selection of driving speed.

- Something resembling psychotherapeutic treatment may be useful (e.g., for reducing driver aggression).

- Perhaps there should be a concerted attempt to obtain better evidence: one approach would be to conduct a randomised experiment.

Contents

1   Introduction

The Driver Intervention Program (DIP) is a 90-minute interactive small group workshop that aims to address the over representation of young drivers in crashes by confronting them with the potential risk and consequences of road trauma. Any driver aged 25 years and under who has breached the conditions of their South Australian Learner's Permit or Provisional Licence and has been subsequently disqualified from driving is required to attend.

The DIP has been running for approximately 10 years. It was first evaluated in 1996, at the outset of the program. Over 10,000 young offenders have now attended the program, and it is time for another review. The present report is part of that process. This report has two main sections: a selective review of literature on driver improvement, and a description of the personality characteristics and driving related attitudes of DIP attendees.

Three features of the operation of the DIP are worth noting at this point. (a) It is not limited to young drivers who have repeatedly broken the law. One offence of speeding is sufficient for licence disqualification. (b) Many young drivers successfully appeal against disqualification, but are nevertheless required to attend DIP. (c) A substantial number of those required to attend DIP do not do so (but pay an expiation fee instead).

Section 2 of this report will summarise the current DIP management procedures, program delivery, facilitator qualifications and experience, and course content. In Section 3, the operation, content and program delivery of DIP will be compared to programs elsewhere that have similar aims. Methodological limitations are acknowledged. Section 4 reports a survey of personality characteristics and driving related attitudes of a sample of DIP attendees, and makes a comparison with those of other young South Australian drivers (university students). Finally, in Section 5, key findings from the literature review and the psychological profile of DIP participants are brought together and discussed in terms of potential future directions for the DIP.

2   The Driver Intervention Program

The Driver Intervention Program (DIP) was launched in South Australia during June 1994. The program aimed to address the over representation of young drivers in crashes by confronting them with the potential risk and consequences of road trauma through interactive small group discussions. The intention was to integrate DIP with other road safety measures targeting young drivers.

The first phase of the program targeted any driver on a South Australian Learner's Permit or Provisional Licence who was disqualified from driving through detection for an alcohol-related offence. A best practice review of the program was first commissioned by the Office of Road Safety prior to the commencement of phase 2 in 1996 (Drummond, 1996). The second phase of the program commenced in July 1996. The program was expanded to target any driver on a South Australian Learner's Permit or Provisional Licence who was disqualified from driving for any type of traffic offence that violated the conditions of their permit or licence. This resulted in over 3000 young offenders being required to attend annually.

This section of the report describes current DIP practices: which young drivers are required to attend, operation of the program including program delivery, and course content.

2.1   Who must attend DIP?

Any driver aged 25 years and under who has breached the conditions of their South Australian Learner's Permit or Provisional Licence and has been subsequently disqualified from driving is required by the Registrar of Motor Vehicles to attend the program under provisions stated within the Motor Vehicles Act (Section 82B, Motor Vehicles Act, 1959). The conditions of a Learner's Permit or Provisional Licence state that drivers must not: have any alcohol in their blood whilst driving, exceed the speed limit by more than 10km/h, or drive without displaying prescribed L or P plates on the front and rear of the vehicle. Additionally, drivers must carry their permit or licence at all times while driving, not incur four or more demerit points, and learners must be accompanied by a fully licensed driver. A maximum speed limit of 80km/h applies to learners and 100km/h for provisional drivers. Even if a driver successfully appeals against their penalty of licence disqualification, they must still attend the program as attendance is based upon the offences committed, not the penalty. The legislation also states that only disqualified drivers within a 100km radius of a DIP venue are required to attend.

The type of traffic offences leading to licence disqualification (and DIP attendance) are given for a sample of young drivers attending DIP in Table 4.4 in Section 4.3.1.

Drivers must pay a $32 fee for the program and are required to attend a session within six months from the date of their first notice to attend. Two subsequent reminder notices are sent. Failure to attend within the specified period is considered an offence with a maximum penalty of a $125 fine. An expiation notice is issued to those who fail to attend and they have 28 days to pay the $74 expiation fee ($64 + $10 victims of crime levy) or elect to be prosecuted in court. A reminder notice is sent if the previous expiation notice has been ignored. Drivers are informed that they must pay the cost of the reminder notice ($30) in addition to the expiation fee. If drivers continue to take no action, an enforcement order is issued and drivers are required to pay the expiation fee, cost of the reminder notice, and court costs.

Drivers incurring the expiation fee are no longer required to attend the program unless they are disqualified from driving again. Drivers who attended the program are not required to attend the program again even if they receive another licence disqualification.

The number and percentage of young drivers required to attend DIP sessions from 1 July 2003 to 30 June 2004 are presented in Table 2.1 by attendance status. Of the 3319 required

to attend, 2667 (80%) were male. Approximately 69 per cent actually attended a DIP session while 27 per cent incurred an expiation fee and did not attend. An 'Inactive' status indicates that the driver had a legitimate excuse for not attending DIP at present (i.e. overseas, recently entered defence force) but is still required to attend at a later time.

Table 2.1
Attendance status for young drivers required to attend DIP, financial year 2003/04

Attendance status	Number	Percentage
Attended	2282	68.8
Did not attend (expiation notice)	901	27.2
Inactive	135	4.1
Total	3318	100.0

2.2 When and where

The program takes approximately 1.5 hours and is held on Monday, Tuesday and Wednesday evenings between 7pm and 8:30pm. In accordance with demand, programs are occasionally run on a Saturday morning.

Participants are warned that they may be asked to leave the session and re-attend another if they are under the influence of alcohol and/or drugs or arrive 5 minutes after the session has commenced.

As at early 2006, the program is held in nine venues within metropolitan Adelaide: Enfield (previously Hampstead), Oaklands Park, Noarlunga, Salisbury, Fullarton, Gawler, Norwood, Marion and Croydon. Venues also operate in some rural regions: regularly at Murray Bridge, Victor Harbor, Tanunda, Berri, Kadina, Mount Gambier and Naracoorte, and when numbers are sufficient, at Clare, Whyalla, Port Pirie and Port Augusta also.

2.3 Facilitators

The people responsible for delivering the DIP are termed facilitators. They have been recruited from a wide variety of fields and are not necessarily road safety experts. Two facilitators have a permanent disability as a result of a crash.

Currently, 11 trained facilitators are actively delivering the program on a regular basis and ten facilitators are in the process of being trained. In addition, approximately 12 police officers also assist in facilitating sessions.

The Transport SA DIP manager trains facilitators. After the observation of several DIP sessions conducted by the manager or another trained facilitator, new facilitators are expected to take an active role in leading DIP sessions with the assistance and support of the trainer/manager. Feedback is provided to facilitators during a short de-briefing after each session where any issues, concerns and suggested improvements are discussed. Training is completed when the trainer is satisfied with the standard of the facilitator's program delivery and the facilitator feels competent in leading small group discussions without the trainer's assistance. Thus, the length of the training period can vary between facilitators.

A co-ordinator is employed to manage the staffing of facilitators and administer bookings.

2.4 Program delivery

The program involves interactive small group discussions led by two facilitators. The maximum number attending each session is restricted to 16. During the majority of the session, the group is divided into two smaller groups so that each facilitator has no more

than 8 participants in a group. In some venues, only one room is available for the program. In this situation, the number of participants is restricted to approximately 12.

Rather than taking the traditional intervention approach of authorities lecturing young drivers on road safety, the strategy behind DIP is to let young drivers find their own need for attitudinal or behavioural changes by letting them draw their own conclusions as to how they might change. It is believed that the process of placing young driver decisions under personal control will make them more motivated for attitudinal or behavioural change (Gregersen and Berg, 1994). This strategy is also intended to enhance young driver self-efficacy, that is, to perceive they have the opportunity and resources to perform the behaviour. According to Ajzen (1991), this perception is thought to facilitate behavioural change.

In order to achieve these intended outcomes, the facilitator's role is to encourage participants to express their views and discuss road safety issues in a 'friendly, supportive and non-threatening environment'. Facilitators are directed to guide debate on the issues within the structured program but not impose their own beliefs and values or patronise participants. Participants are encouraged to conceptualise issues through their own experiences and frame of reference so that they question their own driving behaviour and consider the risk and consequences of crashing. To encourage open discussion and debate, participants are reassured that all conversations within the program remain confidential to the group present.

2.5   Course content

The main aim of DIP is to reduce young driver crash involvement by challenging young drivers to think about the potential risk and consequences of crashes and question their own sense of invincibility. The five main components of the program cover the relationship between youth and crash involvement (risk taking behaviour), social norms and behaviour rationalisations, lifestyle issues, the consequences of crashing, and reinforcement of vulnerability or the potential reality of crashing. Details of the five main components of DIP are given in Table 2.2.

Table 2.2
Components of the Driver Intervention Program

Program Components	Issues discussed	Approx. timing
Risk taking behaviour	Young driver crash statistics Causes of young driver crashes	10 mins
Social norms and behaviour rationalisations	Specific driving behaviours (i.e. speeding, inexperience, fatigue) in relation to social context and peer pressure	20 mins
Lifestyle issues	Alcohol and drug driving 'Rocket' video Choices and potential strategies to avoid drink/drug driving	35 mins
Consequences of crashing	Monetary loss and personal consequences of crashing Own crash experiences	20 mins
Reinforcement of vulnerability	Self assessment of driving ability	5 mins

In the first section of the program, the fact that young drivers are over represented in crashes is presented to participants using several graphs depicting crash statistics. Participants must then identify why they think young drivers are over represented in crashes and discuss the causes of young driver crashes.

In the second section of the program, the social norms and rationalisations for certain behaviours leading to young driver crashes are debated. Speeding behaviour is usually discussed and when time permits, fatigue and/or inexperience. Issues explored include the context in which the behaviour is perceived to be safe and, alternatively, dangerous; the influence of peers; and the potential strategies to avoid engaging in the behaviour.

The third section of the program investigates lifestyle issues in relation to alcohol and drug driving. A short video (3 mins) is shown depicting a party scenario where a young driver 'Rocket' is determined to drive after drinking. Other 'friends' at the party are shown encouraging and discouraging Rocket from driving. The concept of standard drinks, factors that influence drinking outcomes, and strategies to avoid driving after drinking are discussed based around the drama but also in reference to participant's real life experiences. The effect of illicit drugs on driving is also discussed.

In the fourth section of the program, the potential and real consequences of crashes are discussed. Participants are encouraged to think about monetary and personal losses through crashing.

Prior to the commencement of the DIP session, participants are asked to rate their skill as a driver, on a scale of 1 to 10. In the final section of the program, the results from the self-assessment of driving ability are discussed whilst reinforcing that young drivers are not invulnerable to crash involvement.

3   Selective literature review

Before the literature review proper, there will be two preliminary sections. The first will orient the reader to our general attitude (some degree of scepticism about the likely effects of a driver training intervention), and the second will say something about research methodologies that might be used to evaluate driver training interventions.

We should first indicate how relevant we think previous research is to the DIP: are there any empirical results, we might ask, that should compel our attention? Our answer to this is that we think not. Driver improvement is a topic that has attracted a vast amount of research over the years, and there have been many studies that might be relevant to some degree. But, to the best of our knowledge, they were all conducted far away or on a different client group or with a different intervention program or using unconvincing methodology.

Thus we need to consider studies that might be relevant to some degree, exercise our judgment as to which may be illuminating for the present purpose, and accept that other people might hold different opinions to ours.

The review will begin in Section 3.3 by summarising some aspects of Masten and Peck (2004), then Section 3.4 will be on psychological issues, and Section 3.5 on best practice.

3.1   Scepticism about driver training

Our perception is that there is a widespread view that any form of advertising, education, or training will not greatly improve driver behaviour.

Ker et al. (2003) reviewed remedial driver education. In their Synopsis, they said: "The review of trials found strong evidence that no type of driver education for licensed drivers leads to a reduction in traffic crashes or injuries". Ker et al.'s review could have been used as a starting point in Section 3.3, in place of Masten and Peck (2004).

The following are the conclusions of a review by the same group of authors of school-based driver education: "The results show that driver education leads to early licensing. They provide no evidence that driver education reduces road crash involvement, and suggest that it may lead to a modest but potentially important increase in the proportion of teenagers involved in traffic crashes" (Roberts, Kwan and the Cochrane Injuries Group Driver Education Reviewers, 2001/2005).

We share this scepticism, but feel that it is overstated and should not be the sole guide to decisions about future action. It is possible to accept that the average effect of many past efforts has been close to zero, and still believe that something else, not yet rigorously evaluated, will be found to be effective in the future. And the DIP and many other driver training and education measures are very cheap: the average effect of past measures may indeed be close to zero, and yet the evidence may still be compatible with there being a small effect that is very worthwhile because of the cheapness of the intervention.

It might be added that following the introduction of the Schools Programme of the (U.K.) Driving Standards Agency, Roberts and colleagues wrote an article in The Lancet urging that this programme be stopped (Cochrane Injuries Group Driver Education Reviewers, 2001). Thus it seems quite likely that policies concerning road safety education and training will be contested, and that some parts of the community will urge that they be based upon research of high methodological quality. This topic of quality of evidence will now be discussed further.

3.2 What form of evidence might we expect about driver training interventions?

At this point, it is necessary to say something about research methodology. There has been a trend in recent years to promote randomised experimentation as being the only route to good evidence, because of the biases that can easily arise if any other method of assigning experimental units to treatment or control groups is used. This has been most pronounced in medicine, but has also influenced social welfare, criminology, and education, and has begun to have an impact in traffic safety. Roberts and colleagues, whose publications on driver training were referred to above, worked within the Cochrane Collaboration, which is part of this trend (see http://www.cochrane.org). Masten and Peck's paper, to be discussed in Section 3.3 below, shows the influence also. In selecting studies for review, they laid stress on methodological quality, saying (p. 405) that they required that the studies use "a classical experimental design employing random assignment or a design that reasonably approximated group equivalency". (In passing, we express the opinion that some reviewers would not have included studies that "reasonably approximated group equivalency", but would have insisted on randomised experiments.) Fuchs (1980), which is one of the studies included by Masten and Peck, also emphasised the importance of high quality methodology in evaluating driver improvement programs: "use of a randomized control group gives this evaluation reliability and persuasiveness that cannot be obtained by other means" (p. 107) and "Scientifically acceptable evaluations are absolutely necessary in order to make decisions to improve and enhance the effectiveness of education programs.... Extensive public spending on driver improvement programs makes it essential to document their benefits and evaluate their impact. The only totally valid means of assessing the impact of the programs is to provide for a randomized control group as an inherent part of each project" (p. 114).

The field of driver training and remediation, in its concern with quality of research methodology, has been ahead of either vehicle or traffic engineering. This is presumably because workers in the former field often come from a background either of public health or psychology, in both of which randomised experimentation is familiar. Thus Peck (1976) wrote, "Only by following some fundamental research design principles and avoiding the mistakes of many prior driver improvement studies can program development evolve in a coherent fashion and allow us to say with assurance that a given program does or does not reduce accidents, by how much and under what conditions", and he went on to offer five recommendations. The first of these was random assignment to treatment and control groups, and the second was having an extremely large sample size. For discussion of randomised experimentation and related issues, see Hutchinson and Meier (2004).

Thus, the type of evidence we desire is a randomised experiment, comparing the subsequent crash records of thousands of participants, very similar to DIP participants, randomly assigned to a programme very similar to the DIP or to no treatment. It seems very unlikely that such evidence exists. But there is research of some relevance, and this will be discussed below.

The claim in the previous paragraph that thousands of participants would be needed for the research is based on calculations like the following. Suppose there were 1000 participants in a group, and these had a crash rate of .1 per year. In a follow-up period of one year, they would have 100 crashes, give or take random fluctuation of about 10. If there were another 1000 participants in a group whose crash rate was 10 per cent lower, i.e., .09 per year, these would be expected to have 90 crashes, give or take 10. It is easily seen that the expected difference is only about the same size as the random fluctuations. It would be much easier to detect a difference if the program reduced crash rate by, say, 30 per cent, but that seems much too optimistic. It would be much more difficult to detect a difference if only fatal or serious injury crashes were of interest, as these are only a small proportion of the total. (Some people may say that it is the fatal and serious crashes that are of chief concern, and that the total number of crashes is not a good substitute, as one of the aims of

interventions such as the DIP is to reduce driving speed, which will have a greater effect on the more serious crashes than on the less serious.)

It seems likely, then, that evidence will come from studies of lower methodological quality (some form of observational study rather than a true experiment), and/or will utilise some outcome measure other than crashes (perhaps some scale of driving attitude), and/or will have been conducted in some much bigger country or consortium of countries than Australia. If it is thought practicable to consider an experiment involving all offenders eligible to participate in the DIP and lasting several years, it is possible to be more optimistic, and this will be taken up briefly in Section 5.

3.3   A recent review: Masten and Peck (2004)

Having said earlier that there has been a lot of research into driver improvement, and that we have needed to be very selective in our reading, we should concede that other researchers might have selected for discussion quite different ones from those in this section and below. To us, the recent review by Masten and Peck (2004) is a good place to start.

- The data referred to 35 studies considered by Masten and Peck to be methodologically sound. They included many different types of intervention, including licence suspension and the distribution of educational or informational material.

- Overall (that is, averaged over the various interventions), there was a 6 per cent decrease in crash rates for treated drivers.

- Some interventions were more effective than others. For licence suspension, there was a 17 per cent decrease in crash rates. (At least part of the effect is likely to be due to reduction in distance driven.) For provision of educational or information material, there was a 1 per cent increase.

- It might be reasonable to describe the interventions as varying in intrusiveness, and to conclude that the more intrusive ones (such as licence suspension) were the most effective, those of intermediate intrusiveness (such as group or individual meeting) were of lower effectiveness, and those of least intrusiveness (such as educational or informational material) were least effective.

It seems likely that the interventions described as group or individual meetings were more intrusive than the South Australian DIP is. The (U.S.) National Safety Council's defensive driving course is eight hours, for example. That being so, it might reasonably be suggested on the evidence of this review that the likely impact of the DIP in Adelaide is between the 5 per cent improvement that Masten and Peck report for group meetings and the 1 per cent worsening that they report for educational or informational material. Around 2 per cent, anyway, not around 20 per cent or 50 per cent. Senserrick and Haworth (2005, Section 2.4) express the opinion that "One day or half-day programs... are unlikely to be associated with crash reductions".

The effects of the interventions are small. Masten and Peck tackle the issue of whether they are so small as to be not worthwhile. They say (p. 415) that extensive investigations over the past 30 years by the California Department of Motor Vehicles have shown that that state's measures are justified by benefits outweighing costs (Peck was formerly chief of the Research and Development Branch of the California Department of Motor Vehicles). Without going into this deeply, we may also reason as follows. On average, a teenage driver in South Australia is associated with some thousands of dollars of road crash costs per year. A reduction of only a few per cent that lasted for a few years would thus be worth some hundreds of dollars. Since DIP involves only modest expenditures per participant, even quite a small effectiveness could justify it.

It seems unlikely that evidence about violations of traffic laws would be a convincing substitute for evidence about crashes. There have been repeated suggestions in the literature that effects of interventions on violations tend to be greater than effects on crashes. The difference seemed to be small in the review of Masten and Peck, though the earlier review by Struckman-Johnson, Lund, Williams and Osborne (1989) emphasised it more.

A study in Arizona by McKnight and Tippetts (1995) was not cited by Masten and Peck, perhaps because there was no zero-treatment control group. In the study of McKnight and Tippetts, traffic offenders were randomly assigned to one of two types of driver improvement course. The conventional, established, one was described as a traffic survival school, and the experimental one was termed a traffic violator school. Offenders who attended the traffic violator school subsequently had 20 per cent fewer crashes than the others. The effect on violations was smaller than the effect on crashes in this study.

3.4   Some psychological considerations

Senserrick and Haworth (2005, Section 3.7.7) listed several different forms of skill relevant to safe driving: basic vehicle handling skills; perceptual processing; cognitive processing; risk assessment and reaction; decision-making; and attitudinal and motivational orientations. Discussion of most of these is beyond the scope of the present report. However, certain ideas, mostly of a more specific nature, seem worth mentioning.

3.4.1   Attitudes

Sarkar and Andreas (2004) reported on the attitudes of two groups of teenagers in the U.S.A., one being a group of mostly 15 year olds, mostly without any form of driving licence, and one being a group of mostly 16 and 17 year old traffic violators (mostly caught speeding). Attitudes towards different forms of risky driving were reported on 5-point scales. The standard deviations for each were roughly the same (approximately 1), and so it seems valid to compare differences in the means across different attitudes. The overall picture is one of similarity of the groups. To some extent, speeding is an exception: the traffic violators view speeding less seriously. Table 3.1 shows the differences (see Sarkar and Andreas, 2004, Table 1); the ratings were of perceived dangerousness of different behaviours, and a positive difference in Table 3.1 means that the students tended to view the behaviour as more dangerous. Results for males and females separately are quite similar (see Sarkar and Andreas, 2004, Table 3).

Table 3.1
Ratings of risky driving behaviours: Mean differences between two groups
(from Sarkar and Andreas, 2004)

Behaviour	Mean for student drivers minus mean for traffic violators
Speeding	0.4
Drink driving	0.1
Sleepy driving	0.1
Distracted driving	0.1
Slow driving	-0.1
Angry driving	0.1

A review by Donelson and Mayhew (1987) had the following chapters:

Driver improvement and traffic safety.

Warning and advisory letters.

Individual hearings.

Group programs.

Licensing actions: Suspension, revocation, and probation.

Nonpunitive approaches to driver improvement: Rewards, incentives, and reinforcers.

Driver improvement as a "systems problem".

Conclusions and recommendations.

The fourth of these, dealing with group programs, is the most relevant to the DIP. The summary of that chapter noted that "Group meetings that emphasise attitude change have been shown to have positive effects on subsequent violations and post treatment accidents". Early parts of the chapter dealt with driver re-education courses designed to improve knowledge and skills, and two important points were as follows.

- As to the (U.S.) National Safety Council's defensive driving course, this seems to reduce subsequent violations, but not accidents.

- Other such courses usually failed to improve driver performance.

Turning to attitude-change and emotional/motivational approaches, the chapter summarised by saying that they "produced mixed results. Generally, these treatments have improved knowledge and decreased the frequency of traffic violations. They appear to have limited effectiveness in reducing traffic accidents."

Thus, there is some indication that courses that address attitude and attempt to alter motivation are more effective in changing behaviour than courses that attempt to develop knowledge. Comments by Ulleberg and Rundmo (2003) are consistent with this. In discussing the results of their study of personality, attitudes, and risky driving, they say (p. 438) that some of the relevant drivers are "very resistant to change in both attitudes and behaviour", and thus "An alternative to the traditional authority-based strategy is to let young drivers themselves find out the need for attitudinal and behavioural change". Ulleberg and Rundmo noted that such a strategy has been used successfully in other fields. By this criterion, the DIP appears appropriate. It is not a course of instruction.

In the context of the U.K. National Driver improvement scheme, Burgess and Webley (1999) gave some attention to the idea that it may be better to attempt to change behaviour, with attitudes following, rather than vice versa, and they argue for the importance of maintaining contact with clients who have attended a driver improvement course and reminding them of the important elements of the course. Dorn (c. 2003) is another author who is sceptical about changing attitudes, suggesting that if we want to change attitudes, we should be changing behaviour first, and attitude change is likely to follow.

3.4.2 Attitudes to speed

Could it be that changing traffic violators' attitudes specifically to speed would have the greatest safety benefit? The finding of Sarkar and Andreas (2004) is certainly compatible with that. It could be objected that the finding is instead some sort of artificial consequence of the offence of many of the traffic violators being speeding: perhaps these drivers regard speeding as less dangerous and tend to speed themselves, without this being dangerous. But we regard this objection as implausible.

If this idea of changing attitudes to speed were pursued, it would be possible to construct a driver improvement course solely around speed: practical experience in braking a car from 65 km/h and from 60 km/h, facts about speed and accidents, psychology of speeding,

lifestyle changes to avoid the need to speed, and so on. However, this would seem to be a course more closely resembling the instructional type, somewhat different from the present DIP philosophy of having young drivers confront crash consequences and their own behaviours. Lancashire County Council's speed awareness course (LCC, 2005) is of this type. Also in the UK, DriveTech SAS operates Speed Awareness Schemes for Thames Valley and Northumbria police: "The training looks at what driver behaviour made the client exceed the speed limit, what benefits they perceived in doing so and the dangers associated with doing it. The training goals are to motivate drivers to look at speed limits, the dangers of speeding and above all, to encourage drivers to use speed safely within maximum limits at all times" (DriveTech SAS, 2005).

3.4.3 Self-monitoring

Bailey (2002) argues for making self-monitoring central in improving young drivers. This paper is notable for being more detailed than much of the psychological literature. Bailey describes self-monitoring as the learner paying attention to the effectiveness of learning methods and strategies, responding to this feedback, and self-regulating, self-instructing, and self-evaluating during learning. One particular aspect is avoiding unrealistic optimism about the learner's own driving abilities. Bailey was able to cite support in new programs for novice drivers in Finland, Denmark, Sweden, New South Wales, the Australian Capital Territory, the U.S.A., and the Netherlands. Several of these involved group discussions as an aid to self-monitoring.

3.4.4 Perceived control

Horswill and McKenna (1999) report that, in an experiment using video simulation, subjects who were told to imagine they were driving chose faster speeds than those who were told to imagine they were passengers. It may be that this was a result of an illusion of control. Horswill and McKenna (p. 388) suggest that if people realise that they are likely to be as fallible as everyone else, they might take fewer risks, and that drivers' optimism bias might be reduced by persuading them to imagine that they are to blame for a serious accident. It seems to us that it is not plausible that someone could continue imagining that on a long term basis. However, it might be speculated that persuasion that one is, in part, at the mercy of the many poor drivers on the road might also reduce the illusion of control, and be more sustainable long term.

3.4.5 Development: Social and biological

According to Arnett (2002), crash rates among 16-17 year olds are much higher than among 18-19 year olds, and one of the contributing factors is that those in the younger group are mostly living at home and attending school, whereas those in the older group have mostly moved out, left school, and are engaged in some combination of tertiary study and work. It would be interesting to examine how closely these assertions are true in South Australia. We do not find everything that Arnett says plausible here, and in analysing data there would undoubtedly be difficulties distinguishing the effect of lifestyle changes from that of increasing driving experience, but his point that ages between 16 to 21 are often too crudely grouped in crash statistics is an intriguing one that could be worth following up. Census and social survey data exist; the stumbling block might be data on distance driven at different ages.

Steinberg (2004) argues that an important factor in adolescent risk taking is that there is a gap in time between a development of a greater need for novelty and stimulation (this occurs early in adolescence), and maturation of the ability to regulate one's own behaviour (this occurs rather later). Steinberg's view is that "heightened risk taking during this period is likely to be normative, biologically driven, and inevitable". He recommends that, "rather than attempting to change the way adolescents evaluate risky activities, ... a more profitable strategy might focus on limiting opportunities for immature judgment to have harmful consequences".

3.4.6   Therapeutic interventions

Some authors have proposed programs akin to psychological therapy. Section 3 of Donelson and Mayhew (1987) reviews the use of individual hearings in driver improvement, and one form that such hearings take is a clinical-diagnostic interview. Here in South Australia, a report from PPK and Siromath (1986, p. 49) gave some attention to the possibility of establishing a driver counselling group consisting of a number of "highly qualified" counsellors within the Road Safety Division (of the Department of Transport). The compulsory interviews envisaged admittedly seem not to have been intended as therapeutic, but nevertheless this demonstrates that one-to-one meetings are thought by some to be within the realm of practicability.

With some degree of plausibility, it could be said that the chief problem of the class of offenders that we are referring to --- perhaps, indeed, shared with non-offenders of the same age --- is psychological, and the remedy needs to be psychological. There is some plausibility, too, to likely success of psychological treatment. What is different from the situation a generation or so ago is the list of successes that techniques under the label of cognitive behavioural therapy (CBT) have had.

CBT is easy to mock as being mere common sense or just looking on the bright side of life, but it has had enough successes to be taken seriously. To give some idea of what could be done, we might refer to an article by Deffenbacher et al. (2002). The drivers were rather different from the participants in the DIP: they were psychology students who scored high on the Driving Anger Scale, who indicated a personal problem with driving anger, and who desired counselling for that. Two variant therapies were compared, that each involved eight weekly sessions of one hour each, given to small groups of about eight drivers. Results were quite encouraging, though the outcomes were measures like self-reports of risky driving, rather than actual number of crashes.

Galovski and Blanchard (2002) reported a trial of a form of CBT based upon the anger management literature. Most of the drivers were referred to the program by the courts, and a few were self-referred. They were treated in small groups (2 to 5) for four sessions of 90 minutes each. (That is, approximately 1.7 hours of psychologist's time per driver.) The treatment included progressive muscle relaxation strategies, coping skills, education about the impact of aggressive driving, and cognitive strategies. Results were quite encouraging, in that the group receiving treatment improved more than the control group. Note, however, that the sample size was small (28 drivers), and the outcome measures were drivers' own reports of behaviours and feelings. Galovski and Blanchard express the opinion that in most cases, the drivers' problem was their lack of insight. This has implications for the nature of treatment.

The title of Sharkin (2004) refers to road rage. This term is used quite broadly, and is not limited to intentional violence, but includes aggressive driving and anger while driving. Sharkin's review included both of the papers mentioned above (Deffenbacher et al., 2002; Galovski and Blanchard, 2002). Interventions discussed are stress management, time management (organising one's life so that fast driving is unnecessary), cognitive behavioural treatments, and modification of beliefs (e.g., concerning other drivers) that lead to anger.

Mention should also be made of the Prosocial Driver Training Program (Ross and Antonowicz, 2004). There are seven modules: problem solving, social skills, negotiation skills, alternative thinking, emotional management, values enhancement, and critical reasoning. Delivery by trained members of the general public, rather than by psychologists, is envisaged. The genesis of the programme was in the treatment of antisocial adolescents and prisoners. We are unsure how suitable it would be for drivers similar to present DIP participants: we consider these to be very similar to other teenagers (see Section 4 below), and not broadly antisocial or near criminal.

3.5   Best practice

Ideally, a best practice review would compare the DIP with exemplar programs. So, what programs elsewhere are comparable with the DIP and are the most effective? Drummond (1996) was faced with that question, found nothing, and took another approach. We also have found nothing in that narrow sense. Drummond consequently adopted the approach of commenting on DIP and best practice under the following headings: voluntary compliance; targetting; facilitation, not instruction; peer education; integration, not independence; innovation; additional delivery mechanisms; suite of treatment options; conservatism; empirical foundation. The discussion below will have some overlap with Drummond's comments, but will not repeat them.

3.5.1   Conditions for behaviour change

For someone to change behaviour, there are often said to be three necessary and sufficient conditions (see, for example, HCU, 2004).

A strong intention.

No barriers making the behaviour impossible.

The person has the necessary skills.

The third of these is not of much relevance to DIP. Drivers do not usually have deficits in "skill", as that word is normally meant. And participants in DIP were mostly caught speeding, and it takes no more skill to drive at 60 km/h than it does at 75 km/h. The first two, however, are very relevant: is there an intention to drive safely, and can the obstacles to implementing this be overcome?

Possible strategies for meeting the first condition (HCU, 2004) include raising awareness about the need for change by making the risk seem serious and personally relevant, and emphasising the likely positive results of adopting the recommended action and downplaying negative consequences. The DIP is certainly consistent with this: it emphasises the consequences of crashing, in terms of monetary loss and personal consequences that may affect the individual psychologically, exploring these issues with reference to the participants' own crash experiences. DIP also attempts to reinforce young drivers' vulnerability to crash involvement by emphasising that even if you think you are a good driver, "it can happen to you". Further, in the segment on speeding, participants are encouraged to talk about personal situations in which either another driver has made them feel unsafe while speeding, or they themselves have made other passengers feel unsafe.

The second condition is defined broadly: the barriers may be tangible or psychological, imposed by society or arising within the person. Such a definition reduces its usefulness, but nevertheless, some examples in HCU (2004) are of relevance to DIP. The drink driving section of DIP is fairly comprehensive and discusses strategies to avoid drinking and driving. While these concepts are introduced with the use of a short video, they are also discussed in reference to participants' own real life experiences in such situations. As to speeding, DIP explores reasons why young drivers might speed and the social pressures, particularly from peers, that encourage speeding behaviour. There is some discussion as to what might be said or actions that could be taken in a situation when travelling with someone else who is speeding, but little explicit discussion of what strategies or changes to lifestyle could be adopted to avoid speeding.

3.5.2   Group discussion

It has been said in Section 2.4 that the strategy for the DIP is not to lecture young drivers but to encourage them to voluntarily change their attitudes or behaviours. To add to the description in Section 2.4, the following extracts from a document for facilitators

("Introduction, Aims and Program Delivery") have been selected to demonstrate the nature of the DIP.

> "It is not the role of the facilitator to describe right from wrong, or appropriate from inappropriate.... Likewise, issues relating directly to road safety initiatives and programs should be treated in a neutral manner.... Remember, the aim of the program is to encourage young drivers to confront the potential reality and consequences of crash and to have them question their own risk taking and sense of invincibility."

Three possible dimensions on which driver improvement programs might be classified are as follows: number of participants; nature of interaction; and length. Our view as to where the DIP falls is as follows.

- On a dimension from individuals to large groups, the DIP is somewhere in the middle.

- On a dimension from therapeutic to instructional, the DIP is somewhere in the middle.

- On a dimension from short to long, the DIP is short.

If it were desired to make DIP a stronger intervention without changing its general approach, it would be possible to reduce the size of the groups, make the program more therapeutic, and make it longer.

According to Gregersen, Brehmer and Morén (1996), the use of group discussions for promoting behavioural change can be traced to experiments on changing eating habits, conducted under Kurt Lewin in the 1940's, see Lewin (1958). Group discussion and decision was found to be much more effective than lecturing. However, this conclusion is controversial: according to Pelz (1958), it is not group discussion that is important, but rather it is the process of making a decision and the degree to which group consensus is obtained and perceived.

Four experimental groups receiving different fleet driver improvement measures with a control group were compared by Gregersen et al. (1996). One of the experimental treatments consisted of group discussion meetings. Drivers receiving this treatment improved relative to the control group. Does this give support to the DIP and its use of group discussions? Only to a limited extent. The results of Pelz (1958) suggest that the details may matter greatly: some components of a treatment that is described as being group discussion may be effective, and others not. And the details of the population treated and the group discussion in the study of Gregersen et al. did differ quite substantially from the DIP. The population consisted of drivers employed by a Swedish telephone company, whose average age was 40. Naturally, the discussion meetings, of which there were three of about an hour each, were appropriate to this population, and differed in many details from the DIP.

We now turn to a report by Bartl, Baughan, Fougère et al. (2002) that is an articulate discussion of the style of training (facilitation, coaching) that inspired DIP.

3.5.3   Bartl et al. (2002)

A report by Bartl et al. (2002), that to us seems very expert and sensible, has a number of comments relevant to group discussion. They were referring to voluntary (post-licence) driver instruction of typically a day in length, with an on-track or on-road component. That is different from the DIP, of course, but nevertheless what they say is pertinent in several respects. We would like to call attention to their remarks about adult learning, classroom methods, the facilitator (they also use the words trainer or coach to mean the same thing), and training of the facilitator.

Section 4 notes some characteristics of adult learning.

- These include "The educator functions as a facilitator rather than a didactic instructor" and "The participants' experiences are used in the learning process". This is plainly the same philosophy as is behind the DIP.

- It also emphasises the importance of motivation: "For learning to take place, the trainee must be convinced that there is some direct benefit gained by acquiring the knowledge, skills and awareness offered in the training. Sending people on courses – to learn skills that somebody else thinks they need to learn – is not an effective basis for learning, unless they are convinced beforehand".

- Section 4 concludes by expressing scepticism about whether a 1-2 day course can bring about significant behavioural change via beliefs and values. And later (p. 121), Bartl et al. say "Trainers should not be expected to be able to change attitudes and behaviour during such a short timeframe."

At several points there is discussion on classroom methods.

- In Section 6 (pp. 82-83), Bartl et al. deplore the fact that these are typically theory- and information-centred, rather than addressing the personal needs and weaknesses of the participant. But they concede this is difficult for the facilitator: "An open coaching method, based heavily on the experiences of participants and involving discussion and feedback, requires coaching skills, an understanding of group dynamics (if groups are involved) and perhaps a knowledge of traffic psychology and driver types – to name but a few. In short, coaching is more demanding than delivering a fixed programme".

- They add (p. 85) that "Of the many courses visited during the Advanced project, only 3 showed signs of real participant-centred techniques. The alternative to such techniques (instruction of various kinds) are not only limited in effect (if used in isolation) but can also be perceived as authoritarian, preaching and patronising."

- In a later section (p. 121), Bartl et al. say that the training should "be designed to improve the participants' awareness of both their typical driving habits (and situations) and typical living habits which can affect their ability to drive safely. Understanding oneself is a crucial factor in anticipating potential problems when driving. In this regard, the participants' own driving experiences should be discussed and referred to constantly".

- They go on to say (p. 126), "The trainer should be seen as a facilitator who helps participants understand and recognise, on the basis of appropriate assessment criteria, their strengths and weaknesses relating to driving and to their relationship with society in general. It is important to begin and continue the training in this way, so that participants begin to evaluate themselves from the outset, without having to be consistently told by the trainer where their faults lie…. In short, advanced training should shift from classic teacher-based methods (e.g., lecturing), where students are only a passive recorder of information, to a participant- or learner-centred approach where participants actively process and construct information for themselves".

At pp. 84-88, there are comments about what is required of the facilitator: "The ideal driver trainer requires pedagogical, technical and driving skills – skills that very few people have…. In short, despite the immense potential benefits and satisfaction of providing training in such a worthy area, the blend of skills required and general working conditions are extremely demanding…. That this report pinpoints the lack of coaching / moderation skills (and insight into traffic behaviour) does not mean to suggest that trainers should be replaced by trained psychologists with PhDs. In fact, traffic psychologists themselves still have a difficult time mastering the techniques needed to stimulate discussion, question, listen and summarise." Bartl et al. are sceptical whether the typical trainer, with a background in

competitive driving, the police, engineering, or novice driving instruction, has the skills required for facilitation or coaching.

Bartl et al. express the view (pp. 85-86) that the skills required for facilitation can be learned. At pp. 128-131 they sketch what the initial training should cover. There are 25 short paragraphs, categorised under the headings of general pedagogical principles, differentiating between participants, assessing course results, and teaching methods. (The style of these paragraphs suggest they may originally have been generated to satisfy some bureaucratic imperative, but perhaps that is not a criticism.) At pp. 212-217 there is an introduction to coaching. This has nine sections: what is coaching?; the application of coaching techniques in advanced driver / rider training; some basic principles of coaching; questioning; sequence of questioning; feedback and assessment; the qualities of an ideal coach; challenges; conclusion.

We feel there is a very wide range of possible reactions that a reasonable person might have to the above.

- We found the report persuasive. The DIP is, or at least aspires to be, very much in line with what Bartl et al. say (see Section 3.5.2 above, and also 3.5.7 and 3.5.8). Some people may say end of story, the DIP is doing all it could possibly be expected to do in a short classroom session.

- At the other extreme, others may question where is the evidence for the assertions of Bartl et al. Or they may concede that in an ideal world, things might work in that way, but in the real world the facilitator's task is a very difficult one, and people capable of doing it are likely to be busy charging a premium for their services facilitating something else. They might add that a much more realistic objective is to get over one simple message, such as "Reduce your speed by 5 km/h".

The key question is whether Bartl et al. are realistic in their advocacy of coaching (facilitation, training) to improve the safety of driving. We have just said that we feel reasonable people may disagree in their answer to this. As some sort of middle position, we might suggest that this is unrealistic if the intention is to do it cheaply. But suppose a facilitator were paid (say) $300 per session of DIP? He or she might then invest the time, effort and money necessary to get himself or herself trained to the high standards Bartl et al. envisage.

3.5.4   Boundaries and answers

A best practice review needs boundaries: what is up for discussion, and what is taken as fixed? A best practice review should ideally provide answers: what is best? Unfortunately, like Drummond (1996), we feel the state of knowledge is this field has not advanced so far that definite answers can be given. Nevertheless, some options can be offered. In Sections 3.5.4 to 3.5.7, these will be discussed in four groups:

- Participants and participating.

- Arrangements for the DIP.

- Aims, philosophy, and approach.

- Facilitators and facilitation.

3.5.5   Participants and participating

Participants. DIP is aimed at young novice driving offenders. As far as we know, consideration is not being given to expanding it to young novice drivers who do not commit an offence, or to older drivers. Our results (Section 4) will show that DIP participants as a group are similar to teenagers who did not commit a driving offence. If a change of focus of

the DIP to concentrate on all disqualified drivers (including the more serious or repeat offenders) were felt to be an option, quite substantial changes to the content would probably be necessary, and the role of the facilitator would become more demanding and require specialised training.

Compulsory? There is a degree of coercion involved with the DIP, in that an expiation fee must be paid by those who do not attend. We think this is outside the scope of our discussion: there is some support within the psychological literature for programs that are voluntary rather than compulsory, but presumably very few would attend DIP if it were entirely voluntary.

Engagement of the participants. It is emphasised to participants that they must be active, and they wear name tags so that the facilitator can single them out if they remain too quiet. The presumption is that if they are passive, they will not get much benefit from the program. There is only a limited degree of control over degree of engagement, except via the number of participants, the style of the meeting, and who the facilitator is. If it were thought desirable to involve the participants more fully, a reduction in group size would be a possible method.

3.5.6   Arrangements for the DIP

Fine-tuning of the DIP happens often. In some respects, the comments below may already be out of date at early 2006. Our understanding is that the teaching materials are being updated and the DIP now has a greater emphasis on speeding.

When? Attendance at the DIP takes place some months after the offence. That delay might be considered undesirable, on general grounds of trying to keep the consequences of an act close in time to the act itself. Part of it would be difficult to eliminate, but some reduction in the permitted time within which attendance at DIP is required would be feasible.

Length. The length of the DIP is one session of about 90 minutes. This certainly could be changed in some future revision of the DIP. It is common for other driver offender programs to last for several sessions. Our view is that the evidence is inconclusive as to whether a more effective program would result.

Syllabus. The DIP covers several different topics. This is something else that could be changed. It could, for example, concentrate on speeding, especially as most participants committed a speeding offence. Again, our view is that the evidence is inconclusive as to whether a more effective program would result. We do feel, though, that there is a case for concentration on speeding, along the lines of the Lancashire course mentioned above.

Size of group. Our understanding is that the DIP now operates with groups of, typically, 8 participants. Our view is that this is still towards the upper end of what is appropriate within the general style of the DIP, and that an increased group size would be undesirable. Reduction of group size, in order to permit more active participation by more of those attending, is an option that should be considered.

Classroom environment. This is probably not a matter for discussion while DIP remains roughly like it is --- but if some radical change such as individual therapeutic counselling were considered, the environment of delivering the program would become an issue.

Details of delivery. We do not claim to have considered every detail, but three things come to mind. (i) The video now looks dated. (ii) Statistics, given on a poster, are dated also. (iii) An arrangement where two facilitators handle a group of perhaps 12 participants in one room (this only occurs at two of the venues) is considered inferior.

3.5.7 Aims, philosophy, and approach

Aims. According to the Facilitator Notes, the aims of the DIP are "To reduce the incidence of crash amongst novice drivers by confronting them with the potential consequences of the crash" and "To break down their sense of invincibility". Thus the aims do not include a generalised improvement in the participants' attitudes to driving, an improvement in their driving behaviour, a reduction in the driving offences they commit, or a reduction in the severity of injury in the crashes. If, despite what is said in the Facilitator Notes, these are aims of the DIP, it might be useful to have them documented. After all, if a better personality on the road, or better driving behaviour, were found to be associated with having participated in the DIP, it would not at present be clear that this would constitute achieving the aims. (We should add that, in the present state of knowledge, it is not clear whether they would be realistic aims.)

Philosophy. With the aims of the DIP being as stated, the DIP's approach is straightforward: it certainly does confront offenders with what happens. But if the aims go further and include changing attitudes and behaviours, we have not seen a clear statement of what the approach is or why, or exactly what is meant by facilitation. Plainly, though, there is considerable similarity with what Bartl et al. (2002) described, see Section 3.5.3 above. However, we should note that in much of the literature on facilitation (in the context of, for example, training), it is assumed that individuals are coming together voluntarily to achieve a common purpose and arrive at a decision. In contrast, participants in the DIP may be there primarily to avoid the expiation fee for non-attendance, may not be motivated to change their attitudes and behaviours, and there is no decision to be made.

Facilitation or teaching? We have no quarrel with the general approach and style of the DIP. However, we do not think that there is good evidence to force this style on such a program, if some other style were more natural. Consequently, if imparting information were the priority, that would be acceptable also. (We have in mind that the increase of risk associated with a *slight* increase in speed is surprisingly great, and that a program that concentrated on speeding might need to get this across.)

3.5.8 Facilitators and facilitation

Facilitators. According to the information available to us, some of the facilitators resemble authority figures rather more than is ideal for a program in the DIP's style. (There may at one time have been a vision --- in line with the aim of confronting participants with the potential consequences of a crash --- that many of the facilitators would be people who had been permanently disabled by a crash. Our understanding is that only a small minority of present facilitators fall into this class.)

Training of facilitators. Facilitators do receive a basic training session, their conduct while they are inexperienced is observed and supported with advice, and pairing of an inexperienced with an experienced facilitator is usual. The training does not extend to imposing rigid controls on what the facilitator does. We feel that this is consistent with the DIP's overall philosophy. However, more training for facilitators is another option that is open: certainly Bartl et al. (2002) feel that training is practicable. And there are textbooks and courses available on facilitation. (Selection would need to be careful, we feel: there are helpful books to be found, but others are somewhat eccentric.)

Nature of the facilitation. What is done by the facilitator, what interaction is there between the facilitator and the participants? To raise such questions rather presumes that there are characteristics of good program delivery that are common to other areas of attitude change or behaviour change, that there are well-established criteria in those areas for judging what is good delivery, and that transfer can be made to the DIP. Again, see Section 3.5.3 for what Bartl et al. (2002) said on this. The DIP is not fully standardised: different facilitators have different styles, and even one facilitator may run DIP differently on different occasions. This

is compatible with some expert recommendations, which emphasise the tailoring of facilitation to the background and needs of the participants.

3.5.9 Conclusion

What, then, do we consider to be "best practice" in driver improvement? As we said at the start of Section 3.5, we do not think that exemplar programs exist that convincingly establish best practice. Our view is as follows.

- No program is likely to have a large effect on crashes.

- A program of low effectiveness might nevertheless be worthwhile in cost-benefit terms.

- Several ideas have been proposed in recent years that offer some hope for better programs in the future.

4 Characteristics of DIP participants

This section is solely the work of L Wundersitz. The data were collected for inclusion in her PhD thesis.

4.1 Introduction

This section of the report examines the characteristics of young drivers attending the Driver Intervention Program (DIP), in relation to a comparison group of young South Australian drivers, university students. The DIP participants and university students were administered a survey based on a number of measures previously found to be associated with high-risk drivers. These measures included personality characteristics, hostility variables, driving related attitudes, and attitudes specific to road safety. Based on these measures, a profile of the DIP participants is developed relative to the students. This profile will assist in tailoring DIP to the specific motivational needs of young South Australian traffic offenders.

4.2 Methodology

4.2.1 Participants

Young drivers attending the Driver Intervention Program, subsequently referred to as 'offenders', were approached to participate in the study at DIP sessions held during a three-month period from 27 October 2003 to 28 January 2004. DIP participants were approached at all four venues operating in metropolitan Adelaide during this period: Hampstead, Noarlunga, Oaklands Park and Salisbury. Thus, the sample may be regarded as representative of all DIP participants in the metropolitan area.

The original sample consisted of 358 drivers who had been detected committing offences that violated the conditions of their Learner's Permit or Provisional Licence, resulting in licence disqualification[1]. To ensure all participants had some unsupervised driving experience, only data from participants who had held a current South Australian Provisional driver's licence was retained for analysis. Thus, data from 15 drivers were excluded from the study because they held a Learner's Permit (n=13) or were unlicensed (n=2) prior to detection for the traffic offence(s) and licence disqualification. A further seven drivers were excluded because they did not complete the majority of the questionnaire (n=5) or provided obviously untruthful responses to the questionnaire (n=2).

The final sample of offenders consisted of 336 drivers (273 males, 63 females) aged 16 to 25 years (M=18.5, SD=1.2). Approximately 46 per cent (n=154) of DIP participants were recruited from Hampstead, 20 per cent (n=69) from Noarlunga, 18 per cent (n=59) from Salisbury, and 16 per cent (n=54) from Oaklands Park.

The comparison group of university students consisted of 270 young drivers (78 males, 192 females) holding a current South Australian Provisional driver's licence, aged 17 to 21 years (M=18.1, SD=0.7). All were undergraduate psychology students, enrolled at the University of Adelaide. They participated in the study to receive course credit.

The university students represent a comparable group of young drivers on a Provisional Licence with varying levels of unsupervised driving experience. However, the student group cannot be considered to be representative of the general young driver population in South Australia. For example, one unavoidable difference is the level of education. Difference in

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1 A driver whose Learner's Permit or Provisional Licence is disqualified may subsequently appeal against the penalty of disqualification. However, even if the appeal is successful, they are still required to attend DIP. Thus, not all offenders received the penalty of licence disqualification.

sex composition might be expected as the general young driver population consists of a similar number of males and females but more females study psychology than males. However, sex differences do not present a problem as males and females can be examined separately.

4.2.2 Questionnaire

Participants completed a self-report questionnaire comprised of seven sections measuring demographic variables, personality traits, driving style, driving related attitudes, mild social deviance, road safety related attitudes, and alcohol use. This questionnaire was based on a questionnaire originally developed by Donovan and Marlatt (1982) and more recently adapted by Deery, Kowaldo, Westphal-Wedding and Fildes (1998). However, the length of the questionnaire was reduced due to time constraints. DIP participants were allocated approximately 10 to 15 minutes at the beginning of DIP sessions to complete the questionnaire.

In order to reduce the length of the questionnaire, reliability analysis was undertaken on preliminary data from the student sample to identify any items contributing to low internal consistency in each scale. Individual items were deleted if their omission increased Cronbach's alpha coefficient, a measure of internal consistency, for the scale. Thus, a total of 53 questions were omitted from the original 189-item questionnaire. A copy of the 136-item questionnaire is included as Appendix A. The number of items, and range of scores for scales in the condensed version of the questionnaire are presented in Table 4.1.

The first section of the questionnaire sought information on a number of general demographic and background variables including age, gender, driving experience (age when first obtained Learner's Permit and Provisional Licence) and method used to successfully obtain a driver's licence. The offenders also provided information on their level of education and occupation. Information in this section was obtained to determine if these factors differed between the offender and student groups and subsequent analyses required disaggregation by these factors (i.e. sex).

The second section of the questionnaire consisted of 72 true-false items measuring general personality traits. General assertiveness was assessed by five items taken from the Rathus Assertiveness Schedule (Rathus, 1973). Nine items from a depression scale (Costello and Comrey, 1967) were included. This depression scale was designed to measure a general tendency to experience a depressive mood, rather than measuring a clinical depressive state by symptom ratings. Six items adapted from the Eysenck Personality Inventory assessed emotional adjustment (Howarth, 1976). The ten-item subscale of Thrill and Adventure Seeking and seven items from the Disinhibition subscale were incorporated in the questionnaire from Zuckerman's Sensation Seeking Scale (Form V: Zuckerman, 1971) to measure sensation seeking, the need for excitement and stimulation. Additionally, five subscales of the Buss-Durkee Hostility Inventory (Buss and Durkee, 1957) were included to measure the specific way respondents express hostility and aggression: assaultiveness or physical violence against others (nine items), indirect hostility (five items), verbal hostility (nine items), irritability (eight items), and resentment (four items). Individual items from the personality scales were not in successive groups, but distributed randomly within this section.

The third section of the questionnaire contained a scale examining self-reported driving style. Thus, seven items from the Driver Expectancy Questionnaire developed by Deery and Love (1996) measured the decision-making aspects of driving, that is, the way one chooses to drive. Each item contained a statement referring to a risky driving behaviour. Participants were then asked how well each statement 'best described how you typically drive'. Responses were scored on a five-point scale ranging from 1 = 'not at all' to 5 = 'all the time'.

The fourth section incorporated 20 true-false items that measured a variety of driving related attitudes and behaviours. Ten items were taken from a driving aggression scale developed

by Parry (1968). The scale was selected to reflect 'spontaneous' aggressive behaviour in the driving situation. Five items were included to measure an attitude of competitive speed (Goldstein and Mosel, 1958). Three items assessed the extent of cautious driving when upset or angry, referred to as 'driving inhibition' by Donovan and Marlatt (1982). Finally, two items measured the extent to which driving reduced tension or increased levels of personal efficacy (Mayer and Treat, 1977; Pelz and Schuman, 1971). Items from the four scales were randomly scattered within the section.

The fifth section of the questionnaire consisted of eight items from the Social Motivation Questionnaire developed by West, Elander and French (1993) as a measure of mild social deviance. Mild social deviance is defined as the motivation to pursue self-interest at the expense of others but not to an extreme level of behaviour. Participants were asked: 'How likely is it that you would do each of these things if you were completely certain of getting away with it?' Responses were scored on a three point scale labelled 1 = 'not at all likely', 2 = 'quite likely' and 3 = 'very likely'.

The sixth section of the questionnaire incorporated items measuring specific driving attitudes. Two items from the Young Driver Attitude Scale (YDAS) (Malfetti, Rose, DeKorp, and Basch, 1989) were included as measures of 'attitude towards speeding' and 'concern about hurting others'. An item from Ulleberg and Rundmo's study (2002) measuring the 'risk of dying in a crash' was also included as were two items from the Driver Skill Inventory developed by Lajunen and Summala (1995). Adapted from Hatakka et al. (1992), the first item measured one aspect of driving skill, hazard perception. The second item measured a 'safe driving' motivational factor. Based on previous research (Wundersitz, Kloeden, McColl, Lindsay, and McLean, Unpublished), the final three items in this section were developed to measure attitudes towards drink driving, perceived 'safe' driving by friends, and the perceived likelihood of detection by police when committing a traffic offence.

In the final section of the questionnaire, offenders were asked to specify what type of traffic offence(s) resulted in their licence disqualification and whether they were involved in a crash when detected committing the offence(s). A measure identified as involving another high-risk behaviour (high alcohol use), was also included. Participants were asked how many standard alcoholic drinks they would consume on a typical drinking occasion.

In sections two to five of the questionnaire, the items within each scale were summed to produce an overall score for the measure. For all other sections the mean score for each item was used.

The questionnaire was pilot tested with a small sample of drivers (n=6) to ensure comprehensibility of the items.

Table 4.1 shows Cronbach's alpha coefficients for all scales used in the questionnaire. Alpha coefficients are only reported for scales with five items or more. The internal consistency of most scales was acceptable with alpha in the range of .48 to .86. Alpha coefficients tend to increase as a function of the number of items (Nunnally, 1978). The item number sensitivity of alpha coefficients may be responsible for the lower reliability of several scales with relatively few items. Exploratory factor analysis examined the internal structure of the scales. A one-factor solution was found for most scales, and for verbal hostility, three items were omitted to retain a single factor solution. Thus, the majority of scales had a reasonable degree of internal coherence.

Table 4.1

The number of items, range of scores and alpha coefficients for questionnaire measures

Measures	No. of items	Range of scores	Cronbach's alpha [a]
Personality			
Assertiveness	5	5-10	0.48
Depression	9	9-18	0.81
Emotional adjustment	6	6-12	0.65
Sensation seeking	17	17-34	0.73
Mild social deviance	8	8-24	0.75
Hostility and aggression			
Assaultiveness	9	9-18	0.70
Indirect hostility	5	5-10	0.56
Verbal hostility	6	6-12	0.51
Irritability	8	8-16	0.58
Resentment	4	4-8	-
Driving-related			
Aggression	10	10-20	0.76
Competitive speed	5	5-10	0.71
Inhibition	3	3-6	-
Tension reduction	2	2-4	-
Driving style	7	7-35	0.86
Attitudes			
Speeding	1	1-5	-
Drink driving	1	1-5	-
Risk of crash	1	1-5	-
Friends drive safely	1	1-5	-
Likelihood of being caught	1	1-5	-
Concern for hurting others	1	1-5	-
Driving skill	1	1-5	-
Safety motivation	1	1-5	-

[a] An index of the internal consistency of a measure.

4.2.3   Procedure

The researcher or group facilitator invited DIP participants to complete a written questionnaire at the beginning of the session. This procedure was adopted to avoid any effects on attitudes or beliefs generated by discussions during the DIP session. The questionnaire took approximately 10 to 15 minutes to complete. The response rate amongst DIP participants was 87 per cent. The remaining 13 per cent either refused to participate, or arrived too late to the session to participate in the questionnaire.

University students were invited to participate in the study at the beginning of lectures. Posters and intranet messages requesting student participation were also displayed. The questionnaire was available to students on the Internet. Students entered their data directly into a database maintained on a secure server by the Department of Psychology. The online questionnaire was completed in the participant's own time.

An information sheet and consent form were provided to all who indicated they were willing to participate. For students, an electronic copy also accompanied the questionnaire on the website. All participants were asked to sign a printed consent form before beginning the questionnaire. Instructions at the beginning of the questionnaire informed participants of the nature of the research and assured complete confidentiality.

4.2.4 Statistical analysis

Statistical analyses were conducted to quantify differences in personality traits and driving related attitudes and behaviours between the offender and student groups. Initially, the driver licensing characteristics of the offender and student groups were compared using chi-square analyses.

As a significant difference in the gender compositions of the offender and student groups was identified, it was deemed appropriate to account for sex by conducting two way ANOVAs (group x sex) for all personality, hostility, driving related and attitude measures. A two way ANOVA shows whether there are significant main effects of the independent variables (group and sex) and whether there are significant interaction effects between these variables. Cohen's d, a measure of effect size or the standardised difference between the two means, was calculated to assess the strength of differences between offenders and students amongst males and females separately. Cohen's d (Cohen, 1988) is defined as the difference between two means divided by the pooled standard deviation. Using the conventions suggested by Cohen (1988), an effect size of $d=0.2$ represents a small effect, $d=0.5$ a medium effect, and $d=0.8$ a large effect. In personality research, differences of 0.5 are regarded as substantial.

For all analyses, a level of $p<.05$ was considered to be statistically significant. It is important to consider that when using this level of statistical significance, one out of every 20 statistical tests performed would be expected to be significant by chance.

Due to the nature of pen and paper surveys, as opposed to the Internet survey, there were missing responses to individual items in the offender group data. The proportion of missing values was very low but rather than omitting an entire case for the sake of one or two missing items within a scale, offenders' missing data for personality characteristics and attitude variables were imputed using the LISREL program. Algorithms were used to impute values according to the profiles of scores from similar cases with full sets of observations. The use of imputation allowed the analysis of a complete data set.

4.3 Results

In the following section, the offenders and students are compared in respect of personality characteristics, attitudinal measures and alcohol use. Demographic and driver licensing details are also compared between the two groups to provide background information.

4.3.1 Demographic characteristics

The demographic characteristics of the student and offender groups are presented in Table 4.2. All respondents were required to hold a Provisional Licence and be aged 16 to 25 years. The offender group was slightly older than the student group and this difference was most evident amongst females. The offender group consisted of a greater proportion of males (81%) than the student group (29%). Offenders were less likely to be single than students. Socio-economic status differed by group. A greater percentage of offenders (30%) lived in low-income areas than students (16%), and conversely, more students (41%) lived in high-income areas than offenders (25%).

The method for estimating the crude measure of respondent's socio-economic status was accomplished by using the postcode of their main residence, in conjunction with the Adelaide Social Atlas, based on 2001 census information (Crettenden, 2002). The social atlas mapped the percentage of households with a weekly income of $1500 or more for each census collection district in metropolitan Adelaide. The postcode areas were derived from aggregations of 1996 census collection district boundaries. Although they were not identical to official Australia Post boundaries, they were similar and useful as a proxy. For the purposes of this study, 'high' socio-economic status was defined as those postcode areas in which 22 per cent or more of the households had a weekly income of $1500 or more,

'middle' was 14 to 21.9 per cent, and 'lower' was less than 14 per cent. A total of 79 participants' postcodes could not be coded because they were outside the Adelaide metropolitan area. This measure of socio-economic status is a fairly crude one, and further use of it is not pursued at present.

Table 4.2
Demographic characteristics of the offender and student groups

Demographic measure	Offender (N=336)	Student (N=270)
Mean age (years) (SD)	18.5 (1.2)	18.1 (0.7)
Male	18.4 (1.2)	18.3 (0.9)
Female	18.8 (1.3)	18.0 (0.5)
Sex (%)		
Male	81.3	28.9
Female	18.8	71.1
Marital status (%)		
Single	95.2	99.6
Defacto/married	4.8	0.4
Socio economic status of area of residence (%)		
Low income area	29.8	16.4
Middle income area	45.7	42.9
High income area	24.6	40.8

Table 4.3 shows the highest level of education completed and occupational status for the offenders. Just over 36 per cent of offenders had not completed high school and had no further education. Around 32 per cent had completed, or were in the process of completing, further education by means of a trade, technical school or university.

Respondent's occupational status was coded according to the nine major occupation groups defined by the Australian Bureau of Statistics Australian Standard Classification of Occupations (McLennan, 1997). About one third of offenders were employed as tradespersons (31%). A similar proportion (32%) of offenders were students, 29 per cent (n=30) being university students. Less than 4 per cent were unemployed. This rate was lower than the South Australian rate of 6.5% for the same period (Labour Force: January 2004, 2004).

Table 4.3
Education level and occupations for the offender group

Education level and occupation status	Percentage (N=336)
Education [a]	
Some high school	36.1
Year 12	31.6
Some trade/technical school	11.3
Certificate or diploma	9.9
Some university	10.1
University degree	0.9
Occupation [b]	
Managers and administrators	0.9
Professionals	0.3
Associate professionals	4.0
Tradespersons	30.6
Advanced clerical and service	0.9
Intermediate clerical, sales and service	8.6
Intermediate production and transport	5.2
Elementary clerical, sales and service	6.5
Labourers	5.6
Other	1.9
Student	31.8
Unemployed	3.7

[a] Information missing for one participant.
[b] Information missing for 12 participants.

The type of traffic offence(s) detected by police that led to licence disqualification and subsequent attendance at DIP for the offenders is shown in Table 4.4. These offences are based on respondents' self report, not official records. As many respondents reported several offences, the total percentage of drivers does not equal 100 per cent. The majority of respondents attending DIP reported getting caught by police (i.e. not a speed camera) for committing speeding offences (70%). Not displaying P-plates was also a common offence (27%). Drink driving was reported by only 5 per cent of respondents.

Furthermore, approximately 6 per cent (*n*=20) reported being involved in a crash when reported for the offence(s) leading to DIP attendance. Just over 79 per cent of offenders reported that they were detected for one offence prior to DIP, and of those reporting a single prior offence, 72 per cent reported it was a speeding offence.

Table 4.4
Number and percentage of offenders by type of self-reported traffic offences leading to licence disqualification and DIP attendance

Traffic offence	Number	Percentage
Speeding	236	70.2
Not displaying P-plates	89	26.5
Dangerous/reckless/careless driving	25	7.4
Drink driving	18	5.4
Fail to wear seat belt	16	4.8
Disobey traffic signs or signals	9	2.7
Fail to give way/stop	8	2.4
Fail to keep left	4	1.2
Following too closely	3	0.9
Overtaking without due care	1	0.3
Other	11	3.3
Unknown	16	4.8
Total	436	129.9

Note: 436 responses from 336 offenders.

4.3.2   Driver licensing factors

Factors associated with obtaining a Provisional driver's licence may distinguish young offenders from other young drivers. Driver licensing characteristics and driving experience are presented in Table 4.5.The South Australia Motor Vehicles Act permits people aged 16 years and over to obtain a Learner's Permit to drive after passing a theoretical driving test. The majority of offenders and students acquired a Learner's Permit at the youngest possible age of 16 years. Female offenders were more likely to obtain a Learner's Permit at an older age than female students. At the time of data collection, regardless of the time spent with a Learner's Permit, novice drivers could apply for a South Australian Provisional Licence at 16 years and 6 months of age (Section 75, Motor Vehicles Act, 1959). A greater proportion of male offenders held a Learner's Permit for less than 6 months compared to male students (83% vs. 60%).

To obtain a Provisional Licence in South Australia, drivers must either pass a vehicle on-road test (VORT) conducted by an authorised driving instructor or complete a competency based training (CBT) course commonly referred to as the 'log book option'. The latter requires the driver to reach a level of competency progressively in a series of defined tasks that are 'signed off' by a driving instructor when completed. A greater proportion of offenders and students obtained a Provisional Licence using the competency based training method; this proportion was higher for females. There were no group differences for method of obtaining a Provisional Licence.

In regard to the age a Provisional Licence was obtained, there was no difference by group for either males or females. The majority of both offenders and students had at least 12 months of unsupervised driving experience on a Provisional Licence at the time they were surveyed. Driving experience on a Provisional Licence was only found to differ for females; 88 per cent of female offenders were on their Provisional Licence for 12 months or more compared to 60 per cent of female students.

Table 4.5

Driver licensing characteristics of the offender and student groups for males and females

Driver licence measures	Males				Females			
	Offender (N=273)	Student (N=78)	χ^2	df	Offender (N=63)	Student (N=192)	χ^2	df
Age obtained Learner's Permit [a] (%)								
16 years	81.3	76.9	1.2	3	71.4	79.2	16.4**	3
17 years	10.6	14.1			12.7	17.2		
18 years	5.5	5.1			9.5	3.6		
19 years or more	2.6	3.8			6.3	0.0		
Months with Learner's Permit [b] (%)								
6 months or less	83.1	67.9	8.6**	1	77.6	76.4	<0.1	1
7 months or more	16.9	32.1			22.4	23.6		
Method obtained Provisional Licence [c] (%)								
Competency based training	64.6	59.0	0.8	1	73.8	71.9	0.1	1
Vehicle on road test	35.4	41.0			26.2	28.1		
Age obtained Provisional Licence [a] (%)								
16.5 years	54.8	37.2	7.5	3	42.9	49.5	5.0	3
17 years	31.6	43.6			34.9	34.4		
18 years	6.6	9.0			14.3	14.1		
19 years or more	7.0	10.3			7.9	2.1		
Driving experience on Provisional Licence [b] (%)								
Less than 12 months	28.5	36.5	1.0	1	12.1	40.0	15.6**	1
12 months or more	71.2	63.5			87.9	60.0		

[a] Information was unknown for 1 participant.
[b] Information was unknown for 17 participants.
[c] Information was unknown for 4 participants.
*p<.05, **p<.01

To summarise, the driver licensing characteristics of offenders and students were fairly similar. One of the distinguishing factors was that male offenders spent significantly less time on a Learner's Permit than did male students. Given that the female offender group was slightly older than the female student group, it was not surprising that female offenders reported more driving experience than female students.

4.3.3 Personality characteristics and attitudes

In order to develop a profile of the offenders, their mean scores on personality, hostility, driving related attitude and road safety specific attitude measures were compared to student mean scores. Table 4.6 shows the means, standard deviations and Cohen's d (a measure of effect size) of each measure for offenders and students by sex. Due to the different gender compositions of the offender and student groups, two-way ANOVAs (group x sex) were performed to examine the main effects of group membership and sex and any possible interactions between these two factors. Interaction effects occur when the impact of one factor depends on the level of the second factor. The ANOVA results can be seen in Table 4.7.

Table 4.6
Summary of means and standard deviations for personality, hostility and driving-related attitude measures for males and females

	Males					Females				
	Offender (N=273)		Student (N=78)			Offender (N=63)		Student (N=192)		
Measure	Mean	SD	Mean	SD	d [a]	Mean	SD	Mean	SD	d [a]
Personality										
Assertiveness	7.9	1.3	7.0	1.4	0.7	8.0	1.3	7.4	1.4	0.4
Depression	10.2	1.8	10.6	2.4	-0.2	10.4	2.0	10.2	2.1	0.1
Emotional adjustment	7.3	1.4	8.0	1.8	-0.5	8.2	1.7	8.5	1.6	-0.2
Sensation seeking	27.1	3.2	27.3	3.5	-0.1	25.3	3.2	25.6	3.7	-0.1
Mild social deviance	12.4	3.1	13.8	3.4	-0.4	11.3	2.8	12.9	3.1	-0.5
Hostility and aggression										
Assaultiveness	13.8	2.1	13.1	2.1	0.3	12.4	2.1	11.8	2.1	0.3
Indirect hostility	7.6	1.2	8.2	1.5	-0.5	8.9	1.3	9.0	1.2	-0.1
Verbal hostility	9.5	1.5	9.6	1.5	-0.1	8.9	1.5	8.9	1.5	0.0
Irritability	11.3	1.9	11.8	2.0	-0.3	11.5	1.9	11.9	1.9	-0.2
Resentment	5.6	1.2	5.5	1.2	0.1	5.4	1.1	5.3	1.3	0.1
Driving-related										
Aggression	13.4	2.5	12.1	2.2	0.5	12.6	2.5	11.8	1.9	0.4
Competitive speed	7.6	1.7	8.0	1.4	-0.2	6.3	1.5	6.8	1.5	-0.3
Inhibition	4.4	1.1	4.1	1.3	0.3	4.5	1.2	4.8	1.2	-0.2
Tension reduction	3.3	0.8	2.8	0.9	0.6	3.0	0.9	2.9	0.9	0.1
Risky driving style	19.4	6.2	18.2	4.7	0.2	16.5	4.7	15.9	4.3	0.1
Attitudes [b]										
Speeding acceptable	2.8	1.3	3.0	1.2	-0.2	2.4	1.2	2.4	1.2	0.0
Drink driving acceptable	2.5	1.6	1.8	1.2	0.5	2.4	1.7	1.7	1.2	0.5
Low risk of dying in crash	1.9	1.2	1.5	0.9	0.4	1.7	1.2	1.2	0.6	0.6
Friends don't drive safely	3.2	1.2	2.9	1.1	0.3	2.8	1.2	2.4	1.2	0.3
Low likelihood of being caught	2.5	1.2	2.9	1.1	-0.3	2.2	1.3	2.5	1.1	-0.3
Lack of concern for hurting others	1.9	1.3	1.5	0.9	0.3	1.1	0.6	1.2	0.5	-0.2
Poor driving skill	2.0	1.1	2.0	1.0	0.0	2.1	1.1	2.0	0.8	0.1
Low safety motivation	2.1	1.1	1.9	0.9	0.2	2.5	1.1	1.9	0.9	0.6

Note: For each measure, higher scores indicate higher levels of the variable, except for emotional adjustment where higher scores indicate lower levels of adjustment.

[a] A positive value indicates that offenders have a higher mean than students; a negative value indicates that students have a higher mean than offenders.

[b] For each attitude measure, higher scores indicate non-safety orientated attitudes.

Analyses of the personality measures indicated offenders scored statistically significantly higher than students on assertiveness. While offenders were more emotionally well adjusted than students, this effect was much stronger amongst males than females. Interestingly, offenders were less motivated to be socially deviant than students. Generally, the effect sizes indicate that these differences in personality functioning were in the small to medium range. There were no group differences for depression or motivation for sensation seeking.

Measure [a]	Main effects		
	Group	Sex	Interaction
Personality			
Assertiveness	33.9**	3.6	1.9
Depression	0.4	0.6	1.8
Emotional adjustment	10.1**	17.2**	1.6
Sensation seeking	0.6	27.6**	<0.1
Mild social deviance	25.0**	11.4**	0.2
Hostility and aggression			
Assaultiveness	10.8**	40.6**	0.1
Indirect hostility	7.6**	69.6**	3.7
Verbal hostility	0.1	18.7**	0.2
Irritability	5.8*	0.7	0.1
Resentment	0.5	1.6	<0.1
Driving-related			
Aggression	23.3**	6.0*	1.3
Competitive speed	9.4**	72.5**	0.2
Inhibition	<0.1	12.9**	5.1*
Tension reduction	12.2**	3.0	3.9*
Risky driving style	3.2	26.5**	0.3
Attitudes			
Speeding acceptable	0.6	20.7**	0.3
Drink driving acceptable	26.6**	0.7	<0.1
Low risk of dying in crash	20.2**	7.6**	<0.1
Friends don't drive safely	10.4**	15.5**	0.5
Low likelihood of being caught	11.0**	7.7**	0.4
Lack of concern for hurting others	3.8	35.4**	4.2*
Poor driving skill	0.9	0.2	0.4
Low safety motivation	18.9**	2.5	3.8

[a] ANOVA N=606, df=1,602.

*$p<.05$, **$p<.01$

As for hostility measures, offenders reported expressing hostility more physically than students, evident in higher scores of assaultiveness, while students expressed hostility by indirect means and were more irritable. However, effect sizes indicate that most group differences for hostility measures were small, apart from indirect hostility amongst males. Offenders and students did not differ on verbal hostility or resentment.

With respect to the driving-related measures, the greatest group difference was for driving related aggression; offenders reported more driving aggression than students. Several significant interactions were found. For tension reduction, an interaction indicated that male offenders reported more driving to reduce tension or increase personal efficacy than male students and the effect size of this difference was medium. As for driving inhibition, an interaction indicated that female students reported higher levels than female offenders while male offenders were more inhibited than male students. However, effect sizes indicate that these differences were small. Even though offenders were predominantly caught for speeding offences, they reported lower scores on competitive speed than students. There were no group differences for risky driving style.

The attitudinal measures, specific to road safety, suggested that offenders had less safety oriented attitudes than students. Offenders reported a more favourable attitude towards drink driving, were less apprehensive about the risk of dying in a crash, were less likely to report friends driving safely, and were less motivated to drive safely than students. A

significant interaction was evident for concern about hurting others in a crash; male offenders were less concerned than female offenders. In comparison to students, offenders perceived there was a greater risk of detection for a traffic offence. Of these differences in attitudes, attitude towards drink driving, the risk of dying and safety motivation (for females only) were of a medium effect size; the remainder were small.

Although not of primary concern, a number of sex differences were found. With respect to personality variables, males reported higher motivation for sensation seeking and mild social deviance than females. Males were also more emotionally well adjusted than females. As for hostility measures, males expressed hostility more overtly with high levels of assaultiveness and verbal hostility while females expressed more indirect hostility. Furthermore, males reported higher levels of driving related aggression, competitive speed, had a riskier driving style, and were less inhibited when driving than females. For attitudinal measures, males had less safety oriented attitudes than females; they had more favourable attitudes towards speeding, were less concerned about dying or hurting others in a crash, were less likely to report friends driving safely and perceived there was a lower risk of detection when committing a traffic offence.

4.3.4   Alcohol consumption

Just over 88 per cent of offenders reported drinking alcohol compared to 90 per cent of students. Respondents who reported drinking alcohol were asked how many standard alcoholic drinks they would consume on a typical drinking occasion. Response categories were 1 = 'I never drink alcohol', 2 = '1-2 drinks', 3= '3-4 drinks', 4 = '5-6 drinks', 5 = '7-9 drinks', 6 = '10 or more drinks'. The distribution of standard alcoholic drinks consumed by group and sex is given in Table 4.8.

Table 4.8
Number of standard alcoholic drinks consumed per occasion by group and sex

Number of drinks	Males (%)		Females (%)	
	Offender (N=273)	Student (N=78)	Offender (N=63)	Student (N=192)
1-2 drinks	11.0	13.9	17.5	22.7
3-4 drinks	17.2	18.1	24.6	35.5
5-6 drinks	17.2	25.0	24.6	23.3
7-9 drinks	22.9	20.8	12.3	16.3
10+ drinks	31.7	22.2	15.8	2.3

Offenders consumed more alcohol per occasion than students ($\chi2(4)=42.4$, p<.001). In order to determine if the difference in alcohol consumption between groups was due to the greater number of males in the offender group, chi-square analysis was performed using a three-dimensional contingency table. Females differed by group membership ($\chi2(4)=16.9$, p=.002) but males did not ($\chi2(4)=3.9$, p=.414). Female offenders reported consuming more drinks than female students. For example, 16 per cent of female offenders reported drinking ten or more standard alcoholic drinks per occasion compared to 2 per cent of female students.

4.4   Discussion

4.4.1   Personality characteristics

Personality traits, by definition, are relatively stable over time and cannot be manipulated by modest psychological means over a short period of time. However, understanding the personality functioning of DIP participants will assist in tailoring DIP sessions to their needs. Analysis of personality attributes found that offenders, in comparison to students, were characterised by high levels of assertiveness and were emotionally well adjusted (the latter for males). Although included under the heading 'personality' the measure of depression reflected a depressed mood rather than the clinical form of depression. Nonetheless, there was no difference in the level of depression between the two groups.

Considering that offenders were primarily caught for speeding, the finding that male students were less emotionally adjusted than male offenders is somewhat similar to the findings from a recent longitudinal study of young Australian drivers (Smart et al., 2005). Young drivers with no speeding offences were less emotionally well adjusted (high anxiety and depression) than those with one or more speeding offences. Lajunen (2001) offers a plausible explanation based on similar findings amongst crash involved drivers. While low levels of emotional stability may adversely effect driving (see Selzer, Rogers, and Kern, 1968), high levels, expressed as overconfidence or lack of concern, may actually encourage risky driving. It is interesting that in the present study, offenders were less concerned about hurting others in a crash although the effect size was small.

Nevertheless, DIP participants, relative to students, appeared to have normal personality functioning; they were not experiencing personal or emotional difficulties as measured by these variables. The combination of these characteristics suggest that offenders feel that they are in personal control of their lives and have the ability to alter their behaviour if they wish.

Many researchers have proposed that young drivers engage in risky driving behaviour to satisfy a need for stimulation or excitement. Several studies have reported that young drivers with high sensation seeking (or thrill seeking) scores were more likely to commit traffic offences and be crash involved than those with low sensation seeking scores (Beirness and Simpson, 1988; Rimmo and Aberg, 1996; Stevenson, Palamara, Morrison, and Ryan, 2001). Furthermore, young traffic offenders have been found to score higher on sensation seeking and venturesomeness (a measure similar to sensation seeking), in comparison to controls (Renner and Anderle, 2000; Trimpop and Kirkcaldy, 1997). Contrary to previous research, in the present study offenders were not motivated to seek thrills or excitement any more than the comparison group.

Mild social deviance, a measure of antisocial motivation, has previously been associated with self-reported higher driving speeds, traffic violations and crash involvement (Lawton, Parker, Stradling, and Manstead, 1997; West et al., 1993; West and Hall, 1997). Mild social deviance was actually found to be lower in offenders than students, indicating that DIP participants were not a socially deviant group. The finding that students were more motivated to be socially deviant than offenders is surprising. Nevertheless, in contrast to the students, the profile of personality characteristics for DIP participants suggest that they are both socially and personally well adjusted, at least on the measures employed in this study.

4.4.2   Hostility and aggression

High levels of trait aggression or hostility have been associated with subgroups of young problem drivers who self report engaging in risky driving behaviour such as speeding or dangerous overtaking (e.g. Begg and Langley, 2004; Deery et al., 1998; Ulleberg and Rundmo, 2003). In the present study, examination of the five hostility and aggression measures revealed small differences between DIP participants and students. DIP participants expressed hostility overtly (i.e. higher levels of assaultiveness) while students

expressed hostility indirectly and with little provocation. Thus, DIP participants were no more hostile or aggressive than students, they just expressed hostility in a different way.

4.4.3 Driving related attitudes and behaviours

Group differences on driving related measures were greater than those for hostility, but they were only in the small to medium range. Offenders reported higher levels of driving related aggression than students, and male offenders reported using driving as a means of reducing tension more than male students. It appears that male offenders have not learned adequate means of coping with tension, and driving is used as an outlet to express these feelings.

The reported higher levels of driving related aggression in offenders, compared to university students, is consistent with a study by Miles and Johnson (2003). While Miles and Johnson noted multiple traffic offenders reported more aggressive driving behaviour than University students, the present study reported similar finding for predominantly first time offenders. The size of this effect was similar in both studies, but it was not large. Moreover, unlike Miles and Johnson's study, the present study controlled for divergent age distributions by examining only young drivers (aged 25 years and under) and accounted for sex differences.

While DIP participants were no more hostile than students, they expressed hostile feelings by physical means that may harm others, and they reported more aggressive behaviour in the driving context. The tendency to be physically aggressive has been found to increase the likelihood of aggressive driving behaviour (Fong, Frost, and Stansfeld, 2001; Lajunen and Parker, 2001). Furthermore, it has been suggested that individuals with a predisposition for aggression in combination with a transient state (i.e. angry mood) in reaction to situational events, such as unexpected traffic congestion or conditions of anonymity, are more likely to exhibit driving aggression (Sharkin, 2004; Tasca, 2000).

Whilst personality traits are resistant to change, behavioural manifestations of these traits in the driving context have been learned and are, therefore, more amenable to change. As the difference in driving related aggression between offenders and students was not large, psychological interventions to reduce driving anger, such as the relaxation and cognitive restructuring interventions reported by Deffenbacher (Deffenbacher et al., 2000), may not be necessary for DIP participants. However, it may be beneficial for DIP participants to discuss ways of expressing anger and aggression other than on the road, and discuss effective strategies to manage hostile feelings and anger arising from situations when driving.

Driving style, as opposed to driving skill, is the manner in which people choose to drive (i.e. driving speed, how closely one follows behind the car in front), and these choices may reflect individual attitudes and beliefs of drivers (Elander, West, and French, 1993). A risky driving style has previously been associated with problem young drivers (Deery et al., 1998; Deery and Love, 1996). The offenders were expected to report a riskier driving style than students because they were detected committing traffic offence(s). However, no difference was found.

The majority of offenders were required to attend the DIP program because they were detected for speeding offences. Given this, it was surprising that offenders had significantly lower scores on competitive speed, that is, using speed to be competitive or aggressive when driving, than students. Furthermore, contrary to Sarkar and Andreas' (2004) finding, offenders did not view speeding less seriously than students. Reasons for these results remain speculative but it is possible that the offender's attitude towards speeding was influenced by actually being caught speeding and receiving penalties. The observation that offenders perceived a greater likelihood of detection when committing a traffic offence than students is consistent with this interpretation. Alternatively, the driving behaviour of the two young driver groups may be similar, but the offenders were actually caught exhibiting risky behaviour. This reasoning is consistent with Steinberg's (2004) view that heightened risk taking is normative for young drivers during adolescence.

The greatest contrasts between the two groups were found for some road safety related attitudinal measures. Predictably, offenders had significantly less safety oriented attitudes towards road safety issues than students; they were more sympathetic to drink driving, perceived a lower risk of dying in crash, and had a lower safety motivation. Although only a small difference was found, offenders reported that their friends didn't drive safely and male offenders expressed a lack of concern for hurting others in a crash compared to male students. Together, these attitudes suggest that DIP participants perceive risky behaviour (drink driving) as acceptable, do not perceive the risk or consequences of crashing as serious, and have low motivation to alter their behaviour. Furthermore, their social norms suggest unsafe driving is common amongst their peers.

The existence of attitudes promoting engagement in risky driving behaviour suggests that a change in DIP participants' attitudes is desirable. Attitudes towards these specific road safety issues are currently explored in DIP sessions. The strategy behind DIP allows participants to make their own decisions so that behaviour change is perceived to be within their control. Thus, DIP might be useful for assisting attitude change, and subsequently behaviour change. However, changing attitudes is certainly not an easy task and some researchers suggest that attitude change is more likely to follow behaviour change, rather than vice versa (e.g. Burgess and Webley, 1999). Regardless of the method adopted, a more safety-orientated attitude towards road safety should be encouraged amongst DIP participants.

Consistent with previous personality research, young male and female drivers differed on a number of personality characteristics, and driving related attitudes and behaviour; males reported higher levels of sensation seeking (Jonah, 1997; Zuckerman, 1984), mild social deviance (West et al., 1993; West and Hall, 1997), overt hostility (Buss and Durkee, 1957), driving aggression (Parry, 1968), competitive speed (Mayer and Treat, 1977), risky driving behaviour (Arnett, Offer, and Fine, 1997), and non-road safety orientated attitudes (Stradling and Meadows, 2000) than females. Given that DIP sessions consist of males and females, DIP facilitators need to be aware of the different motivations and attitudes of each sex when facilitating discussions.

4.4.4 Are DIP participants psychologically deviant?

The findings from this study suggest that offenders, relative to students, were personally well adjusted with some driving related aggressiveness. This profile of characteristics shows that DIP participants were not an extreme group of seriously disturbed young drivers but relatively normal.

To summarise, 'Problem Behaviour Theory' suggests that many problem behaviours (i.e. risky driving, problem drinking, illicit drug use and antisocial behaviour) are interrelated and reflect a common underlying propensity for problem behaviour or a deviant lifestyle among young adults (Jessor, 1987; Jessor and Jessor, 1977). There was no evidence to support this theory; offenders were not motived to be socially deviant or report risky driving, relative to students. Although higher alcohol use was found for female offenders relative to female students, this does not indicate that DIP participants lead a deviant lifestyle.

One might be interested to know if other similar young offender populations have been found to be deviant. A study in Austria examined the personality characteristics of young offenders assigned to a psychological training course after committing certain traffic offences within the first two years of driving (Renner and Anderle, 2000). The majority of the young drivers attending the course committed speeding offences and 80 per cent were first time offenders. In comparison to controls, young traffic offenders scored higher on extraversion and venturesomeness, but overall, the authors concluded that young offenders pertained to normal personality functioning rather than deviant. In the present study, offenders were characterised by elevated levels of driving aggression, rather than thrill seeking. However, the finding that DIP participants are not psychologically deviant is consistent with previous findings examining this type of young traffic offender.

Studies that have identified a number of these characteristics (i.e. sensation seeking, driving related aggression, risky driving style, high alcohol use) in groups of drivers (Deery and Love, 1996; Donovan, Queisser, Salzburg, and Umlauf, 1985; Wilson, 1991) examined populations of more serious traffic offenders (i.e. convicted drink driving offenders, multiple offenders). Thus, it appears that there is evidence supporting a continuum of psychological well-being; the degree of personality dysfunction depends on the severity of the traffic offences committed and may vary between the different subsets of traffic offenders. For example, the longitudinal study examining the psychological predictors of speeding behaviour in young Australian drivers found that those with multiple speeding offences were more problematic (multi-substance abuse, anti-social friends, contact with criminal justice system, more traffic offences) than those with one or no speeding offences (Smart et al., 2005). In addition, young drivers with one speeding offence exhibited more anti-social behaviour and had more traffic offences and contact with the criminal justice system than young drivers without speeding offences. In the present study, offenders were predominantly caught for speeding and may have committed only a single offence. Thus, the results apply to these specific types of offenders (i.e. not drink driving recidivists, multiple offenders etc.).

The fact that offenders were not distinguishable from students on a number of measures suggests that there is substantial within-group variability. Several studies provide evidence of subgroups within the young driver population, that is, subtypes of young drivers defined by a combination of certain characteristics (Deery et al., 1998; Ulleberg, 2001). There may be a subgroup within the population of the DIP participants that may be more deviant, and one might expect these drivers to have higher crash involvement or re-offend. More intensive psychological interventions may be more applicable to a subgroup of seriously deviant young drivers.

4.4.5   Limitations

There are several limitations of the current study that necessitate some caution when interpreting the findings. As mentioned previously, the comparison group may not be representative of the general young driver population in South Australia. The offender and student groups differ in their social background; obviously students had a higher level of education than offenders. Nevertheless, the student group does represent a comparable group of young drivers on a Provisional licence, as there were few differences between the groups on background variables other than sex (which did not present a problem).

In the absence of information on the normative levels of the measures in the general driving population, it cannot be established whether the levels of characteristics or attitudes of the student group are similar to the general driving population. Thus, DIP participants can only be characterised relative to the students. Certainly, higher levels of some of the personality characteristics examined may be found in young drivers (both offenders and students) than drivers in general.

The failure to find differences between the groups for several measures may be due to insensitive measures. Due to time constraints, some of these measures were shorter than the original scales. However, despite fewer items in each scale, most alpha coefficients were satisfactory.

4.4.6   Summary

The profile of characteristics for DIP participants indicated they were not a psychologically dysfunctional group in comparison to the students, but a relatively normal group. However, there were differences on some measures related to aggression; DIP participants reported higher levels of driving related aggression and driving to reduce tension (males only). They also reported less safety-oriented attitudes towards road safety issues than the comparison group. DIP participants may benefit from DIP sessions that address driving related aggression by discussing effective strategies to manage hostile feelings and anger arising from the driving context, and encouraging participants to find means other than driving to express aggression. Furthermore, continuing to foster a general motivation towards road

safety issues in DIP sessions, particularly attitudes towards drink driving and the serious risk and consequences of crashing, is consistent with the personality and attitudinal profiles.

5   Discussion

At the end of Section 3, we concluded that no one has a formula for a "best practice" driver improvement program. At the end of Section 4, we concluded that the present DIP participants are much like other people the same age. Suppose there were dissatisfaction with the DIP, on the grounds that evidence from elsewhere is that its effect is likely to be small. How, then, might the DIP develop in the future? We will now list some possible options.

- Improve some details of the delivery of DIP.

- Strengthen the program.

- Computerised instruction.

- Target the program more specifically at speed.

- Psychotherapeutic treatment.

- Aim for better evidence.

Improve some details. It is not our primary purpose to propose improvements to DIP here and now. Rather, we wish to demonstrate that there are some areas that could be considered if this strategy were followed. Here, we are not challenging the view that addressing attitudes and motivations is likely to be more effective than attempting to develop knowledge, and that the strategy of self-conceptualisation, rather than instruction, is appropriate. (1) The course content is not optimal. The largest segment is dedicated to drink driving, but the majority of DIP participants report having committed speeding offences. It would seem more appropriate for the content to be more heavily weighted to speed. (2) The training and printed notes given to facilitators are quite limited. (3) About a third of the present facilitators are police. As authority figures and associated with a more traditional 'instructive' approach, use of police as facilitators appears to be inconsistent with the strategy of letting young drivers find their own need for attitudinal or behavioural change. However, it is acknowledged that a police presence serves an important security function should any participants need to be turned away from the program. (4) In terms of program delivery, resources should be updated to remain relevant to participants, and a reduction in the group size is desirable to improve the degree of participant engagement.

Strengthen the program. If it is correct to say that the more intrusive an intervention is, the more effective it is likely to be, then one obvious possibility is to attempt to increase the impact that the DIP has on offenders --- there could be more sessions, each session could be longer, there could be a greater degree of psychological engagement of the offender. The training of the facilitators could be deeper. Most programmes that we have heard about, running in the U.S.A. or Europe, are 6 - 8 hours in length.

Computerised instruction. Exaggerating a little, everyone hates trainers, noone wants to be trained. This applies to the DIP, it applies to everything. The reasons why are not understood, but may be connected with the trainer being a person. Computerised instruction would not share this problem. Indeed, some modern computer-based training programs are attractive to the participants and hold their attention. It might be possible to use computer-based training for several short parts of the DIP: we have in mind this being an aid to (not a replacement of) facilitation, with the facilitator doing what humans do well. We are not aware of any existing computer-based training that is closely similar to the DIP.

Target the program more specifically at the driver's selection of driving speed. There is now good evidence that a slight reduction in speed within the range of speeds commonly chosen and regarded as safe --- that is, not reckless or dangerous speeds --- leads to a substantial improvement in safety. Now, a pessimist might say that what the young do on Saturday nights is largely outside their or society's control. But even if that is true, the young may act

upon safety messages at other times, and a reduction in speed at any time would be a welcome improvement in safety. As mentioned above, there are such programs in the UK.

Psychotherapeutic treatment. Some form of cognitive behavioural treatment (CBT) may be useful in, for example, reducing levels of driving related aggression. However, DIP participants do not appear to be a broadly antisocial or psychologically deviant group. If CBT were introduced and were found to have some beneficial effect, this would be very interesting because it would then be plausible that the benefit would also occur in the general population of young drivers.

Aim for better evidence. The idea here is that there has been an international failure, extending over decades, to find anything very effective, even though it seems unlikely that what works in Adelaide would be very different from what works in Sydney or even in Sacramento, Sheffield, or Stockholm. If we accept that finding something effective is very difficult, perhaps the emphasis should be changed from "What should we do?" to "How should we decide what to do?" One approach would be to conduct a randomised experiment: randomly assign participants to a DIP available group and a DIP not available group who would not be offered the programme. (There are many difficulties in the way of randomised experimentation, we concede.) Or an opportunity might occur to participate in a large-scale multi-centre experiment comparing several programmes to determine what really works, using methodology of unimpeachable quality.

Acknowledgements

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YOUNG DRIVER SURVEY

THE UNIVERSITY
OF ADELAIDE
AUSTRALIA

This study examines personality and risky driving. We need to start by asking you some questions about your personal details. Please answer all questions honestly. Remember that any information you provide will remain strictly confidential and will only be used for this study after the removal of any identifying information. Thank you for taking the time to complete this survey.

○ DIP Participant
○ Friend

1. What is your age?

2. What is your gender?
○ Male
○ Female

3. What is your current marital status?
○ Single (never married)
○ Defacto
○ Married
○ Separated or divorced
○ Widowed

4. Postcode of main residency (4 digits)

5. What is your main occupation?

6. What is the highest level of education that you have completed?
○ Some secondary or high school   ○ Some University
○ Year 12   ○ University degree
○ Some Trade/Technical college   ○ Other... (specify)
○ Certificate or diploma

7. What is your current driver's licence status?
○ Learner Permit
○ Provisional Licence
○ Full Licence
○ Disqualified
○ Unlicensed

8. If your licence is currently disqualified, what licence did you hold before you were disqualified?
○ Learner Permit
○ Provisional Licence
○ Full Licence
○ Not disqualified
○ Unlicensed

9. At what age did you first obtain your Learners Permit (L-Plates)?
○ 16 years   ○ 18 years
○ 16.5 years   ○ 18.5 years
○ 17 years   ○ 19 years or older
○ 17.5 years

10. At what age did you first obtain your Provisional Licence (P-Plates)?
○ 16.5 years   ○ 18.5 years
○ 17 years   ○ 19 years
○ 17.5 years   ○ 19.5 years or older
○ 18 years   ○ I don't have my P's

11. What method did you use to successfully get your Provisional Licence?
○ Log book
○ Driving test
○ I don't have my P's

12. Think back to the last time you were driving a vehicle. Approximately how many kilometres did you drive per week on average?
km

YOUNG DRIVER SURVEY

Please read each item below carefully. Tick the 'True' box next to the item if the statement is generally true of your beliefs or behaviour: tick the 'False' box if the statement is not true of your beliefs or behaviour. If you are unsure, please select the option that is true of your beliefs or behaviour MOST of the time.

13. I often wish I could be a mountain climber   ○ True   ○ False

14. If somebody hits me first, I let them have it   ○ True   ○ False

15. I am always patient with others   ○ True   ○ False

16. I would call myself a tense or 'highly strung' person   ○ True   ○ False

17. I sometimes pout when I don't get my own way   ○ True   ○ False

18. Since the age of ten, I have never had a temper tantrum   ○ True   ○ False

19. I sometimes gossip about people I don't like   ○ True   ○ False

20. When I am angry, I sometimes sulk   ○ True   ○ False

21. At times, I feel I get a raw deal out of life   ○ True   ○ False

22. I would say that I am fairly self-confident   ○ True   ○ False

23. Living is a wonderful adventure for me   ○ True   ○ False

24. I am often troubled with feelings of inferiority   ○ True   ○ False

25. I feel blue and depressed   ○ True   ○ False

26. I have known people who have pushed me so far that we have come to blows   ○ True   ○ False

27. Other people always seem to get the breaks   ○ True   ○ False

28. I often make threats I don't really mean to carry out   ○ True   ○ False

29. I will hesitate to make phone calls to business establishments and institutions   ○ True   ○ False

30. I am very quick to express my opinion   ○ True   ○ False

31. I could not put someone in their place even if they needed it   ○ True   ○ False

32. The future looks so gloomy that I wonder if I should go on   ○ True   ○ False

33. If I have to resort to physical violence to defend my rights, I will   ○ True   ○ False

34. Once in awhile I can not control my urge to harm others   ○ True   ○ False

35. Whoever insults me or my family is asking for a fight   ○ True   ○ False

36. My future looks hopeful and promising   ○ True   ○ False

37. There are times when I just can't say anything   ○ True   ○ False

38. I often wish I was never born   ○ True   ○ False

39. When I really lose my temper, I am capable of slapping someone   ○ True   ○ False

40. I would like to take up the sport of water skiing   ○ True   ○ False

YOUNG DRIVER SURVEY

41. I would rather concede a point than get in an argument — ○ True ○ False

42. I sometimes carry a chip on my shoulder — ○ True ○ False

43. I feel that there is more disappointment in life than satisfaction — ○ True ○ False

44. I can think of no good reason for ever hitting anyone — ○ True ○ False

45. A person should have considerable sexual experience before marriage — ○ True ○ False

46. I would like to sail a long distance in a small but seaworthy sailing boat — ○ True ○ False

47. It makes me angry when someone makes fun of me — ○ True ○ False

48. I would like to learn to fly an aeroplane — ○ True ○ False

49. A sensible person avoids activities that are dangerous — ○ True ○ False

50. When I am mad, I sometimes slam doors — ○ True ○ False

51. I generally cover up my poor opinions of others — ○ True ○ False

52. I like to date people who are physically exciting — ○ True ○ False

53. I would like to try surfing — ○ True ○ False

54. Lately, I have been kind of grouchy — ○ True ○ False

55. I feel that life is drudgery and boredom — ○ True ○ False

56. When I disapprove of my friend's behaviour, I let them know it — ○ True ○ False

57. I often don't know what to say to people I find attractive — ○ True ○ False

58. I can't help getting into arguments when people disagree with me — ○ True ○ False

59. My feelings are rather easily hurt — ○ True ○ False

60. People who continually pester you are asking for a punch in the nose — ○ True ○ False

61. I have hesitated to make or accept dates because of 'shyness' — ○ True ○ False

62. I would never want to try jumping out of a plane with or without a parachute — ○ True ○ False

63. I am irritated a great deal more than people are aware — ○ True ○ False

64. Keeping the drinks full is the key to good party — ○ True ○ False

65. I am generally a happy person — ○ True ○ False

66. I enjoy the company of the 'in' crowd — ○ True ○ False

67. I would like to go scuba diving — ○ True ○ False

68. If I let people see the way I feel, I'd be considered a hard person to get along with — ○ True ○ False

69. I would call myself a nervous person — ○ True ○ False

70. I often feel like 'dynamite' ready to explode — ○ True ○ False

71. I think I would enjoy the sensations of skiing very fast down a large mountain slope — ○ True ○ False

YOUNG DRIVER SURVEY

72. **I sometimes feel 'just miserable' for no good reason** ○ True ○ False

73. **I often like to get 'high' (drink alcohol or smoke marijuana)** ○ True ○ False

74. **If somebody annoys me, I tell them what I think of them** ○ True ○ False

75. **When I look back on what's happened to me, I can't help feeling mildly resentful** ○ True ○ False

76. **I don't let a lot of unimportant things irritate me** ○ True ○ False

77. **I like wild 'uninhibited' parties** ○ True ○ False

78. **I often find myself disagreeing with people** ○ True ○ False

79. **I seldom strike back, even if someone hits me first** ○ True ○ False

80. **Things have worked out well for me** ○ True ○ False

81. **Sometimes people bother me just by being around** ○ True ○ False

82. **I demand that people respect my rights** ○ True ○ False

83. **I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional or illegal** ○ True ○ False

84. **I like to dive off the high board** ○ True ○ False

Please tick the most appropriate response beneath each statement that best describes how you typically drive. Remember that your answers will remain strictly confidential.

85. **I take risks**
○ Not at all   ○ Some of the time   ○ Moderately   ○ Most of the time   ○ All the time

86. **I race other cars**
○ Not at all   ○ Some of the time   ○ Moderately   ○ Most of the time   ○ All the time

87. **I cut in and out of the traffic**
○ Not at all   ○ Some of the time   ○ Moderately   ○ Most of the time   ○ All the time

88. **I pass other cars**
○ Not at all   ○ Some of the time   ○ Moderately   ○ Most of the time   ○ All the time

89. **I get angry with slow drivers**
○ Not at all   ○ Some of the time   ○ Moderately   ○ Most of the time   ○ All the time

90. **I like to drive fast**
○ Not at all   ○ Some of the time   ○ Moderately   ○ Most of the time   ○ All the time

91. **I exceed the speed limit**
○ Not at all   ○ Some of the time   ○ Moderately   ○ Most of the time   ○ All the time

YOUNG DRIVER SURVEY

Please read each item below carefully. Tick the 'True' box next to the item if the statement is generally true of your opinion about driving or your behaviour as a driver: tick the 'False' box if the statement is not true of your opinion about driving or your behaviour as a driver. If you are unsure, please select the option that is true of your opinion or behaviour MOST of the time.

92. I often make rude signs at other motorists who annoy me
○ True ○ False

93. I find driving a form of relaxation which I use when I feel tense
○ True ○ False

94. It's fun to manoeuvre and weave through traffic
○ True ○ False

95. I lose my temper when another driver does something stupid
○ True ○ False

96. I am not easily provoked or angered when driving
○ True ○ False

97. It's fun to outwit other drivers
○ True ○ False

98. I have given chase to a driver who has annoyed me
○ True ○ False

99. I find it difficult to control my temper when driving
○ True ○ False

100. I have been known to flash my car lights at others in anger
○ True ○ False

101. I like to pass other cars on the highway even if I'm not in a hurry
○ True ○ False

102. I swear out aloud at other drivers
○ True ○ False

103. I use my horn a great deal
○ True ○ False

104. When I am feeling annoyed or angry I tend to drive more carefully because I am afraid of losing control of the car
○ True ○ False

105. If a driver follows too closely, I might hit the brakes to teach him or her a lesson
○ True ○ False

106. It's fun to beat other drivers when taking off from traffic lights
○ True ○ False

107. When I am angry or stressed I make a conscious effort to make sure I drive safely
○ True ○ False

108. Driving at high speeds is exciting
○ True ○ False

109. I generally become more cautious while driving when I am upset
○ True ○ False

110. If the driver behind me has their lights shining in my mirror, I pay them back in some way
○ True ○ False

111. When I am upset, driving helps soothe my nerves
○ True ○ False

YOUNG DRIVER SURVEY

This is a list of things which people are tempted to do from time to time. How likely is it that you would do these things if you were completely certain of getting away with it? For each item, tick the option which applies to you. Remember that your answers will remain strictly confidential.

112. Ride on public transport without paying a fare
○ Not at all likely ○ Quite likely ○ Very likely

113. Park in a 'no standing' zone
○ Not at all likely ○ Quite likely ○ Very likely

114. Earn cash payments without paying income tax on them
○ Not at all likely ○ Quite likely ○ Very likely

115. Leave a shop with goods that you have not paid for
○ Not at all likely ○ Quite likely ○ Very likely

116. Drive the wrong way down a one-way street
○ Not at all likely ○ Quite likely ○ Very likely

117. Keep a $50 note which you have found in the street
○ Not at all likely ○ Quite likely ○ Very likely

118. Hit someone who has annoyed or upset you
○ Not at all likely ○ Quite likely ○ Very likely

119. Take time off work/school/uni sick when you have something more interesting to do
○ Not at all likely ○ Quite likely ○ Very likely

Please indicate the extent to which you agree or disagree with each statement by ticking the alternative that best represents your opinion.

120. I think it's OK to speed if the traffic conditions allow you
Strongly agree ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 Strongly disagree

121. It is immoral to drink and drive
Strongly agree ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 Strongly disagree

122. The risk of dying young in a traffic crash is so low that you can ignore it
Strongly agree ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 Strongly disagree

123. Most of my friends drive safely
Strongly agree ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 Strongly disagree

124. I am not likely to be caught by police if committing a traffic offence
Strongly agree ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 Strongly disagree

125. Hurting someone else with my car would scar me for life
Strongly agree ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 Strongly disagree

126. I see most traffic hazards when driving
Strongly agree ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 Strongly disagree

127. I usually keep a sufficient following distance
Strongly agree ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 Strongly disagree

YOUNG DRIVER SURVEY

128.   How many traffic crashes have you been involved in while you were driving that involved physical injuries to one or more people?

129.   How many traffic crashes have you been involved in while you were driving that ONLY caused damage to vehicle(s) or property?

130.   How many traffic crashes have you been RESPONSIBLE for while you were driving that involved physical injuries to one or more people?

131.   How many traffic crashes have you been RESPONSIBLE for while you were driving that ONLY caused damage to vehicle(s) or property?

132.   What type of traffic offence did you commit that led to your licence disqualification?

☐ Speeding   ☐ Following too closely
☐ Not displaying L or P-Plates   ☐ Fail to keep left
☐ Drink driving   ☐ Overtaking without due care
☐ Fail to give way/stop   ☐ Not wearing seat belt
☐ Disobey traffic signals/sign   ☐ Not applicable
☐ Dangerous/reckless/careless driving   ☐ Other… (specify)

133.   Were you involved in a crash when the traffic offence that led to your licence disqualification was detected?

○ Yes   ○ No   ○ Not applicable

134.   In total, how many fines for moving traffic offences have you received as a driver? (excluding parking fines)

135.   Do you drink alcohol?

○ Yes   ○ No

136.   On a typical occasion when you drink alcohol, how many standard drinks of alcohol do you consume, on average? (A standard drink is a schooner of beer, a nip of spirits or a glass of wine)

○ I never drink alcohol   ○ 5-6 drinks
○ 1-2 drinks   ○ 7-9 drinks
○ 3-4 drinks   ○ 10 or more drinks