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ACCIDENT RESEARCH CENTRE

UNDERSTANDING PASSENGER INFLUENCES ON DRIVER BEHAVIOUR:

IMPLICATIONS FOR ROAD SAFETY AND RECOMMENDATIONS FOR COUNTERMEASURE DEVELOPMENT

by

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2001

Report No. 180

Monash University Accident Research Centre Report Documentation Page

Report No.	Date	ISBN	Pages
180	April 2001	0 7326 1479 1	169

Title and sub-title:

Understanding Passenger Influences on Driver Behaviour: Implications for Road Safety and Recommendations for Countermeasure Development

Author(s):

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Type of Report & Period Covered:

General, 2000 - 2001

Sponsoring Organisation(s):

NRMA-ACT Road Safety Trust

Abstract:

Several epidemiological studies have shown that the crash risk of drivers is affected, positively or negatively, by the presence of passengers. Little is currently known, however, about the behavioural interactions between drivers and passengers that moderate these effects. The present study proposed to investigate the potentially constructive roles that passengers can play to positively influence the behaviour of drivers, to enhance driver and passenger safety in the Australian Capital Territory (ACT). This involved a literature review, an analysis of ACT crash data pertaining to passengers, administration via telephone of a survey to 872 ACT residents exploring the roles that passengers currently play in the driving situation, and the conduct of three focus groups involving 28 ACT residents. The findings shed light on the role types that passengers currently play in influencing, positively and negatively, their safety and that of their driver – from the perspective of both passengers and drivers. The outcomes of this study formed the basis for a set of recommended countermeasures designed to enhance the safety of both passengers and drivers in the ACT.

Key Words:

Passengers, Drivers, Driver behaviour, Road Safety

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Preface

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This report has been prepared by Dr Michael Regan and Ms Eve Mitsopoulos for the Monash University Accident Research Centre, using sponsorship funds from the NRMA-ACT Road Safety Trust. The report is the exclusive work of the Monash University Accident Research Centre and the Trust accepts no responsibility for the contents of it, nor does it assume any duty of care to any person who might act in reliance of its contents.

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Executive Summary

Background and Overall Objective

Passengers comprise a substantial proportion of the road toll. However, passengers' safety is almost entirely in the hands of the driver. Traditionally, the driver has been the main focus of road safety campaigns and programs. The passenger's influence on the driver's behaviour has been virtually overlooked in the development of such campaigns. Little is currently known about the patterns of communication that exist between drivers and passengers, and the effect this interplay has on driver behaviour to influence safety. If the behavioural interactions that take place between drivers and passengers were better understood, it would be possible to develop countermeasure strategies for enhancing the positive role of passengers and minimising the negative role of passengers on driver behaviour. These countermeasures would be expected to have considerable safety benefits for drivers and passengers alike.

The NRMA-ACT Road Safety Trust commissioned the Monash University Accident Research Centre (MUARC) to research the potentially constructive roles that passengers can play to positively influence the behaviour of drivers, and from this research, to make recommendations for countermeasures that are designed to enhance driver and passenger safety in the ACT. This study was partitioned into five parts: a review of the literature on the interaction between drivers and passengers; a summary of ACT crash data pertaining to passengers; administration via telephone of a survey; the conduct of three focus groups; and recommendations for countermeasure development and future research.

Literature Review

The purpose of the literature review was to gain an understanding of the research that has been conducted to date on the effect of passengers on driver behaviour, the behavioural mechanisms underlying this effect, and of any road safety initiatives that target passengers.

Epidemiological studies have served to show that the risk of drivers being involved in a casualty crash is affected by the presence of passengers. However, the effect of passengers on driver behaviour is not uniform across all drivers for all of the types of passengers that drivers might carry. It seems that the direction and magnitude of the effect of passenger presence on driver crash risk is contingent upon the following factors at least: the age of the driver, and the sex of the driver relative to the sex of the passenger. For young drivers at least, the age of the passenger is another factor that has been found to influence what sort of an effect the presence of passengers will have on them. There is consensus across studies that particular driver-passenger combinations increase driver crash risk while other combinations have either no effect or reduce the risk. It has been found that the crash risk of young drivers is elevated further when carrying their peers as passengers, but is reduced when carrying an adult or a child as a passenger compared with carrying no passengers. The crash risk of older drivers in general, was reduced in the presence of passengers. Young male drivers were reported to have a higher crash risk in the presence of passengers than young female drivers, and male passengers were found to place young drivers, male and female, at a greater risk of a crash than female passengers. The number of passengers was also found to influence the direction and magnitude of the passenger effect for young drivers. The fatal crash risk of young drivers

was reported to increase with two or more passengers provided the passengers are peers of the young driver. The crash risk of young drivers, male and female, also was shown to increase with each additional male passenger. A beneficial effect of carrying two or more female passengers was observed for young drivers but for female drivers only.

Behavioural studies have revealed the relationship between the driver and the passenger as another critical determinant of the effect of passengers on driver behaviour and therefore, driver and passenger safety. It was reported that friends or peers as passengers are generally a negative influence on the behaviour of the young driver, particularly the young male driver, thus compromising safety. This is thought to be due to an increased propensity by the young driver to take risks in response to peer pressure. Inattentiveness to the driving task due to distraction caused by social interaction among peers might also play a role. In contrast, passengers who are the young driver's children, spouse/partner, or parents were found to promote safer driving practices through the young driver's increased sense of responsibility and respect for the life of others. Further, it was thought that the beneficial effect of passengers on the safety of elderly drivers might be due to the passenger warning the driver of imminent hazards in consideration of elderly drivers' generally compromised perceptual and cognitive abilities.

There are three road safety initiatives that concern passengers. First, New Zealand and 15 US states have a passenger restriction as part of Graduating Licensing. All jurisdictions with passenger restrictions permit young newly licensed drivers to carry passengers if the young driver is being supervised by a fully licensed driver who is over the age of 20 or 21. An evaluation of the New Zealand passenger restriction revealed fewer crashes involving passengers among young drivers with a restricted licence compared with young drivers licensed before the introduction of graduated licensing. The Californian passenger restriction has been evaluated also. Preliminary results showed a reduction in the proportion of deaths and injuries among teenage passengers. Passenger restrictions have been criticised on the grounds that rates of compliance might be low, and that compliance will force young passengers to drive themselves thus increasing their exposure to a crash. It has been argued, however, that even if all teenage passengers were to comply by driving themselves a large proportion of lives would still be saved each year. The second initiative, the Norwegian "Speak Out" campaign, was designed to encourage teenage passengers to speak out to their teenage drivers about excessive speeding and other unsafe driving practices. An evaluation showed a reduction in the proportion of fatalities and serious injuries among passengers aged 16 to 19 years but not among drivers aged 16 to 19 years. It is possible that the effect of the campaign was to discourage passengers from driving with drivers who did not act on their advice to drive more safely. A third initiative, the Transport Accident Commission of Victoria's "If you don't trust the driver, don't get in" campaign was targeted primarily at young passengers and was an advertisement televised in Victoria for a period in the late 1990s. It was designed to make young passengers realise that they have a choice and that they do not have to travel with drivers whose responsibility or judgment they question.

ACT Crash Data

A summary of the available and relevant data on casualty crashes involving passengers in the ACT from 1995 to 1999 was undertaken. The aim of this activity was to gain an understanding of the characteristics of these crashes. The main findings were:

- Between 1995 and 1999, 35% of vehicle occupants who were killed or seriously injured in a crash were passengers.

- In single vehicle crashes, driver and passenger casualties were most prevalent among males, and among 16 to 24 year olds.
- In single vehicle crashes where both the driver and at least one passenger was killed or seriously injured, the most prevalent driver-passenger combination was 16 to 24 year old male drivers carrying 16 to 24 year old male passengers. These trends are consistent with similar trends reported elsewhere in the literature.

Telephone Survey

A total of 872 ACT residents who were at least 16 years of age, and who were drivers, passengers or both completed the survey. The aims of the telephone survey were:

- To collect some background information on participant's experience and travel exposure as a driver, and their exposure as a passenger, in addition to some demographic information on participants' main passenger and their main driver.
- To determine the types of roles that passengers currently play to influence driver behaviour from the perspective of the driver and also from the perspective of the passenger.
- To determine to what extent the types of roles that passengers play are affected by the following variables: the age of the driver, the age of the passenger, the relationship between the driver and the passenger, and the sex of the driver relative to the sex of the passenger.

The critical findings were:

- Passengers currently play a number of role types: passengers determine whether their driver engages in *risky driving behaviours* (e.g. driving too close to the car in front) either implicitly through their physical presence or explicitly by telling the driver; they determine whether their driver engages in *anti-social driving behaviours* (e.g. spinning the wheels, or drink driving) either implicitly or explicitly; and, they determine whether their driver drives *responsibly* (e.g. notifying the driver of approaching traffic hazards). In addition, passengers *talk* to their driver either socially or to keep their driver awake, and they *do* things for their driver to alleviate the driver's workload (e.g. answering the mobile phone).
- If acted upon by the driver, role types potentially encouraging risky driving behaviours and anti-social behaviours are the most likely to have negative safety implications.
- From the perspective of the driver it was found that:
    - The extent to which role types were played was affected by passenger age, driver-passenger relationship, and the sex of the driver relative to the sex of the passenger, but not by driver age.
    - The mere physical presence of a 16 to 24 year old passenger was more likely to stimulate the driver to engage in risky and anti-social driving than the presence of a passenger aged 55 years or older.
    - A 16 to 24 year old passenger was more likely to tell the driver to take risks, to engage in anti-social driving, to talk to the driver, and to do things for the driver than a passenger aged 55 years or older.

- A 16 to 24 year old passenger was no less likely than a passenger aged 55 years or older to be responsible by telling the driver about approaching hazards, how to reach the destination, and so on.
    - A friend as a passenger was generally more likely to stimulate the driver, either through physical presence or by telling the driver, to engage in anti-social driving behaviours than the presence of the driver's child or spouse. A friend of the driver was also more likely to talk to the driver than the driver's spouse.
    - The physical presence of a male passenger was more likely to stimulate a female driver to practice anti-social driving than the physical presence of a female passenger.
    - A male passenger of a female driver was more likely to tell the driver to engage in risk taking and anti-social driving behaviours than a female passenger of a male driver and a female passenger of a female driver
- From the perspective of the passenger it was found that:
    - The extent to which role types were played was affected by driver age only – a pattern of effects in contrast to that revealed from the driver's perspective.
    - Passengers in general, felt that they were more likely to stimulate, either through physical presence or by telling the driver, a driver aged 55 years or older to engage in anti-social type behaviours than a driver aged 25 to 54 years.
    - Passengers in general, felt that they were more likely to do things or talk to a driver who was aged 25 to 54 years than a driver who was aged 55 years or above.
- The mismatch in outcomes between the driver's perspective and the passenger's perspective suggests that passengers appear to be unaware that they are having the effects on drivers that drivers say that passengers are having on drivers. This is one of the most important findings emerging from the present study.

Focus Groups

A total of three focus groups were held in the ACT involving a total of 28 ACT residents who were drivers, passengers, or both. The aims of the focus groups were:

- to further examine the roles passengers currently play and driver's perceptions and reactions to these role types;
- to discuss the roles that passengers should be playing to assist the driver to drive more safely; and
- to discuss possible strategies for best implementing and promoting these roles in the community.

The key findings were:

- Passengers currently play several roles: navigating, adjusting the radio and other dials, keeping the driver company by talking, warning the driver of approaching hazards, and alerting the driver to the speed at which they are travelling.
- Whether passengers will play a given role, and how drivers perceive and react to these roles, was said to depend on the relationship between the driver and the passenger, and for the younger participants in particular, the age and sex of the driver relative to the passenger. For example:

  - Passengers were said to be more likely to intervene when the driver is a family member than when the driver is a work colleague or an acquaintance.
  - Younger participants commented that they would be more likely to intervene as a passenger or take advice as a driver, from their parents than from their friends.
  - Younger drivers said that they drive more cautiously when carrying their parents, older passengers and children as passengers due to a greater sense of responsibility.
  - Young participants, males in particular, commented that as a passenger they would never discourage their male peers from engaging in risky driving behaviours, and might even explicitly encourage such behaviours.
  - As a driver, many of the young males commented that they would also engage in risky driving practices to show off even if not explicitly asked to by their male peers travelling as passengers.
- Roles that participants believed that passengers *should* be playing included: warning the driver of approaching hazards, navigating, adjusting the radio and other dials, and keeping quiet in high workload times. Essentially, any intervention from passengers must be constructive and should occur before the event rather than after the event.
- Participants generally agreed that road safety strategies involving a constructive role for passengers could be implemented. These strategies:
  - Need to be along the lines of "look after the driver" and "help the driver in these ways" rather than "passengers should do this or that".
  - Need to be well promoted to raise public awareness of the potential benefits and dangers of carrying passengers.
  - Need to be implemented through education at the learner driver stage to encourage young passengers to query their driver about driving behaviours that appear to be unsafe, and to encourage young drivers to expect such intervention and to consider it.
  - Need to pay particular attention to the potentially negative influence of young male friends as passengers of young drivers who are susceptible to this influence.

Recommendations for Countermeasure Development and Future Research

Recommendations for countermeasure development were derived from the findings of the current study. To assist in this process, the authors convened a discussion among a small group of experienced and respected Melbourne-based road safety and aviation safety researchers and practitioners. An integrated package of recommended countermeasures for the ACT were derived from the meeting and were categorised as follows:

- Promotion:
  - Any promotional campaign introduced in the ACT should aim to raise community understanding and support of the increased and decreased risks associated with carrying certain types of passengers.
  - Such a campaign would need to target passengers, drivers and parents of young drivers.

- The key elements of the campaign would be to make people aware of the potentially negative and positive influences that passengers have on driver behaviour, and to empower people to speak up as passengers if they feel that the driver is compromising their safety.

- Education:
  - Educational materials and programs that re-iterate the key messages of the promotional campaign need to be introduced also.
- Training:
  - Consideration should be given to incorporating into pre-driver and driver training programs principles of Crew Resource Management (CRM) that are relevant to the enhancement of communication and teamwork between drivers and passengers to enhance safety. CRM is a type of training that has been adopted widely throughout the aviation industry to enhance communication and teamwork within the aircraft cockpit to optimise flight safety.
- Licensing:
  - Consideration should be given to incorporating information into the preparatory handbooks for learner drivers in the ACT and items into the ACT traffic knowledge test for learner drivers, that pertain to the positive and negative influences of passengers on driver behaviour and safety.
  - The ACT government should consider introducing a passenger restriction for newly licensed probationary drivers.
- Enforcement:
  - Consideration should be given to doubling the number of demerit points incurred by probationary drivers or implementing an alternative penalty system for probationary drivers who commit a traffic offence while carrying passengers. Such a penalty regime could be introduced following the expiration of the passenger restriction period to deter young drivers from partaking in high-risk activities when carrying passengers.
- Research:
  - Further research is necessary before the recommended countermeasures can be fully developed and implemented. For example, it would be necessary to conduct focus testing of the themes and messages that underpin any proposed promotional campaign, including the likely reaction of young drivers and parents to passenger restrictions.
  - Further research would need to be conducted to quantify the costs and benefits of the proposed countermeasures.
  - An evaluation study would be necessary after the implementation of the countermeasure program to determine the program's effectiveness in reducing young passenger and driver fatalities and serious injuries in the ACT.

Both the papers that were reviewed and the work carried out by the authors highlighted the need for further research in several areas. These included:

- Research into determining the relative contributions of distraction and risk taking factors in giving rise to the increased crash risk of young drivers carrying their peers as passengers.

- An examination of the influence on safety of the personality of the driver and of the passenger.
- Research into the effect of the number of passengers on the extent to which particular role types are played by passengers.

Acknowledgements

The authors are indebted to the NRMA-ACT Road Safety Trust for their sponsorship, support and interest in the project, particularly Eddie Wheeler, Secretary-Manager of the Trust. We also wish to acknowledge Carlos Hosseen, and his staff at the ACT Department of Urban Services, for providing us with the relevant crash data for this study.

The authors are grateful to the following colleagues for their advice during the course of the study: Dr Max Cameron, Warren Harrison, Dr Narelle Haworth, Dr Simon Moss, and Teresa Senserrick. We also thank the following colleagues who participated in the round-table discussion on recommendations for countermeasure development: Richard Blaze, Antonietta Cavallo, Samantha Cockfield, Brent Hayward, Paul Tierney, Professor Tom Triggs, and Professor Peter Vulcan. Our gratitude extends to: Michael Cameron for programming the telephone survey into a MS Access database, and for developing the program which was used to randomly generate telephone numbers for use in the telephone survey; to the many research assistants who administered the telephone survey; and to Naomi Kowadlo and Mei Regan for their assistance with the data analysis.

We also wish to thank the many telephone survey respondents who took the time to complete the survey, and the participants in the focus groups for their active involvement and interesting comments.

Finally, the first author would like to thank a colleague, Bob Ungers, for sharing some of his early thoughts about the influence of passengers in moderating safety outcomes.

Chapter 1 Introduction

1.1 Background

Motor vehicle crashes are a principal cause of death and serious injury in many motorised countries. The rate of fatalities from motor vehicle crashes is particularly high among the young and the elderly (Insurance Institute for Highway Safety, 2000). Consequently, much time and money has been invested in the development and implementation of road safety campaigns and programs designed to alter behaviours, such as speeding, that have been causally linked to the incidence and severity of crashes. The driver has been the predominant focus of such campaigns and programs. While this has been shown to be an effective strategy when enforcement is coupled with promotion (e.g. Cameron, Cavallo & Gilbert, 1992; Newstead, Mullan & Cameron, 1995), the passenger as a potential positive influence on the driver's behaviour has been virtually overlooked in the design of such road safety campaigns and programs. To date, only one campaign known to the authors has been developed and successfully implemented assigning an active role to the passenger to warn their driver against engaging in dangerous driving, namely travelling at excessive speeds (Elvik, 2000, Ljones, 2000). Little is known about the ways in which passengers interact with drivers to positively or negatively influence the driver's behaviour, and how these roles vary depending on factors such as the relationship, and the age of the driver and of the passenger. If passengers can play a positive role in influencing the behaviour of the driver to enhance both driver and passenger safety, then identifying the ways in which this can be achieved through a thorough understanding of the behavioural mechanisms underlying the influence of passengers on driver behaviour, provides an additional strategy for future road safety campaigns and programs. The ultimate goal would be a reduction in the incidence of fatal and serious injury crashes among drivers and passengers.

In June 1999, the Board of the NRMA-ACT Road Safety Trust provided MUARC with a grant to undertake research exploring the potentially positive influences of passengers on driver behaviour, and from this research, to make recommendations for countermeasures to improve driver and passenger safety in the ACT. The methods and outcomes of the research and the practical recommendations for countermeasure development deriving from it are presented in this report.

1.2 Aims and Phases of the Study

The general objective of this study was to identify novel methods for enhancing both driver and passenger safety in the ACT by exploring the potentially constructive roles that passengers can play to positively influence the behaviour of the driver. To be in the position to develop appropriate countermeasure strategies, the study proceeded in four phases, including three phases of data collection. Each phase is summarised below.

1.2.1 Review of the Literature on the Interaction between Drivers and Passengers

A review of the literature was conducted first to ascertain the current level of knowledge and the status of research into the interaction between drivers and passengers, and the influence of this interaction on driver behaviour and safety. This involved a review of the relevant literature in the road safety and behavioural domains, focussing on epidemiological studies of passenger involvement in crashes and estimates of crash risk, and studies investigating the behavioural factors that are implicated in crashes generally and in crashes where passengers are present.

1.2.2 Summary of ACT Crash Data of Passenger Presence in Crashes

A summary of the available and relevant data on casualty crashes involving passengers in the ACT from 1995 to 1999 was undertaken. The purpose of this activity was to gather some background information on the characteristics of these crashes.

1.2.3 Telephone Survey of Current Passenger Roles

A telephone survey was administered to a total of 872 ACT residents. The primary aim of the survey was to determine the current role types of passengers, either positive or negative, that potentially influence the behaviour of the driver. In particular, the effect on these role types of passenger age, driver age, the relationship between the driver and the passenger, and the sex of the driver relative to the sex of the passenger was examined.

1.2.4 Group Discussion of Drivers' Perceptions and Reactions to Passenger Roles

A total of three focus groups were held in the ACT toward the completion of the telephone survey component of the study, involving a total of 28 ACT residents. The main objective of the group discussions was to further investigate the current roles of passengers in terms of drivers' perceptions and reactions to these roles along with the variables that influence these effects. A further aim was to discuss the roles that passengers should be playing to enhance driver, and therefore, passenger safety, and to explore the options for best implementing these roles.

The findings of these various activities are documented in the chapters that follow. The review of research previously conducted on the interaction between drivers and passengers is presented in Chapter 2. In Chapter 3, the ACT crash data pertaining to passenger presence in crashes are summarised. The methods and outcomes of the telephone survey are presented and discussed in Chapter 4, and in Chapter 5, the methods and findings of the focus group discussions are presented and discussed. Chapter 6 summarises and discusses the findings of the ACT crash data, telephone survey, and focus group components of the study. Finally, in Chapter 7, recommendations for countermeasures deriving from the current research are outlined and discussed along with recommendations for further research.

Chapter 2 Review of the Literature on the Interaction between Drivers and Passengers

2.1 Nature of the Problem: Passenger Casualties in Motor Vehicle Crashes

Passengers comprise a substantial proportion of the fatalities and serious injuries resulting from motor vehicle crashes. In the United States, for example, approximately 25 percent of the people who died in motor vehicle crashes in 1990 were passengers (Soderstrom, Dischinger & Kerns, 1996), and approximately half of the teenagers aged 13 to 19 years killed in motor vehicle crashes in 1999 were passengers (46%) (Insurance Institute for Highway Safety, 2000; Williams, 2000b). In addition, the increase in death rates for vehicle occupants aged 16 to 19 years relative to those aged 20 years and over is much greater for passengers than for drivers (Williams, 2000b). Statistics such as these have raised the issue of whether the presence of passengers has some influence on the behaviour of the driver and in turn, on safety.

2.2 Effect of Passengers on Driver Behaviour: Early Studies

There is a growing body of evidence confirming that the presence of passengers has an effect on the behaviour of the driver. Early studies were largely positive, reporting safer driving practices among drivers accompanied by passengers. Lawshe (1940) observed that drivers carrying passengers drove more slowly than drivers travelling alone. Evans and Wasielewski (1983) reported that drivers travelling alone drove closer to the car in front of them, that is, they maintained a shorter headway, than drivers travelling in the presence of passengers. This effect was thought to be a consequence of the driver's reduced attention available for the driving task when accompanied by passengers. In the presence of passengers, the driver increases their headway to give a margin of safety that matches that adopted in the absence of passengers. The results of these studies alone were encouraging, for they indicated that passengers may have had a positive influence on the driver's behaviour. A limitation of these early studies, however, was that factors such as the driver's age were not taken into consideration. This is important in light of more recent evidence demonstrating that the effect of passengers on driver behaviour is relatively complex, and might depend on many factors, including the age of the driver relative to the age of the passenger. Whether the presence of passengers has a positive effect on driving practice has been found to be contingent upon several factors, particularly the personal characteristics of the driver and the passenger mediated by the social context. The studies which constitute this evidence are generally divided into two groups: first, epidemiological studies of the crash risks of drivers when accompanied by passengers; and second, behavioural studies investigating the types of changes to driver behaviour which occur in the presence of passengers, and the mechanisms underlying these changes. Each of these study types is considered in turn.

2.3 Epidemiological Studies of Driver Crash Risk in the Presence of Passengers

Much of the research assessing the impact of passengers on crash risk has focussed on young drivers, given their well documented over-representation in crashes, and elevated crash risk relative to older drivers in general. This research has served to show that in the presence of passengers, the crash risk of young drivers is increased further, particularly in the presence of teenage passengers (e.g. Preusser, Ferguson & Williams, 1998). Several studies have also shown that young novice drivers are at greater risk of involvement in a casualty crash when accompanied by two or more young passengers (e.g. Drummond & Healy, 1986). As discussed in the following sections, several factors have been found through epidemiological research to influence driver crash risk in the presence of passengers. These factors include: driver age, passenger age, driver sex and passenger sex, and the number of passengers. Each of these factors, while not necessarily independent of each other, is discussed separately for simplicity.

2.3.1 Influence of Driver Age

Using data of all crashes in Ontario, Canada, involving a fatality, personal injury, and property damage exceeding $700, Doherty, Andrey and MacGregor (1998) found that the risk of a crash among 16 to 19 year old drivers was higher than that among drivers aged 20 to 24 years and 25 to 59 years. The detrimental effect of passenger presence on the crash risk of 16 to 19 year old drivers was present for nighttime as well as for daytime driving. However, the effect of carrying passengers while driving at night was five times that for driving during the day while carrying passengers. Doherty, et al. (1998) also found that for drivers aged 20 to 24 years and 25 to 59 years, carrying passengers had a beneficial effect or no effect on their risk of being involved in a crash.

The general finding that the risk of a crash is greater for young drivers carrying passengers relative to older drivers carrying passengers was also apparent in data collected in the US from the 1990 Nationwide Personal Transportation Survey and from the 1988 to 1994 General Estimates Survey. These statistics constitute a probability sample of police-reported crashes on public roads that result in property damage, injury, or death (Williams, 2000b). These data showed that for 16 to 17 year old drivers travelling with one passenger, the rate of crash involvement per 10,000 trips was more than five times that of drivers aged 30 to 59 years, and for 18 to 19 year old drivers, the rate was three times that of 30 to 59 year old drivers.

Reiβ and Krüger (1995) and Vollrath, Reiβ and Krüger (1997), using German crash data, similarly found a detrimental effect on the crash risk of their young drivers, aged 18 to 24 years, in the presence of passengers. For drivers aged 25 to 49 years, and for those aged 50 years and above, the presence of passengers had the opposite effect on crash risk. The crash risk was reduced for the driver travelling with passengers. For these drivers, passengers served a protective role. It appears, therefore, that whether passengers have a beneficial or detrimental effect on driver behaviour, and in turn, safety, will depend on the driver's age.

Preusser, et al. (1998) have also revealed that the effect of passenger presence on the risk of being involved in a crash varies according to driver age. Using data from the United States Fatality Analysis Reporting System (FARS), Preusser, et al. (1998) revealed that the fatal crash risk of drivers aged 16, 17, 18 and 19 years in the presence of passengers was at least twice the risk of a fatal crash than that when driving alone. For drivers aged 60 to 69 and 70 years and above, the risk of being involved in a fatal crash when carrying passengers was reduced relative

to that in the absence of passengers. Further, drivers aged 16 to 24 years were involved in more crashes where they were at fault while carrying one or more passengers than when they were alone. Passenger presence among 25 to 29 year old drivers however, had no effect on the proportion of crashes where they were at fault relative to when they were driving alone, while for drivers aged 30 and above, passenger presence was associated with fewer crashes where the driver was at fault.

Overall, studies investigating the effect of driver age on crash risk in the presence of passengers have shown that the presence of passengers has a detrimental effect on the risk of a casualty crash for young drivers, but either no effect or a beneficial effect for older drivers. However, driver age is not the only factor that has been found to moderate the effect of passenger presence on the crash risk of *young* drivers. Preusser, et al. (1998), in addition, identified the age of the passenger relative to that of the driver as a critical determinant of the magnitude of the passenger effect on young drivers. The effect of passenger age on the crash risk of young drivers carrying passengers is discussed further in the following section.

2.3.2 Influence of Passenger Age

In Preusser, et al.'s (1998) study, the reported risk of young drivers' (16 to 19 years) involvement in a fatal crash when carrying passengers compared with driving alone, was said to be elevated further when the passengers were teenagers also, and in particular, when more than one teenage passenger was present. Aldridge, Himmler, Aultman-Hall and Stamiatiadis (1999) examined further whether the relative age of the driver and passenger influenced the crash risk of young drivers (16 to 20 years) carrying passengers. This was achieved by comparing three different occupant combinations: first, where all passengers in the vehicle were peers (12 to 24 years) of the young driver; second, where there was at least one adult or child passenger, and third, where the driver was unaccompanied. It was found that young drivers have the lowest crash risk for single vehicle crashes when carrying an adult or child as a passenger, and the greatest risk when transporting their peers as passengers.

Chen, Baker, Braver and Li (2000) reported similar outcomes with respect to passenger age. The risk of fatal crash involvement for 16 and 17 year old drivers was elevated when they were accompanied by passengers aged 13 to 19 years or 20 to 29 years. In contrast, carrying passengers aged 30 years or above had no impact on the fatal crash risk of 16 and 17 year old drivers. It appears therefore, that within the young driver age group at least, the age of the passenger relative to that of the driver determines whether drivers accompanied by passengers have an elevated or reduced risk of crash involvement. Chen, et al. (2000) identified driver sex and passenger sex as additional determinants of the effect of passenger presence on the crash risk of young drivers aged 16 to 17 years. The effect of driver sex and passenger sex on the effect of passenger presence on driver crash risk is addressed further in the following section.

2.3.3 Influence of Driver Sex and Passenger Sex

Chen, et al. (2000) found in general, that male 16 and 17 year old drivers had a higher risk of a fatal crash than female 16 and 17 year old drivers. Carrying passengers increased this risk for both the young male and the young female drivers, although this increase was greater for the male drivers. Doherty, et al. (1998) similarly found that the fatal crash risk of 16 to 19 year old male drivers while accompanied by passengers was greater than that of 16 to 19 year old female drivers while carrying passengers. The fatal crash risk of 20 to 24 year old male drivers, 20 to 24 year old female drivers, and 25 to 59 year old male drivers was effectively no different

in the presence of passengers than in the absence of passengers. For female drivers aged 25 to 59 years however, passengers had a beneficial effect since the fatal crash risk was reduced in the presence of passengers relative to that when no passengers were present.

In terms of passenger sex, Chen, et al. (2000) found that the 16 to 17 year old drivers in their study, regardless of their sex, were more likely to be involved in a fatal crash in the presence of only male passengers than in the presence of only female passengers. The relative risk of a crash resulting in a driver death was greater nevertheless, for 16 to 17 year old male drivers only carrying one male passenger than for 16 to 17 year old female drivers only accompanied by one male passenger. For male drivers there was no increased risk with one female passenger relative to travelling alone, while for female drivers the risk was increased slightly when transporting one female passenger relative to no passengers. In the case of only carrying female passengers, therefore, the crash risk of young female drivers was greater than that of young male drivers. These results indicate that the driver-passenger combination with the highest risk is a young male driver accompanied by a male passenger and the combination with the lowest risk is a young male driver carrying a female passenger.

To summarise the findings of these epidemiological studies, it appears that the direction and magnitude of the effect of passenger presence on driver crash risk depends at least on the driver's age, the sex of the driver and the sex of the passenger, and for young drivers at least, the age of the passenger. Essentially, these studies have converged on the finding that certain driver-passenger combinations increase the risk of crash involvement while other combinations have either no effect or reduce the risk. In general, younger drivers carrying their peers as passengers were shown to have an elevated crash risk, while the crash risk of older drivers in general was reduced in the presence of passengers. In turn, younger male drivers were found to have a greater crash propensity in the presence of passengers than young female drivers, and it was revealed that male passengers place young drivers, male and female, at a greater risk of a crash than female passengers. Another factor that has been found to influence the magnitude of the effect of passenger presence on young driver crash risk is the number of passengers. This is addressed in greater detail in the following section.

2.3.4 Influence of the Number of Passengers

As mentioned earlier, much epidemiological research has found that the crash risk of young drivers increases further with each additional passenger that is present in the vehicle. For instance, Doherty, et al. (1998) reported that the crash risk of 16 to 19 year old drivers relative to the other two driver age groups examined, 20 to 24 year olds and 25 to 59 year olds, was higher for those who were accompanied by two or more passengers than for those carrying a single passenger. This in turn was greater than for those drivers travelling alone. For example, the risk of young drivers being involved in a fatal crash when carrying one passenger was approximately twice that of travelling alone, and in the presence of at least two passengers was more than five times that of driving alone. Similarly, using data from the 1990 Nationwide Personal Transportation Survey and from the 1988 to 1994 General Estimates Survey, Williams (2000b) reported that the rate of crash involvement increased with each additional passenger for the 16 to 17 year old drivers and 18 to 19 year old drivers surveyed, particularly for the 16 to 17 year old drivers. While the rate of crash involvement for drivers aged 30 to 59 years decreased in the presence of passengers, this rate did not effectively decrease further with each additional passenger.

The increasingly detrimental effect of additional passengers on the crash risk of young drivers, and the beneficial effect of passengers for older drivers regardless of the number of passengers was also found by Reiβ and Krüger (1995) and Vollrath, et al. (1997) using German data.

Aldridge, et al. (1999) however, found that the increasing crash risk of young drivers aged 16 to 20 years with each additional passenger was restricted to the cases where the passengers were peers (12 to 24 years) of the driver. When travelling with an adult or child the crash risk of young drivers was found to decrease with the number of passengers. In addition, Chen, et al. (2000) found that the fatal crash risk of 16 and 17 year old drivers increased with the number of male passengers for both male drivers and female drivers. However, while the fatal crash risk of young male drivers increased from the case of carrying a single female passenger to carrying two or more female passengers, the fatal crash risk of young female drivers did not. Rather, the fatal crash risk of young female drivers while carrying two or more female passengers was reduced slightly from that of the single female passenger case. In summary, it appears, that whether additional passengers will result in an increase in crash risk depends on driver age, passenger age, and driver sex and passenger sex. For older drivers, passengers have a protective influence regardless of the number of passengers. The fatal crash risk of young drivers appears to increase with additional passengers only if the passengers are peers of the young driver. The crash risk of young drivers, male and female, also increases with each additional male passenger. However, for young drivers, the beneficial effect of two or more female passengers appears to apply to females only.

Overall, the outcomes of these epidemiological studies provide ample evidence that the presence of passengers has important consequences on both driver and passenger safety. It is important to note that a possible factor contributing to an elevated crash risk in the presence of passengers is that higher vehicle occupancy increases the likelihood that a crash will result in a casualty since the population at risk is increased. However, the data reported by Chen, et al. (2000) are independent of such an effect since the data were derived from statistics on the *driver* fatality rates per 10,000,000 trips rather than from statistics on fatalities among all vehicle occupants. It appears rather, that the effects of passengers on driver crash risk are likely to be mediated through passengers' influence on driver behaviour. The possible mechanisms underlying this influence along with the driver behaviours that manifest as a result, are discussed in the following section.

2.4 Behavioural Mechanisms underlying the Effect of Passengers on Driver Behaviour

2.4.1 Distraction as a Mechanism underlying the Passenger Effect

The behavioural mechanisms that underlie the influence of passengers on driver behaviour are not well understood. At a first approximation, passengers may be seen as a distraction. This may have either negative or positive implications on safety. Passengers may distract the driver such that the attention allocated to the driving task is reduced relative to when no passengers are present. With less attention on driving, the driver becomes less cautious, and safety is compromised as a consequence. Alternatively, the driver might compensate for their loss of attention when carrying passengers by driving more carefully. Reiβ and Krüger (1995) demonstrated this distinction with a driving simulation task. The simulator that was used in this task comprised a front seat, the steering wheel and all pedals of a real car. The simulation was presented via a computer screen, which depicted a road. A car icon on the computer screen could be manipulated with regard to both speed and direction. Participants were asked to follow this car icon as quickly and as safely as they could, while reacting accordingly (i.e. decelerating or braking) to obstacles that suddenly appeared in the car's path. Participants

drove in three different situations: foggy, peripherally warned barriers, and freeway, and under four different conditions: alone, with a silent passenger, with a talking passenger, and while talking on the car phone with another person. Performance was measured in terms of both speed and crash risk. In general, the foggy situation led to slow driving and a lower crash risk. Peripherally warned barriers were associated with relatively moderate speed and a relatively high crash risk. The freeway situation resulted in relatively high speed and relatively medium chance of a crash occurring. The presence or absence of a passenger in general, had no influence on driving performance. There was, however, a difference in driving performance between the speaking and non-speaking cases. This difference was largest in the freeway-driving situation and smallest in the foggy-driving situation, and it was the result of a reduction in speed in the speaking condition. The likelihood of a crash occurring due to speaking increased in the foggy situation characterised by low speeds and minimal speed adjustment due to speaking, remained unchanged in the peripherally warned barriers case, and decreased in the freeway situation characterised by high speeds and relatively large speed adaptation due to speaking. Reiβ and Krüger (1995) concluded that verbal interaction introduces an extra strain on the driver. In order to compensate for the reduced attention available to the driving task, drivers must reduce the difficulty of the driving task by slowing down whenever possible. This had a positive effect on safety, reflected in a reduced crash risk as evidenced in the freeway situation. Although, in difficult driving situations linked with low speed, such as fog, compensation through a further decrease in speed is not possible. Under such circumstances, increased task demands due to speaking gave rise to an elevated crash risk.

Reiβ and Krüger (1995), however, did not incorporate into their design any of the factors, such as driver age, that were found in the epidemiological studies to influence the crash risk of drivers accompanied by passengers. If reduced attention available for the driving task due to distraction were the sole influence of passengers on driver behaviour then any change to the crash risk when drivers are accompanied by passengers would be uniform across all groups of drivers regardless of their age and sex, and regardless of the relative age and sex of their passengers. Indeed, as discussed in the following section, the social influence of passengers on driver behaviour has been identified to be a critical determinant of the passenger effect.

2.4.2 The Passenger Effect as a Product of the Social Context of Driving

There are a number of studies supporting the theory that drivers carrying passengers will adjust their behaviour to match the perceived behavioural expectations of their passengers. Baxter, Manstead, Stradling, Campbell, Reason and Parker (1990) suggest that this effect is a consequence of drivers thinking of their passengers as representative of particular societal norms of appropriate driving behaviours. Baxter, et al. (1990) observed that drivers carrying older females as passengers drove more slowly than drivers travelling alone or drivers with younger passengers of either sex, while there was a tendency for younger males to drive at excessive speeds in the presence of young male passengers. The salient norm that young male passengers represent, therefore, may be that appropriate driving practices involve being able to drive fast and to control the car at high speeds in a variety of conditions. In contrast, perceived disapproval of speeding among older females may characterise the salient norm for this group of passengers.

It is now well recognised that a thorough understanding of driver behaviour requires an investigation of the social context of driving. The influence of the presence of passengers, and their characteristics and behaviour in relation to the driver, is central to meeting this goal. For example, Weiβrodt (1989, cited in Catchpole, 1997) observed that young drivers are more

attentive and cautious when carrying older passengers, but drive faster and are distracted more easily when carrying their peers as passengers. Such distraction might result from greater verbal interaction between the young driver and their peers, music playing and possibly physical interactions (Williams, 2000b). In another observational study, McKenna, Waylen and Burkes (1998) investigated the effect of the presence of peers as passengers on young drivers less than 25 years of age. The aim was to determine whether there are peer group effects on young driver behaviour in terms of: speed choice, head way distance, and gap acceptance, and whether these effects differ for male and female drivers accompanied by either male passengers or female passengers. In the absence of passengers, young male drivers were reported to drive less safely than young female drivers reflected in the greater speeds and shorter head ways of the young male drivers. Both male and female young drivers, however, drove faster and accepted shorter gaps at junctions when accompanied by young male passengers, suggesting that male peers to young drivers in general, have a negative influence on safety. In the presence of young female passengers, however, young male drivers were observed to drive more safely, opting to drive at slower speeds and with a larger head way. Young female passengers had no impact on the driving behaviour of young female drivers. The findings of McKenna, et al. (1998) are largely consistent with those of Chen, et al. (2000) who compared the relative fatal crash risk across the various male and female driver-passenger combinations. In both studies, young male passengers were found to be the least safe, and young male passengers accompanied by young female passengers were reported to be the most safe.

An understanding of the behavioural mechanisms giving rise to the influence of passengers on driver behaviour might be facilitated by considering them in the context of the factors that have been implicated in the crashes, in general, of both young drivers and elderly drivers. Since these are the groups that are most at risk of a casualty crash, much research has been undertaken to identify the factors that contribute to their elevated crash risk specifically. Young drivers are of particular interest to the passenger issue since passengers appear to have either a positive or negative effect on the behaviour of young drivers depending on the passenger. Consequently, the mechanisms underlying the effect of passengers on young driver behaviour are receiving increasing attention in investigations into the factors influencing young driver crash risk. In contrast, relatively little research has been conducted to determine the motives underlying the effect of passengers accompanying elderly drivers. This is not surprising since passengers pose little threat to safety in light of their reported uniformly protective influence on elderly driver behaviour. It is interesting, nevertheless, to consider the possible motives that have been proposed to give rise to the generalised protective influence of passengers on elderly drivers for the purpose of comparison with the young driver situation.

2.4.3 Behavioural Mechanisms underlying the Elevated Crash Risk of Young Drivers

Several factors, not necessarily independent, are believed to contribute to the elevated crash risk among young drivers. These include: lack of driving experience, inattentiveness to the driving task due to distraction, greater risk taking propensity, and undeveloped hazard perception ability (Jonah, 1986; Finn & Bragg, 1986; Gebers, Romanowicz & McKenzie, 1993; Regan, Triggs & Wallace, 1999; Regan, Triggs & Godley, 2000; Williams, 2000b; Macdonald, 1994; Mayhew, Donelson, Beriness & Simpson, 1986). Much evidence points towards increased risk taking among young drivers as a major contributor to their high crash risk. Speeding violations are highest among drivers under 25 years and decrease with age (Gebers,

et al., 1993). Hence, young drivers take greater risks by driving faster than older drivers. In addition, they may travel with shorter headways, accept smaller gaps in traffic when pulling out from an intersection, and run amber traffic lights more often (Jonah, 1986).

Hazard perception ability is another factor that has received much attention and is generally linked with the young novice driver's lack of driving experience. Young drivers appear to be less likely to detect and respond to hazardous situations as they develop (e.g. Finn & Bragg, 1986; Quimby & Watts, 1981; Tränkle, Gelau & Metker, 1990). Quimby and Watts (1981), for example, revealed that drivers under 25 years took longer to detect potential hazards in a driving simulator task than drivers aged 25 to 54 years. The young drivers however, had the fastest simple reaction time and choice reaction time. Quimby and Watts (1981) concluded that the young driver's slower perception of hazards was the result of their failure to recognise the situations as hazardous. This may further elevate their propensity to take risks (Jonah, 1986).

2.4.4 Behavioural Mechanisms underlying the Effects of Passengers on Young Drivers

In the presence of passengers the young driver's risk taking propensity might be affected in different ways depending on their passenger, as might their ability to sufficiently attend to the driving task, in turn, affecting their ability to recognise and respond to potentially hazardous situations. This will influence the driver's behaviour, and consequently, their risk of being involved in a crash. For example, young drivers carrying their peers as passengers might engage in riskier driving practices, such as speeding and tailgating. This might be in response to perceived expectations of what their peers consider to be appropriate driving behaviour and/or inducements to take particular risks as explicitly stated by their peers. Further, young drivers might be more prone to distraction as a result of the social interaction among peers (Williams, 2000b). Coupled with the young driver's inexperience, this means that the young driver is not in the best position to deal with hazardous situations as they arise. The cost for the young driver carrying their peers as passengers is an elevated crash risk.

Elderly drivers, in contrast, are more likely to avoid driving situations they consider to be dangerous, and tend to drive more conservatively. Much of the increased risk of a crash among elderly drivers is unlikely due to risk taking, but to declines in perceptual/cognitive abilities and physical function that are a natural consequence of aging (Gebers, et al., 1993; Kanouse, 1988; McGwin & Brown, 1999). For example, with declining information processing skill, the elderly driver's ability to perceive and react to hazardous situations is compromised. Like young drivers, Quimby and Watts (1981) found that elderly drivers (55 years and above) took longer to respond to potential hazards in the simulator than did the middle-aged drivers. Passengers travelling with elderly drivers might be conscious of their driver's declining abilities, and as a consequence might pay more attention to the driving environment by scanning for potential hazards. Passengers, therefore, might assist older drivers in recognising and responding to potential hazards or in remaining focussed on the driving task (Preusser, et al., 1998). This would give rise to the general protective effect of passengers on elderly drivers reflected in the reduced crash risk in the presence of passengers. However, this explanation treats passengers as one generic group. Children, or perhaps even inexperienced drivers, might not be able to assist the elderly driver with tasks requiring skills that develop with driving experience. Under such circumstances, therefore, the beneficial effect of passengers on elderly drivers might be due to more cautious driving in response to increased sense of responsibility.

Rolls, Hall, Ingham & McDonald (1991) used interviews and questionnaires to examine the nature of the interaction between drivers and passengers, and the impact of this interaction on the behaviour of young drivers to influence their crash risk. The responses of young drivers (17 and 20 years, and 21 to 25 years) were compared with those of middle-aged drivers (31 to 40 years). Drivers were asked to assess whether having passengers in the car affected their driving behaviour. The 17 to 20 year old male drivers reported the greatest effect of passengers. Responses were examined further to determine whether different types of passenger have a different effect on the driver's behaviour. In accordance with the findings of several epidemiological studies and observational studies, passengers were found to affect the driver's behaviour in different ways depending on their age and sex relative to the driver. However, Rolls, et al. (1991) demonstrated that it is not simply the age and sex of the passenger relative to the driver in isolation that is critical, but their social standing relative to one another as reflected in their relationship (e.g. partner/spouse, child). Four types of passenger were identified as having the greatest impact on driving behaviour: friends/peers, children, partner/spouse or boyfriend/girlfriend, and parents. In general, with the exception of the 17 to 20 year old female drivers, friends/peers were more of a negative influence on driver behaviour. This effect was greatest for 17 to 20 year old male drivers, presumably a response to pressure from peers to engage in more dangerous and risky styles of driving. All groups, with the exception of the 21 to 25 year old females, reported that carrying children as passengers was more likely to result in safer driving practices. This was felt to be a consequence of a greater sense of responsibility when carrying children. Alternatively, in anticipation that children might be a distraction, drivers might compensate for the reduced attention available for driving by driving slower. However, depending on how effective this strategy is, distraction by children may have adverse consequences on driving safety. With the exception of the older females, the driver's behaviour improved in the presence of their partner/spouse or boyfriend/girlfriend, particularly for male drivers. In general, carrying parents as passengers had a beneficial effect on driving behaviour. The younger drivers reported that this effect was a consequence of wanting to demonstrate to their parents that they are careful and responsible drivers, while the older drivers reported that they were more cautious with their parents in the car also because their parents were old or in poor health.

Rolls and Ingham (1992) probed further into the motives underlying young male driver's behaviour in the presence of different types of passengers. Male drivers aged 17 to 25 years were interviewed on a range of topics including whether the presence of passengers influenced their driving behaviour. Passenger presence was found to have an impact on the driving behaviour of 90% of the drivers. Some felt an increased responsibility when others are in the car also, driving more carefully as a consequence since more lives are potentially at risk, while other drivers felt that passengers expected them to drive in a particular way, and so adjusted their driving behaviour to match the perceived expectations of their passenger. Consistent with Rolls, et al. (1991), carrying parents as passengers was reported to lead to more careful driving practices, such as slower driving, because the young drivers wished to convey to their parents that they are safe and responsible drivers. In general, the presence of male peers had the opposite effect on safety, with male passengers encouraging their driver to drive faster. When accompanied by their girlfriend, however, some drivers reported that they drive less safely to show off, while others commented that their girlfriend encourages them to drive slower.

More recently, Catchpole (1997) examined the characteristics of crashes involving young drivers carrying passengers, demonstrating that motivational factors as opposed to perceptual/cognitive factors were implicated in the majority of crashes. It was found that, for young drivers in single-vehicle crashes the proportion for whom motivational factors were

responsible was almost four times higher when passengers were carried than when they were not, and five times higher when more than one passenger was present than when no passengers were present. In contrast, there was little difference in the number of perceptual/cognitive factors implicated in the crashes of young drivers accompanied by passengers. It appears, therefore, that the elevated crash risk associated with young drivers carrying passengers might be best attributed to increased risk-taking by drivers, rather than due to the increase in the driver's mental workload in the presence of passengers. Further, Catchpole (1997) examined the occurrence of young driver crashes attributed to motivational factors according to the relationship between the driver and passengers. Passengers were defined as either the driver's partner/family members, or friends. Motivational factors were reported to be twice as prevalent when the passengers were friends of the driver than when they were the driver's partner/family members. Motivational factors were significantly more common when passengers were friends of the driver than when there were no passengers; however, while motivational factors were also implicated more often when passengers were the driver's partner/family members compared with when there were no passengers, this difference was not significant. Catchpole (1997) concluded, therefore, that friends as passengers have a greater tendency to induce risk-taking among young drivers.

In summary, the outcomes of the studies investigating the nature of the passenger effect on young drivers indicate that friends or peers as passengers are generally a negative influence on the behaviour of the young driver, particularly the young male driver, thus compromising safety. This appears to be primarily due to an increase in risky and dangerous driving practices in response to peer pressure. Although, inattentiveness to the driving task due to distraction for example, by friends talking in the back seat, is also likely. On the other hand, children, the driver's partner/spouse, or parents as passengers generally promote safer driving practices through the young driver's increased sense of responsibility or respect for someone's life. These outcomes imply that the mere physical presence of the passenger is sufficient to induce either a positive or negative change in the behaviour of the young driver. However, more explicit strategies might also be at play. For example, the young driver might be told by their young passenger to take risks such as going faster. Further, it is thought that the protective influence of passengers on elderly drivers might be a consequence of the passenger explicitly warning the driver about approaching potential hazards. Nevertheless, from the studies that were reviewed, what was clear was that passengers influence driver behaviour in some way, which has implications for the safety of the driver and passengers alike. A question which remains to be addressed is: can a role for passengers form the basis of countermeasure strategies designed to enhance the safety of both the driver and passengers, and in turn, decrease the incidence of fatal and serious injury crashes? As discussed in the following section, work in this area is still in its infancy. There are three initiatives known to the authors that concern passengers: passenger restrictions in Graduated Licensing Systems; the Norwegian "Speak Out!" campaign, and the Transport Accident Commission of Victoria's (TAC) "If you don't trust the driver, don't get in" campaign. These have been aimed specifically at young novice drivers and teenage passengers.

2.5 Initiatives Targeting Young Novice Drivers and Teenage Passengers

Little work has been undertaken investigating whether passengers can be persuaded to actively intervene to positively influence the behaviour of the driver to enhance safety, and how this could be achieved. In the case of young drivers much focus has been on imposing restrictions on carrying passengers as part of Graduated Licensing Systems. Other developments in the

area come from the Norwegian "Speak Out" campaign that assigns an active role to young passengers to speak out to their young drivers in the event of unsafe driving. A third campaign, the TAC's "If you don't trust the driver, don't get in" campaign, was designed primarily to appeal to young passengers to consider the potential negative effect on their safety of travelling with a driver whom they do not trust. Despite using different approaches, the ultimate objective of these programs is the same. It is to reduce the number of fatal and serious injury crashes among young novice drivers and teenage passengers. In the following sections, passenger restrictions in Graduated Licensing Systems, the "Speak Out" campaign and the TAC's "If you don't trust the driver, don't get in" campaign are described separately.

2.5.1 Passenger Restrictions in Graduated Licensing Systems

Graduated Licensing is a strategy which phases in young novice drivers' full driving privileges over time – generally over one or two years. This approach is designed to ensure that young novice drivers mature and obtain necessary driving skills under conditions of low risk before graduating to more demanding driving conditions (Ferguson & Williams, 1996; Foss, 2000, Insurance Institute for Highway Safety & Traffic Injury Research Foundation, 1999; Mayhew, 2000; Williams, 1999, 2000a, b; Williams, Preusser, Ulmer & Weinstein, 1995).

The ideal Graduated Licensing System comprises three stages. The first is a learner's period during which the novice driver is supervised at all times by an adult who is a fully licensed driver. The second period is an intermediate licence stage that restricts the young novice driver from driving unsupervised under high risk conditions, such as at night and with teenage passengers. The third stage is characterised by full driving privileges (Ferguson & Williams, 1996; Foss, 2000, Insurance Institute for Highway Safety & Traffic Injury Research Foundation, 1999; Mayhew, 2000; Williams, 1999, 2000a, b; Williams, et al., 1995). It is envisaged that Graduated Licensing will lead to a reduction in the number of fatal and serious injury crashes among young drivers (Mayhew, 2000; Williams, 2000a).

As of November 2000, Graduated Licensing was operating in New Zealand, Ontario and Nova Scotia in Canada, and in 32 US jurisdictions. There is much variability across jurisdictions, however. For example, there is variation in terms of the length of each of the first two stages, whether graduated licensing applies to all new drivers or just to those who are young also, and whether both night driving restrictions and passenger restrictions are imposed during the intermediate licence stage and for how long. While the effectiveness of Graduated Licensing in reducing casualty crashes rests on the complete package, it is primarily contingent upon the type and quality of the restrictions imposed (Insurance Institute for Highway Safety, 2001; Mayhew, 2000; Williams, 2000a)

Of interest in the current study is the effectiveness of Graduated Licensing Systems that include passenger restrictions as a condition of the initial license. As of November 2000, New Zealand and 15 US states had passenger restrictions (Williams, 2000b). However, across these jurisdictions, the passenger restrictions vary in terms of the number of passengers permitted, whether the restriction applies to all passengers or to teenagers only, whether family members are exempt, and the duration of the restriction. (Insurance Institute for Highway Safety & Traffic Injury Research Foundation, 1999; Williams, 2000a, b).

The effectiveness of passenger restrictions in graduated licensing systems has been assessed in New Zealand where graduated licensing has been operating since 1987. The New Zealand passenger restriction states that no young passengers are permitted unless the young driver is being supervised. A supervisor must be at least 20 years of age, must have held a full licence for at least two years, and must have a current full licence (Begg, Alsop & Langley, 1999).

Begg, et al. (1999) examined the effectiveness of the New Zealand passenger restriction by comparing the number of crashes involving a young driver who was licensed before the introduction of graduated licensing with those involving a young driver who was in the restricted stage of licensure. The cases that were examined were crashes in which a motor vehicle occupant, excluding motorcyclists, was injured and involved a driver aged 15 to 19 years. Begg, et al. (1999) found that, compared with young drivers licensed before the introduction of graduated licensing, drivers in the restricted driving stage had significantly fewer injury crashes involving passengers of all ages.

Further support for the effectiveness of passenger restrictions in graduated licensing systems is growing. California introduced graduated licensing in 1998 and, was the first US jurisdiction to impose a passenger restriction. The Californian passenger restriction prohibits passengers younger than 20 years of age from being carried by a newly licensed young driver. The restriction applies during the first 6 months of a 12 month intermediate licensing phase unless a supervisor is present. The supervisor is a fully licensed driver who is 21 years of age or older (Insurance Institute for Highway Safety & Traffic Injury Research Foundation, 1999; Williams, 2000b). Preliminary results of the effectiveness of the Californian passenger restriction are encouraging. The Automobile Club of Southern California (2000, cited in Williams, 2000b) reported that in 1999, the number of deaths and injuries among teenage passengers travelling with 16 year old drivers had been reduced by 23% compared with the five previous years.

While the evidence of the safety benefits of passenger restrictions and graduated licensing in general has been growing, several concerns have been put forward about passenger restrictions. For example, there has been much concern about the rate of compliance among young drivers and how this might impact on the potential effectiveness of passenger restrictions. In Begg, et al.'s (1999) study approximately 70% of the injured passengers were between 15 and 19 years of age. These passengers were too young to be a supervisor, implying that the restricted license holders were violating the conditions of their license. Moreover, there is concern that as a result of passenger restrictions, teenage passengers will be forced to drive themselves. The increase in young drivers on the road would increase their exposure and potentially lead to a higher rate of crash involvement. However, it has been argued that since there is such a high crash risk among young drivers who carry teenage passengers, even if all passengers aged 16 to 19 years were to comply by driving themselves, there would be an estimated 275 (38%) fewer deaths per year. Hence, while the magnitude of the effect of passenger restrictions is yet to be determined, the expectation is that it will be strongly positive (Williams, 2000a, b). An alternative strategy addressing the negative influence of teenage passengers on young drivers is the Norwegian "Speak Out" campaign. As discussed in the following section, this campaign does not restrict young passengers from travelling with young drivers, but empowers teenage passengers to speak out to their young driver in the event of unsafe driving.

2.5.2 Norwegian "Speak Out" Campaign

To date, only one major campaign known to the authors has been developed and implemented which assigns an active role to the passenger to positively influence driver behaviour in order to enhance driver and passenger safety. The "Speak Out!" campaign, developed by the Norwegian Public Roads Administration, was introduced in 1993 in the County of Sogn og Fjordane, Norway, and is targeted at teenagers aged 16 to 19 years. The campaign has since been launched in other counties of Norway (Ljones, 2000).

The ultimate goal of the campaign is to reduce the number of road crashes among 16 to 19 year old drivers and passengers by encouraging teenage passengers to "speak out" to their teenage drivers about excessive speeding and other unsafe driving practices. According to Ljones (2000), the majority of teenagers are responsible and generally do not practice risky and unsafe behaviour in the driving situation. Hence, it is envisaged that through the campaign, the responsible majority will develop confidence and will not hesitate in promoting safe driving and speaking out against risky driving to their drivers as required.

The "Speak Out!" campaign comprises two components. The first is information/promotion through: a video, t-shirts, packs of playing cards, key rings, and posters with the "Speak Out" slogan printed on them. The video portrays a young driver speeding excessively while carrying teenage passengers. It concludes with a passenger pulling on an emergency brake that symbolises the "Speak Out" message. The video has been shown as a commercial on television and in the cinemas. The Sogn og Fjordane County Roads Office has distributed the t-shirts and other promotional materials, and has shown the video to senior high schools, driving schools, youth clubs and athletic clubs. The second component of the campaign is police enforcement. This is achieved through routine on-road checks by police (Ljones, 2000). There are also several information control points where cars driven by young drivers who are carrying teenage passengers are stopped by police for a routine on-road check and given the option of watching the video and learning more about "Speak Out!" (Hermansen, 2000, Ljones, 2000). In addition, mass media in Sogn og Fjordane, namely radio stations, television and newspapers, have widely and continually covered the campaign (Ljones, 2000).

In 1996, the Norwegian Institute of Technology evaluated "Speak Out!" to ascertain teenagers' views on the campaign. A survey was completed by 866 teenagers aged 16 to 19 years in the County of Sogn og Fjordane. Of this group, 80 to 90 percent stated that the campaign is a serious and effective road safety measure, approximately 65 percent believed that the "Speak Out" message was personally important to them while wearing the t-shirt, and 80 percent of 18 year old female respondents felt that they had become more confident in speaking out to their drivers about excessive speading (Ljones, 2000).

In 1999, the Institute of Transport Economics in Norway evaluated the "Speak Out!" campaign to determine whether it has been effective in reducing the number of killed or injured teenage drivers and passengers in the County of Sogn og Fjordane (Elvik, 2000). It was found that the number of killed or injured teenagers aged 16 to 19 was significantly reduced by 30%, however, there was no change in the number of killed or injured 16 to 19 year old drivers. It was concluded that, while the campaign appears to be achieving its goals, caution must be exercised in definitively concluding that the reduction in killed or injured passengers was entirely the direct result of their speaking out about risky driving with a consequent change in driver behaviour. A similar reduction in driver fatalities and injuries would have been expected if drivers were adopting safer driving behaviours in response to their passenger's intervention. It was suggested that one possible explanation for the presence of a passenger effect in the absence of a driver effect is that passengers ceased to accompany drivers who did not accept and act on their advice to drive safer. Nevertheless, the development of the "Speak Out!" campaign is encouraging, for it shifts the focus of countermeasure strategies from the driver to the passenger by encouraging positive and constructive communication between the passenger and the driver.

The Institute of Transport Economics in Norway has also carried out a cost-benefit analysis of the campaign. Amundsen, Elvik and Fridstrøm (1999) reported that from 1993 to 1998, the campaign has prevented an estimated 30 fatalities and injuries due to road crashes among 16 to 19 year olds, or five per year. The benefit to safety was valued at approximately 33.6 million NOK

(1 NOK = approximately 0.14 US Dollars). The costs of the campaign are approximated at two million NOK by the Norwegian Public Roads Administration. It was concluded therefore, that the benefits of the "Speak Out!" campaign greatly exceed the costs.

2.5.3 TAC "If you don't trust the driver, don't get in" campaign

The TAC in Melbourne, Australia has also run a campaign appealing to young passengers and drivers. The campaign slogan was "If you don't trust the driver, don't get in". It comprised a television advertisement that aired in Victoria three or four times for two-week periods between August 1997 and May 1999 (R. Thiele, personal communication, March 9, 2001). The advertisement shows a female in her late teens or early twenties who, after winning a basket ball game and celebrating with a few drinks, must make a decision about whether to get into a car with a young male driver who has a reputation of being an irresponsible driver. The young male occupants in the vehicle encourage her to travel with them, as does a girlfriend who informs her that they are only ten minutes away from their destination. While reluctant to travel with the driver who she perceives to be irresponsible, she succumbs to the peer pressure and gets in to the car. The next scene shows the car out of control and then hitting a pole. The young woman is then shown in three months time in a hospital bed with her friends and family around her. She is shown again five years after the crash talking about brain injury and that the worst thing about it was losing all of her friends, and again twenty years after the crash talking about what it would be like if she had only said no. The advertisement ends with the campaign slogan.

The purpose of the TAC campaign was to make young passengers aware that they have a choice about whether to travel with drivers whom they perceive to be irresponsible drivers. In making such a decision, young passengers need to think about the consequences of travelling with a driver who takes unnecessary risks. The advertisement was intended to appeal to young passengers not to succumb to peer pressure and not to get in to a car with a driver whose judgement or responsibility they question. It was also designed to make young drivers think twice before they engage in risky driving behaviours since they might have to live with the consequences of killing or injuring one or more of their passengers (TAC, 1997). Market research showed that the campaign was effective in targeting younger males and younger females up to 30 years of age, with these groups finding the advertisement relevant. There was some concern, however, that a large proportion of the targeted audience perceived the advertisement to be part of a campaign against drink driving rather than a campaign designed primarily to prevent young passengers from travelling with drivers that they do not trust (R. Thiele, personal communication, March 9, 2001).

Overall, in response to the greater recognition of the influence of passengers on driver behaviour, there appears to be a trend towards a more central role of passengers in strategies designed to promote safety on the road. Reports on the effectiveness of such strategies, provide evidence of feasibility also. This is important in the current context, since it provides some justification on practical grounds for undertaking the present study that is to culminate in the development of countermeasures strategies that are designed to enhance both driver and passenger safety.

This chapter presented a review of the literature to date, on the interaction between passengers and drivers. The outcomes of both the epidemiological and behavioural studies illustrated that the age of the driver, and the sex of the driver relative to the sex of the passenger, are critical determinants of whether passengers have a positive or negative influence on driver behaviour and therefore, driver and passenger safety. For young drivers at

least, the age of the passenger and the relationship between the driver and the passenger have also been found to affect the behaviour of young drivers. The number of passengers was also found to be an important moderating influence of the effect of passengers on young drivers. It appears therefore, that there are several factors that need to be considered when examining the influence of passengers on driver behaviour. In the following chapter, data pertaining to fatally and seriously injured passengers in crashes that occurred in the ACT over the past five years are examined as the first step into researching the influence of passengers on drivers.

Chapter 3 Summary of ACT Crash Data of Passenger Presence in Crashes

3.1 Introduction

Data pertaining to both fatal and serious injury crashes involving passengers in the ACT during the years 1995 to 1999 were accessed and summarised. These data are presented in this section of the report. The objective of this exercise was to gain some insight into the characteristics of the crashes involving passengers in the ACT. It was not intended to be a large-scale statistical analysis, but rather, a summary of the relevant crash data that is available for the ACT regarding passengers in crashes. Indeed, since no suitable exposure data are available for the ACT, it was not possible to determine estimates of crash risk to identify, for example, combinations of drivers and passengers that appear to be most at risk of a casualty crash. Consequently, any observations drawn from the available crash data should be viewed only as exploratory for the sole purpose of developing an understanding into crashes involving passengers in the ACT for the current study.

3.2 Method

The ACT Department of Urban Services provided the relevant crash data for this study. These data were extracted from databases of police reports for all traffic crashes. All traffic crashes in the ACT must be reported to the police regardless of the amount of property damage or injury severity, and within 24 hours of the crash occurring. While the police only attend crashes involving fatalities, injuries, or requiring towing of damaged vehicles, all remaining crashes are reported in person to any of the police stations in the ACT (ACT Roads and Stormwater Asset Systems and IT Strategy Unit, 1999).

The information that was provided comprised data on casualty crashes (i.e. crashes involving fatalities and/or injuries) in the ACT from 1995 to 1999. These data were presented in two MS Excel spreadsheets. The first spreadsheet comprised data on each casualty crash from 1 January 1995 to 15 June 1999 in terms of: the number of vehicles involved in the crash, and the number of occupants in each vehicle. The second spreadsheet consisted of data from 1 January 1995 to 31 December 1999 for each casualty in a crash, including: the position in the vehicle of the killed or injured occupant (e.g. driver, front left passenger, rear right passenger, rear left passenger); the age and sex of the killed or injured occupant; and, the casualty severity class (fatality, injury-admitted to hospital, injury-received medical treatment). Unfortunately, information about the age and sex of uninjured occupants in the vehicle is not recorded. Consequently, it was not possible to determine the proportions of crashes involving particular combinations of driver and passenger (e.g. 16 year old male driver carrying a 16 year old male passenger) unless both the driver and at least one passenger in the same vehicle were injured.

The data used in this study consisted of crashes in which there was at least one casualty in at least one vehicle. Only casualties involving passenger vehicles (cars, station wagons, vans, and utilities) were considered. Casualties involving motorcycles, trucks, buses, or tractor/plant equipment were excluded, as were those involving bicycles or pedestrians. Further, since

much of the data collation required reference to information in both spreadsheets, for consistency and clarity, data up until and including 15 June 1999 were considered only.

3.3 Results and Discussion

From 1 January 1995 to 15 June 1999, there were 2,337 casualty crashes in the ACT. Table 3.1 shows the number of drivers and passengers who received medical treatment, were admitted to hospital, or died in these crashes. Overall, there were 2,432 casualties. For both drivers and passengers, the most common type of casualty involved receiving medical treatment, and the least common were fatalities. Drivers comprised 64.7% of the casualties overall, and passengers comprised the remaining third. This pattern of casualty distribution between drivers and passengers applied within each casualty severity class, and in general, within each year also.

Table 3.1 Number of drivers and passengers who were killed or injured as a function of year and casualty severity class

	Received medical treatment		Admitted to hospital		Fatal	
Year	Driver	Passenger	Driver	Passenger	Driver	Passenger
1995	234	121	66	37	4	2
1996	242	122	104	55	8	9
1997	242	144	91	53	7	1
1998	287	177	89	44	9	5
1999[a]	148	66	38	20	5	2
Total	1153	630	388	209	33	19

[a] Up until and including 15 June 1999

The data presented in Table 1 confirm that passengers comprise a fair proportion of the occupants of passenger vehicles who are either killed or seriously injured in the ACT per annum. Even though the majority of casualties were for drivers, it is important to note that these data were taken from crashes where there were no passengers present in a vehicle as well as from those where passengers were present in a vehicle. The passenger casualties however, were extracted from cases where at least one passenger was present in at least one vehicle. These were made up of only 39.2% of the total crashes. The remaining 60.8% of crashes consisted of those where there were no passengers present in any of the vehicles involved in the crash, in addition to those where it was unknown whether any passengers were in any of the vehicles. Consequently, these crashes were not considered any further, leaving only those crashes in which there was at least one casualty and in which at least one vehicle was carrying at least one passenger. The number of driver and passenger casualties for these crashes is summarised in Table 3.2 as a function of year and casualty class severity. The only possible difference with Table 3.1 is in the number of driver casualties.

Table 3.2 Number of drivers and passengers who were killed or injured in a crash in which there was at least one casualty and in which at least one vehicle was carrying at least one passenger as a function of year and casualty severity class

	Received medical treatment		Admitted to hospital		Fatal	
Year	Driver	Passenger	Driver	Passenger	Driver	Passenger
1995	125	121	37	37	0	2
1996	125	122	58	55	4	9
1997	124	144	40	53	3	1
1998	150	177	45	44	4	5
1999[a]	48	66	20	20	2	2
Total	572	630	200	209	13	19

[a] Up until and including 15 June 1999

From Table 3.2 it can be seen that the number of driver casualties is much reduced relative to those in Table 3.1, with the proportion of passenger casualties (52.2%) similar to the proportion of driver casualties (47.8%) for crashes where there was at least one passenger present in at least one of the vehicles involved in the crash. In total there were 1,640 crashes of this type. In turn, 19.9% of this subset of crashes were single-vehicle crashes, and the majority (80.1%) involved more than one vehicle. This is reflected in the data presented in Table 3.3 since, with the exception of fatalities, the numbers of driver and passenger casualties are much higher for multiple-vehicle than single-vehicle crashes. Moreover, with more vehicles in a crash there are more occupants across the vehicles combined that potentially could be injured. Even within a single vehicle the opportunity for personal injury increases with the number of occupants. In 21.7% of multiple-vehicle crashes, there was at least one passenger present in each vehicle. In 53.3% single-vehicle crashes, only one passenger was present in the vehicle, and in 40.1% there were two or more passengers. In the remaining 6.6% of single-vehicle crashes, the number of passengers was unknown. At this point it is worthwhile re-emphasising that interpretation of these data are limited in the absence of any travel exposure data. For example, while a greater proportion of single-vehicle crashes occurred when drivers carried one passenger only than when they were accompanied by at least two passengers, this finding cannot be interpreted as suggesting that the presence of more than one passenger is associated with reduced risk of a crash, since it is not known how often or how far drivers travel with one passenger relative to more than one passenger in the ACT.

Table 3.3 Number of drivers and passengers who were injured or killed in a crash in which there was at least one casualty and in which at least one vehicle was carrying at least one passenger as a function of casualty severity class and crash type

	Received medical treatment		Admitted to hospital		Fatal	
Crash type	Driver	Passenger	Driver	Passenger	Driver	Passenger
Single-vehicle	79	136	40	72	5	10
Multiple-vehicle	493	494	160	137	8	9

Since the majority of the multiple-vehicle crashes included cases where there may have been a single occupant (i.e. the driver) in a vehicle, and two or more occupants in the remaining vehicles, in crashes of this type where only one driver was injured, it cannot be ascertained whether it was the injured or an uninjured driver who carried the passengers. Even if there were at least one passenger present in each vehicle, and a driver and a passenger were injured or killed, it cannot be determined whether both casualties were in the same vehicle or in separate vehicles. This ambiguity however, does not exist for the single-vehicle crashes, since the cases where no passengers were present had already been excluded. Subsequent examination of driver casualties is restricted, therefore, to single-vehicle crashes.

Table 3.4 Number of drivers who were killed or injured in a single-vehicle crash as a function of casualty severity class, age and sex

	Received medical treatment		Admitted to hospital		Fatal	
Age (years)	Male	Female	Male	Female	Male	Female
16 to 24	19	16	17	4	2	0
25 to 34	14	11	6	4	2	0
35 to 44	2	6	1	2	1	0
45 to 54	2	2	2	0	0	0
55 to 64	0	0	1	0	0	0
65 & above	1	1	1	0	0	0
Uk	5	0	2	0	0	0
Total	43	36	30	10	5	0

Note Uk = unknown

Table 3.4 shows the number of driver casualties as a function of the driver's age, their sex, and the severity of their casualty for single-vehicle crashes only, that is, for crashes where it could be clearly distinguished that the driver of the vehicle was accompanied by passengers. Overall, there were more male driver casualties (62.9%) than female driver casualties (37.1%). This pattern was consistent for each casualty severity class, overall. The most driver casualties were

among the 16 to 24 year olds (46.8%), and in turn, the 25 to 34 year olds (29.8%). The fewest driver casualties occurred among the 55 to 64 year olds (0.8%).

Table 3.5 Number of passengers who were killed or injured in a crash as a function of crash type, casualty severity class, age and sex

	Received medical treatment			Admitted to hospital			Fatal	
Age (years)	Male	Female	Uk	Male	Female	Uk	Male	Female
				Single-vehicle crashes				
15 & under	7	17	0	6	5	0	0	4
16 to 24	39	21	0	18	15	0	3	0
25 to 34	8	5	0	2	1	0	1	0
35 to 44	5	2	0	2	3	0	0	0
45 to 54	3	2	0	1	1	0	0	1
55 to 64	0	3	0	0	0	0	0	1
65 & above	1	0	0	0	1	0	0	0
Uk	14	8	1	9	7	1	0	0
Total	77	58	1	38	33	1	4	6
				Multiple-vehicle crashes				
15 & under	47	50	0	17	10	0	0	1
16 to 17	25	76	0	18	14	0	2	1
25 to 34	16	37	0	5	12	0	0	1
35 to 44	17	31	0	2	4	0	0	0
45 to 54	10	24	1	1	3	0	0	0
55 to 64	4	22	0	3	11	1	0	0
65 & above	5	28	0	3	18	0	0	4
Uk	34	61	6	8	6	1	0	0
Total	158	329	7	57	78	2	2	7

Note Uk = unknown

The number of passenger casualties as a function of the passenger's age, their sex, and the casualty severity is shown in Table 3.5 for single-vehicle and multiple-vehicle crashes separately. In single-vehicle crashes there were more male passenger casualties (54.6%) than female passenger casualties (44.5%) overall. With the exception of the fatalities, this pattern applied across the casualty severity types overall, with some variation within age groups. The pattern was reversed for multiple-vehicle crashes, with more female passenger casualties (64.7%) than male passenger casualties (33.9%) overall, for each casualty severity class overall, and in general, within age groups for each casualty severity class separately. In terms of age,

relative to the other age groups, the greatest proportion of passenger casualties in single-vehicle crashes occurred among the 16 to 24 year olds (44.0%), and in turn, the passengers aged 15 years or under (17.9%). The smallest proportion of passenger casualties in single-vehicle crashes were among the passengers aged 65 years or older (0.9%). Passenger casualties in multiple-vehicle crashes were more evenly distributed across the age groups, although, the largest proportion of casualties again were among passengers aged 16 to 24 years (21.3%), and the smallest among the 55 to 64 year olds (6.1%).

Table 3.6 Number of driver-passenger casualty pairs as a function of the age and sex of the driver relative to the passenger for single-vehicle crashes

		Male driver		Female driver	
Driver age	Passenger age	Male passenger	Female passenger	Male passenger	Female passenger
16 to 24	15 & under	2	0	5	0
	16 to 24	30	11	9	4
	25 to 54	2	0	0	2
	55 & above	0	0	0	2
25 to 54	15 & under	7	7	6	1
	16 to 24	7	1	2	0
	25 to 54	6	3	4	6
	55 & above	0	0	1	0
55 & above	15 & under	0	0	0	0
	16 to 24	0	0	0	0
	25 to 54	0	2	0	0
	55 & above	0	2	0	0
Total		54	26	27	15

In single-vehicle crashes, both driver and passenger casualties were most prevalent among males, and among 16 to 24 year olds. This pattern of more male casualties, applied within casualty severity categories for the 16 to 24 year olds also. While caution must be exercised in drawing any conclusions from this observation in light of the absence of any data on travel exposure by age and sex, it is interesting, nevertheless, that more casualties in the ACT occurred among 16 to 24 year old drivers than any other age group, since young drivers have been identified as the group most at risk of a casualty crash in past epidemiological research, and that the crash risk of young drivers is greatest when young drivers are accompanied by teenage passengers (e.g. Chen, et al., 2000). Hence, it would be interesting and informative to know whether these ACT data, if adjusted for travel exposure, conformed with the findings of past research. While details such as the age and sex of uninjured occupants in casualty crashes is not recorded, it is nevertheless interesting to consider the distribution of casualties as a function of the age and sex of the driver relative to the passenger for single-vehicle crashes where both the driver and a passenger were either killed or injured. These data are shown in

Table 3.6. They were collated from the 43.0% of single-vehicle crashes where both the driver and a passenger were either killed or injured. In terms of the sex of the driver relative to their passenger, the most prevalent type of driver-passenger casualty combination were male drivers who carried male passengers (44.3%), and the least prevalent type were female drivers who were accompanied by female passengers (12.3%). In terms of the age of the driver relative to their passenger, drivers aged 16 to 24 years in the presence of passengers of the same age group were the most prevalent type of driver-passenger casualty combination (44.3%). At the opposite extreme were drivers aged 55 years and older who carried passengers aged 15 years or under, and drivers aged 55 years and older who accompanied passengers aged 16 to 24 years. Moreover, in terms of both the age and sex of the driver relative to their passenger, the main type of driver-passenger casualty combination were male drivers aged 16 to 24 years accompanied by passengers who were also male and also 16 to 24 years of age (24.6%).

In summary, the data presented in this chapter constitute evidence that passengers have figured prominently in ACT casualty crashes. The most casualties were revealed for 16 to 24 year old drivers, 16 to 24 year old passengers, male drivers, male passengers in single-vehicle crashes, and female passengers in multiple-vehicle crashes. Moreover, at least for single-vehicle crashes where both the driver and passenger were either killed or injured, the most prevalent type of combination of driver and passenger killed or seriously injured was that of male 16 to 24 year old drivers with male 16 to 24 year old passengers. It is important to keep in mind however, that in the absence of relevant travel exposure data, caution must be exercised in drawing conclusions on which groups of drivers and passengers are most at risk of a casualty crash in the ACT. The outcomes of the exercise presented in this chapter are interesting nevertheless, since they concur with past epidemiological research that identified or targeted young male drivers accompanied by male passengers as the group with the highest crash risk. The next phase of this study proposed to examine the issue of the type of communication that exists between drivers and passengers to understand further what gives rise to the varied crash involvement among groups of drivers and passengers. This was done by means of a telephone survey, the method and outcomes of which are presented in the following chapter.

Chapter 4 Telephone Survey of Current Passenger Roles

4.1 Introduction

Little is known about the communication between drivers and passengers, and the effect this interplay has on driver behaviour. Essentially, what is it that passengers do in the driving situation? Do passengers tell their driver to speed, do they warn their driver of a potential hazard up ahead, or do they adjust the controls of the radio? Perhaps the passenger has a more passive involvement such that their physical presence is sufficient to influence the driver to drive faster, for example. It was considered imperative that in the initial stages of exploring the type of communication that exists between drivers and passengers, a method be employed which lends itself to identifying underlying patterns in current passenger roles through a large scale quantitative analysis. To this end, a telephone survey of ACT residents who were at least 16 years of age, and who were drivers, passengers, or both, was undertaken. The design and findings of the telephone survey are presented in this section of the report. The general purpose of the telephone survey was to determine the current roles that passengers play to potentially influence the behaviour of the driver either positively or negatively. Specifically, the aims were:

- to obtain some background information on participants' experience and travel exposure as a driver, and their exposure as a passenger, along with demographic information on participants' main passenger, and their main driver;
- to establish the types of roles passengers currently play; and,
- to determine whether the age of the driver, the age of the passenger, the relationship between the driver and the passenger, and the sex of the driver relative to the sex of the passenger influences the types of roles that passengers play.

4.2 Method

4.2.1 Recruitment

Participants were recruited over the telephone at the time of the survey. Calls were made to households in the ACT over 20 weeknights. It was initially envisaged that a maximum of 1000 surveys could be completed in that period, based on the response rates of other telephone surveys that had been conducted previously by MUARC. The plan was to survey an equal number of participants in each of three age groups (approximately 333): 16 to 24 year olds; 25 to 54 year olds, and 55 years old or above, to ensure that each age group was adequately represented. When contact was made, the interviewer asked to speak with the person in the household aged 16 years of age or older who had their birthday most recently. This technique was adopted since it was thought that people of similar attributes might have answered the telephone across households introducing respondent bias and compromising the representativeness of the sample. After 10 days of survey administration, the number of participants in the 25 to 54 year old age bracket had reached its quota (340 participants) and,

so, a second phase of survey administration was introduced. In this phase, when contact was made, the interviewer asked to speak with anyone in the household who was either between 16 and 24 years of age, or 55 years of age or older. In both the first and second phases of survey administration, if the suitable respondents were unavailable, their contact details were recorded in order to call them back at a more convenient time, if possible.

4.2.2 Response Rates

A total of 4,929 calls were initiated across the entire period of survey administration. During phase 1, 1,638 calls were made overall, of which 1,034 resulted in contact with a potential respondent. Of these, 510 resulted in a completed interview (49.3%), 475 were refusals (45.9%), 42 were cases where the respondent did not meet the eligibility criterion of being either a driver or a passenger (4.1%), and 7 surveys were terminated during their administration (0.7%). No direct contact was made in the remaining 588 calls. These comprised: 236 unanswered calls (40.1%), 224 calls to answering machines (38.1%), 83 calls to homes where the line was engaged (14.1%), and 45 calls to homes where the number was no longer in operation (7.7%). An accurate estimate of the number of call backs could not be determined since these were reclassified following the call back of which only one attempt was made for each.

In phase 2 of the survey administration, a total of 3,309 calls were made with 2,047 resulting in contact with a potential participant. Of these, 346 resulted in a completed interview (16.9%), 860 were refusals (42.0%), 829 were cases where the potential respondent did not meet the eligibility criteria (40.5%), which in phase 2 also included not being of the required age, and 12 were surveys abandoned during administration (0.6%). No direct contact was made in the remaining 1,262 calls: 505 were calls to answering machines (40.0%), 462 were calls that were not answered (36.6%), 159 were calls where the line was engaged (12.6%), and 136 were calls where the line was disconnected (10.8%).

4.2.3 Participants

Table 4.1 shows the number of participants who completed the survey in each phase of administration as a function of age group and sex. Of the total 872 participants who completed the survey, 398 (45.6%) were male and 474 (54.4%) were female. In terms of age, 224 participants were aged between 16 and 24 years (25.7%), 340 were aged between 25 and 54 years (39.0%), and 308 respondents were aged 55 years or older (35.3%). For all critical analyses, data were combined across the phases to maximise sample sizes. Pooling the data from the participants across phases was justified since in neither phase was the person who answered the telephone asked to undertake the survey unless this person met the selection criterion imposed in a given phase.

Table 4.1 Number of participants in the telephone survey as a function of survey administration phase, age group and sex.

Age Group (years)	Sex	
	Male	Female
	Phase 1	
16 to 24	33	33
25 to 54	146	194
55 or older	57	63
	Phase 2	
16 to 24	68	90
55 or older	94	94

4.2.4 Materials

The survey commenced with an item requesting the participant's age group, and another for the interviewer to the specify the participant's sex. The remainder of the survey was comprised of three parts. Since the survey was designed to provide information about passengers' current role types, a participant could be a driver only but one who carries passengers, a passenger only, or both a driver and a passenger. Consequently, the questions contained in the first part of the survey were designed to ascertain the participant's status as a driver and as a passenger in order to establish their eligibility for inclusion in the study and then, to determine which of the remaining two parts should be administered to the participant. These were labelled the "Driver" part and the "Passenger" part. Each part comprised several questions designed to provide background information on experience, exposure, and main passengers or main drivers; and, an additional three questions, each of several items, to determine passengers' current role types. In the Driver part, the role types of passengers could be ascertained from the driver's perspective, and in the Passenger part, passengers' role types could be determined from the passenger's point of view. Both Driver and Passenger parts were incorporated into the survey since it was not certain whether participants might recount different experiences with passenger roles depending on whether they think about them from the driver's perspective or the passenger's perspective.

In the Driver part, the driver was asked for the following background information: their current type of driver's licence, their age when they first obtained their driver's licence, the average number of hours they spend driving a car over a seven day period, how often they carry one passenger only, and how often they carry two or more passengers. Drivers were also asked to identify their main passengers, and of those identified, the one they would carry the most often, and why this particular passenger did not do the driving instead. All subsequent questions addressed the passenger roles played specifically by the driver's main passenger. First, drivers were asked to rate the extent to which their main passenger's *presence* influenced their driving behaviour on each of 10 items (e.g. *to speed, to drive too close to the car in front*). Second, drivers were asked to rate the degree to which their main passenger was likely to *tell* them about their driving behaviour (e.g. *tell you if you are driving too slow*), the driving situation (e.g. *tell you about the traffic rules*), or to adjust their driving behaviour (e.g. *tell you to slow down if you are speeding*) on each of 19 statements. Third, drivers were asked to indicate the

extent to which their main passenger was likely to *do* each of eight activities as a passenger (e.g. *read the street directory, adjust the radio or heater of the car*).

The questions comprising the Passenger part of the survey for the most part paralleled those in the Driver part. Passengers were asked to estimate the average number of hours spent travelling in a car as a passenger over a seven day period, how often they travel in a car as the only passenger, and how often they travel in a car as a passenger when there is at least one other passenger. Passengers were then asked to identify who were normally the drivers when the respondent was a passenger, and from these drivers to specify which one would be the driver the most often. Passengers were also asked why they did not drive instead of the person identified as their main driver. The remaining three questions examined the roles the passengers played while travelling as their main driver's passenger. The first question addressed the extent to which the passenger felt that their *presence* influenced their driver's behaviour on each of the 10 items used in the Driver part. Second, passengers were asked to rate how likely they would be to *tell* their driver about the driver's behaviour, the driving situation, or to tell the driver to alter their driving behaviour on each of 19 items. Third, passengers were asked to estimate the extent to which they would *do* each of eight activities while travelling as their main driver's passenger. In both the Driver part and the Passenger part, all items were rated on a 0 to 10 scale, where 0 meant not likely, 10 meant very likely, and 5 meant somewhat likely. That is, in rating each item, participants completing the Driver part were asked to think about their experiences as the driver of the passenger they carry the most often, while participants completing the Passenger part were asked to think about their experiences as the passenger of the driver who carries them the most often. The survey was piloted on 20 local participants to identify any flaws that might compromise its reliability or validity. All that was required were some superficial changes to the wording of some of the instructions and to some of the questions to make them more concise or to eliminate any ambiguity. The final survey is presented in Appendix A.

4.2.5 Procedure

Several trained research assistants administered the telephone surveys across a four week period. Calls were made Monday through to Friday between 5:30pm and 8:30pm to maximise the likelihood of finding potential participants at home. Each survey took between five and ten minutes to administer.

For ease of administration and accurate data collection, the survey was transformed into a Microsoft Access database. A pool of random telephone numbers was generated by a computer program linked to the text only version of the Telstra White Pages online directory (http://text.whitepages.com.au/pages_t/schs_t.htm). The program was instructed to select telephone numbers from the ACT residential listing, encompassing both the capital city and other areas within the territory. A separate record in the database was then created for each of the 3,200 randomly generated telephone numbers, with the records evenly distributed across several computers. Completed records were combined into a single master database, which was updated at the completion of each evening of survey administration. In addition, for ease of response entry, each telephone survey administrator was issued with a hands-free telephone headset.

In each phase of survey administration, once the administrator had made contact with a suitable respondent, the purpose of the survey was explained and the respondent asked if they would like to participate:

> *Hello, my name is [interviewer's first name], and I'm calling from the Monash University Accident Research Centre in Melbourne. We are conducting an important survey on road safety that takes five to ten minutes to complete, and I was hoping to ask you some questions. The survey is about the ways passengers interact with drivers to influence road safety. The survey is voluntary, completely confidential, and you can stop at any time. Would you be able to help us?*

If the participant agreed to undertake the survey, the interviewer administered the preliminary items and the first part of the survey to establish the participant's status as a driver and as a passenger. A participant who was identified as a driver only was administered the Driver part of the survey, while a participant who was classified as a passenger only was administered the Passenger part. A participant who was considered to be sometimes a passenger and sometimes a driver was administered either the Driver or the Passenger part. For participants in this category, each administrator alternated administration of the two parts across their participants separately for males and females, and for each age group. Time constraints prohibited administration of both the Driver and Passenger parts of the survey to participants who were both drivers and passengers.

4.3 Results and Discussion

Analysis of the survey data proceeded in three stages:

1. a descriptive summary of participants' responses pertaining to their experiences as either a driver or as a passenger;
2. factor analysis of participant's responses to items describing passenger roles to identify types of current roles; and,
3. a series of multivariate analysis of variance (MANOVAs) to determine the effect of, the age of the driver, the age of the passenger, the relationship between the driver and the passenger, and the sex of the driver relative to the sex of the passenger on these passenger roles.

4.3.1 Driver and Passenger Characteristics and Experiences

In order to establish their status as a driver and as a passenger, participants were asked whether they had driven a car in the past month, and in turn, whether they had travelled in a car as a passenger in the past month. Participants who responded that they had driven in the past month, but had not travelled as a passenger were classified as *drivers only* (n=133), while those who had not driven a car, but had travelled as a passenger were classified as *passengers only* (n=116). Participants who responded that they had driven in the past month, and had travelled as a passenger, were classified as sometimes a driver and sometimes a passenger (*driver* + *passengers*) (n=623). These data are shown in Table 4.2 as a function of age and sex.

Table 4.2 Percentage of participants who were Drivers only, Passengers only, or Drivers + passengers, as a function of age and sex

	Age (years)					
	16 to 24		25 to 54		55+	
Driver status	Male	Female	Male	Female	Male	Female
Drivers only	5.9	2.4	22.6	11.9	36.4	8.3
Passengers only	19.8	25.2	6.8	9.2	3.3	20.4
Drivers + passengers	74.3	72.4	70.6	78.9	60.3	71.3

The majority of participants in each group were drivers + passengers. There were however, clear differences across the age groups with regard to the proportion of participants who were drivers only and those who were passengers only. Among the 16 to 24 year old participants, regardless of their sex, there were more participants who were passengers only than drivers only. The reverse applied for the 25 to 54 year old participants, although, this difference was more pronounced for the males than for the females. For the oldest group of participants, there were more drivers only than passengers only among the males, but more passengers only than drivers only among the females. These outcomes are not surprising. A proportion of the passengers only in the youngest group would have comprised participants who had not yet sat for their licence, while the distribution of drivers only relative to passengers only among the oldest group may be a consequence of the fading stereotype that females are not suited to driving. Among this group, therefore, there might be a proportion of females who do not hold a licence given the expectation and prior experience that the male will be the designated driver always.

The participants who were categorised as drivers + passengers were asked, in turn, to specify what proportion of their time in a vehicle they spend as the driver. Participants' responses are summarised in Table 4.3. The proportion of time participants spend as drivers was similar across the groups, with approximately three-quarters of the participants in each group spending at least 61% of their travelling time in a car as the driver. That is, despite spending some of their car travelling time as a passenger, for the majority of these participants, a greater proportion of that time is spent as the driver.

Table 4.3 Percentage of drivers + passengers as a function of age, sex, and the proportion of time spent as the driver

	Age (years)					
	16 to 24		25 to 54		55+	
Time as driver (%)	Male	Female	Male	Female	Male	Female
1 to 20	7.1	8.4	2.8	3.4	1.1	11.2
21 to 40	4.3	4.2	1.9	3.4	6.1	3.7
41 to 60	17.1	16.9	11.1	10.4	11.2	15.0
61 to 80	22.9	26.3	30.5	26.2	15.3	21.5
81 to 99	48.6	44.2	53.7	56.6	66.3	48.6

Participants who were drivers only went on to complete the Driver part of the survey. Similarly, participants who were identified as passengers only completed the Passenger part. Approximately half of the drivers + passengers completed the Driver part (n=302) and the remaining half undertook the Passenger part (n=321). Overall, half of the total participants completed the Driver part (n=435), and half completed the Passenger part (n=437). The outcomes of the experience and exposure questions for each part are discussed separately.

Driver part

Participants being administered the Driver part were asked first whether in the past month leading up to the survey they had carried passengers who were at least five years of age. For respondents who did not meet this requirement, the survey was discontinued since there was uncertainty as to the accuracy and informativeness of their responses if their experience of carrying passengers was not recent or non-existent. Across the period of survey administration, of the 19 surveys abandoned during administration, 63% were for this reason.

For the remaining participants (n=435), the first few questions in the Driver part were designed to gather information on participants' experience as a driver. Participants were asked to specify their licence type, and the age at which they first obtained their licence. As can be seen in Table 4.4, regardless of their age and sex, the majority of participants had received their full licence, and had obtained their licence, on average, at a similar age also. Unfortunately, driving experience in terms of the number of years that participants had been driving could not be calculated since participants were not requested to give their exact age in the survey. Nevertheless, given the data that were available, it appears that age and driving experience would be positively correlated, such that the older the driver the more driving experience that driver has acquired

Table 4.4 Percentage of participants who hold a learner's permit, provisional, full driver's licence or other licence, and average age when this licence was obtained, as a function of age and sex

	Age (years)					
	16 to 24		25 to 54		55+	
Driving experience	Male	Female	Male	Female	Male	Female
Licence type						
Learners	2.4	0	3.3	0.9	1.9	1.7
Provisional	2.4	3.2	6.7	8.7	6.5	6.6
Full	92.8	94.6	90.0	88.5	88.8	91.7
Other	2.4	2.2	0	1.9	2.8	0
Age obtained licence (years)						
Mean	20.2	19.1	20.0	19.3	20.0	20.8
Range	16-34	16-31	16-40	15-40	16-50	15-55

Information regarding driver travel exposure, in general, and, when in the company of passengers, was determined by asking participants to specify the average number of hours spent driving a vehicle for private purposes across a seven day period; and, the frequency with which they carry one passenger only, and, at least two passengers. The responses to these questions are summarised in Table 4.5.

With the exception of the females aged 55 years or older, all groups drove a similar number of hours, on average, across a seven day period. The greater number of average driving hours was reported for the oldest group of females appearing to be due to a single outlier of 140 hours. Since it is unlikely that a person will spend 83% of their time over seven days driving a vehicle for private purposes, this response outlier was either a judgement error on the participant's part, or an error in data entry. If omitted, the average number of hours spent driving for private purposes across a seven day period for females aged 55 years or older is 10.0 hours; a figure more in line with the pattern established across the other participant groups. Regarding the frequency with which drivers carry passengers, while the majority of participants in each group reported that they rarely carry one passenger only, in contrast, the majority of participants, in general, indicated that they carry two or more passengers more often than once a week.

Table 4.5 Number of hours spent as a driver across a seven day period, on average, and the frequency with which participants carry one passenger only, and at least two passengers, expressed as a percentage of driver age and sex

	Driver age (years)					
	16 to 24		25 to 54		55+	
Driver exposure measures	Male	Female	Male	Female	Male	Female
Average hours as driver						
Mean	9.0	9.9	8.8	9.9	9.9	12.1
Range	0.5-60	1-30	1-40	1-70	1-40	1-140
Carry 1 passenger only (%)						
More than once a week	17.1	6.7	15.1	12.5	12.1	13.3
Weekly	2.4	0	5.4	5.8	4.7	3.3
Fortnightly	2.4	13.3	8.6	2.9	8.4	6.7
Monthly	14.6	23.3	25.8	20.2	15.9	16.7
Rarely	63.5	56.7	45.1	58.7	58.9	60.0
Carry 2 or more passengers (%)						
More than once a week	43.9	50.0	31.2	29.8	44.0	35.0
Weekly	4.9	3.3	11.8	13.5	12.1	8.3
Fortnightly	7.2	6.7	7.5	13.5	10.3	18.4
Monthly	22.0	20.0	18.3	15.4	14.0	8.3
Rarely	22.0	20.0	31.2	27.8	19.6	30.0

Drivers were asked to identify who their main passengers were in the last month. Specifically, drivers were asked whether their main passengers included family members, work colleagues, or friends, and of those main passengers identified, which one was carried the most often. The principal passenger of each driver was categorised according to: their relationship to the driver, their age, and their sex. These data are summarised in Table 4.6 for relationship, Table 4.7 for passenger age, and Table 4.8 for passenger sex, as a function of driver age and sex.

Table 4.6 Percentage of principal passengers as a function of their relationship to the driver, the driver's age, and the driver's sex

	Driver age (years)					
	16 to 24		25 to 54		55+	
Relationship to driver	Male	Female	Male	Female	Male	Female
Spouse	56.1	50.0	43.0	32.7	39.3	41.7
Child	24.4	16.7	33.7	34.6	19.6	21.7
Sibling	0	6.7	0	4.8	0.9	5.0
Parent	2.4	13.3	2.6	5.8	4.7	3.3
Friend	12.2	13.3	15.1	20.2	29.0	25.0
Work colleague	4.9	0	6.5	1.9	6.5	3.3

Expressed in terms of their relationship to the driver, several types of main passenger were revealed. Across groups, the most common types of passengers identified as the ones carried the most often were: the driver's spouse, the driver's child, and the driver's friend. For drivers in the 16 to 24 year age group, at least 50% of participants indicated that their principal passenger was their spouse. A relatively smaller proportion of participants aged 25 to 54 years identified their spouse as their primary passenger, perhaps compensated by the increase in those who identified their child as their primary passenger. While more 25 to 54 year old males identified their spouse as their main passenger than their child, the proportion of 25 to 54 year old females who identified their spouse as their principal passenger was similar to the proportion that considered their child to have this role. This is not surprising if it is to be assumed that this age group are the group more likely to have children that are too young to drive themselves, and for females aged 25 to 54 years in particular, to be responsible for the care of their children. Indeed, the proportion of drivers aged 55 years or older who identified their child as their main passenger was less than that for the 25 to 54 year old drivers. While the proportion of drivers aged 55 years or older who considered their spouse to be their main passenger was similar to that of 25 to 54 year old drivers, the proportion who reported their friend to be their main passenger was higher relative to the other two age groups.

Main passengers ranged in age from 5 to 55 years and older. Across the driver age groups, the predominant age for passengers was between 25 and 54 years, and 55 years or older. As expected, the 25 to 54 year old age group was a popular group. Since it represents a wide age range there is a greater likelihood at the outset that a passenger might fall into that group. Nevertheless, for drivers aged 16 to 24 years, the largest proportion of passengers were aged 55 years or older, and in turn, 25 to 54 years. The reverse pattern applied for the oldest group of drivers. For the 25 to 54 year old drivers, while the most common age of passengers was

25 to 54 years, the second most common was 5 to 15 years. This is not surprising, since the child of the driver was identified as one of the predominant principal passenger relationships for drivers aged 25 to 54 years.

Table 4.7 Percentage of principal passengers as a function of their age, the driver's age and the driver's sex

	Driver age (years)					
	16 to 24		25 to 54		55+	
Passenger age (years)	Male	Female	Male	Female	Male	Female
5 to 15	19.5	13.3	26.9	26.2	11.2	16.9
16 to 24	7.3	13.3	14.0	20.4	15.0	18.7
25 to 54	19.3	30.0	40.9	32.0	44.9	32.2
55 +	43.9	43.4	18.3	21.4	28.9	32.2

Across all driver groups, the majority of participants indicated that their principal passenger was female. The ratio of female to male passengers was similar between the 25 to 54 year old drivers, and the 55 years or older drivers. For the youngest driver group, however, the proportion of female passengers was more than three times that of male passengers for the female drivers. For male drivers, the proportion of female passengers was similar to the proportion of male passengers that were carried.

Table 4.8 Percentage of principal passengers as a function of their sex, the driver's age and the driver's sex

	Driver age (years)					
	16 to 24		25 to 54		55+	
Passenger sex	Male	Female	Male	Female	Male	Female
Male	46.3	23.3	38.7	38.5	38.3	35.0
Female	53.7	76.7	61.3	61.5	61.7	65.0

After specifying the passenger which they carry the most often, participants whose passenger was at least 17 years of age were then asked to identify, from a list of possible reasons, which one(s) best described why their passenger did not drive instead. The reasons are outlined in Table 4.9 as are participants' responses, as a function of driver age and driver sex. The main reasons identified for the principal passengers not driving were: that they do not drive; that they were travelling in the car owned by their driver; and, "other", which included that the driver prefers to do the driving, or whoever has the keys at the time.

Table 4.9 Reasons for passengers not driving themselves expressed as a percentage of driver age and driver sex

	Driver age (years)					
	16 to 24		25 to 54		55+	
Reason	Male	Female	Male	Female	Male	Female
Do not drive	25.5	15.0	27.0	30.3	15.9	16.7
Driver's car	36.2	35.0	27.0	30.3	11.9	28.6
Consumed alcohol	0	7.5	4.5	3.8	6.2	0.9
Ill or injured	8.5	2.5	0	3.0	3.4	4.8
Prefer not to drive in busy traffic	4.3	5.0	6.3	4.5	5.5	4.8
Prefer not to drive at night time	2.1	0	9.0	6.1	6.9	4.8
Not familiar with the roads	2.1	5.0	0.9	1.5	2.1	2.4
Tired	4.3	5.0	4.5	4.5	3.4	3.6
Other	17.0	25.0	20.7	15.9	22.1	25.0

The data described so far, served to provide some background information on drivers' driving experience, travel exposure as a driver, and principal passenger. A similar set of questions was administered to participants who completed the Passenger part of the survey. The outcomes are as follow.

Passenger Part

In order to obtain some information pertaining to participants' travel exposure as passengers, participants were asked to specify the average number of hours spent travelling as a passenger in a private vehicle across a seven day period. Participants were also asked to indicate how frequently they travel in a private vehicle when they are the only passenger, and in turn, when there is at least one other passenger. The outcomes to these questions are summarised in Table 4.10.

Table 4.10 Number of hours spent as a passenger across a seven day period, on average, and how frequently participants travel as the only passenger, and when there is at least one other passenger

	Passenger age (years)					
	16 to 24		25 to 54		55+	
Passenger exposure measures	Male	Female	Male	Female	Male	Female
Average hours as passenger						
Mean	3.8	4.7	2.7	3.5	3.1	4.1
Range	0.5-30	0.5-48	0.5-15	0.1-30	0.3-24	0.3-40
Only passenger (%)						
More than once a week	17.5	20.0	18.9	29.7	29.3	29.8
Weekly	9.5	8.4	13.2	6.6	9.8	8.5
Fortnightly	6.3	10.5	17.0	6.6	12.2	9.6
Monthly	17.5	22.1	24.5	22.0	22.0	17.0
Rarely	49.2	38.9	26.4	35.2	26.8	35.1
One other passenger (%)						
More than once a week	14.3	10.5	11.3	18.7	4.9	13.8
Weekly	0	3.2	9.4	4.4	2.4	0
Fortnightly	1.6	6.3	5.7	5.5	9.8	3.2
Monthly	17.5	11.6	15.1	13.2	19.5	22.3
Rarely	66.7	68.4	58.5	58.2	63.4	60.6

In general, participants who completed the Passenger part spent an average of 3.7 hours over seven days travelling as a passenger in a private vehicle. This is less than the average number of hours spent driving across seven days by participants who completed the Driver part. Moreover, it is a pattern consistent with the finding reported earlier that the majority of drivers + passengers spend a greater proportion of their time travelling in a private vehicle as a driver than as a passenger. Participants aged 25 to 54 years appear to spend less time travelling as a passenger across a seven day period than those aged 16 to 24 years. This is not surprising given that the 16 to 24 year old group included a larger proportion of passengers only than did the 25 to 54 year old group. Further, the majority of participants in each group reported that they travelled as the sole passenger more than once a week, monthly or rarely, and that they travelled rarely when there was at least one other passenger.

Participants were then asked to specify who their main drivers were when they travelled as passengers in the last month. Information about the main drivers' relationship to the participant, their sex, and their age were obtained. Participants were then asked to specify which of their main drivers was the one that they travelled with as a passenger the most often. The principal driver of each passenger was classified according to: their relationship to the passenger, their age, and their sex. These data are presented in Table 4.11 for relationship,

Table 4.12 for driver age, and Table 4.13 for driver sex, expressed as a function of passenger age and sex.

Table 4.11 Percentage of principal drivers as a function of their relationship to the passenger, the passenger's age, and the passenger's sex

	Passenger age (years)					
	16 to 24		25 to 54		55+	
Relationship to passenger	Male	Female	Male	Female	Male	Female
Spouse	4.8	14.6	52.8	74.7	61.0	60.6
Child	0	1.1	1.9	7.7	9.8	28.7
Sibling	6.3	9.5	1.9	1.1	0	2.1
Parent	28.6	43.2	0	5.5	0	0
Other family member	4.8	1.1	3.8	1.1	4.8	2.1
Friend	47.6	28.4	26.4	8.8	19.5	6.5
Work colleague	7.9	2.1	13.2	1.1	4.9	0

The patterning across passenger age groups of the predominant type of relationship of passenger to main driver was quite predictable. The majority of passengers in the 25 to 54 year old and in the 55 years and above group identified their spouse as their principal driver. Three-quarters of 25 to 54 year old females indicated that this was the case, compared with approximately half of their male counterparts. In this age group, a greater proportion of males than females identified their friend or their work colleague as their principal driver, while the reverse applied for the passenger's child as the driver. For the passengers aged 55 years or older, a similar proportion of males and females indicated that their spouse was their main driver. However, more males than females identified their friend as their main driver, while more females than males specified that their child is their principal driver. Females in the 25 to 54 year old group, and in the 55 years or older age group in particular, since this older group is more likely to have children that are old enough to have obtained their licence, might be more willing than their male counterparts to allow their child to drive. For 16 to 24 year old males, the driver with which they travel the most often as a passenger was their friend, and in turn, their parent, and for 16 to 24 year old females, their parent, and in turn, their friend. This might account for the age distribution of main drivers within the 16 to 24 year old age group. As can be seen in Table 4.12, for most passenger groups, the principal driver predominantly belonged to the same age group as their passenger. In the case of the 16 to 24 year old females, the primary driver for approximately half of them was in the 25 to 54 year old age bracket, and the type of relationship with their driver that predominated was their parent. The majority of 16 to 24 year old male passengers, however, indicated that their main driver was in the same age group as them. Many of these main drivers are likely to be the friend of a passenger, indicating that young male passengers accompanying a friend who is the driver and who is young also are a group with greater exposure to a potential crash. This might be important when considering the variables which influence the current roles of passengers, given concerns in the literature that young drivers who carry male passengers who

are friends and of a similar age might be under greater pressure to practice risky driving, such as speeding.

Table 4.12 Percentage of principal drivers as a function of their age, the passenger's age, and the passenger's sex

	Passenger age (years)					
	16 to 24		25 to 54		55+	
Driver age (years)	Male	Female	Male	Female	Male	Female
16 to 24	60.0	43.0	7.8	9.3	0	1.1
25 to 54	35.0	54.8	88.3	83.7	42.1	31.9
55 +	5.0	2.2	3.9	7.0	57.9	67.0

In terms of the sex of the principal driver, the proportion of males to females differed between the groups. For the 16 to 24 year olds, the proportion of male to female drivers was similar. For both the 25 to 54 year old male passengers, and the passengers aged 55 years or older, at least two-thirds of the drivers were female, but for their female counterparts, the majority of drivers were male. This is expected, given that the main driver of the passengers aged 25 to 54 years and those aged 55 years or older for both males and females was their spouse.

Table 4.13 Percentage of principal drivers as a function of their sex, the passenger's age, and the passenger's sex

	Passenger age (years)					
	16 to 24		25 to 54		55+	
Driver sex	Male	Female	Male	Female	Male	Female
Male	51.7	46.2	33.3	86.0	26.3	73.6
Female	48.3	53.8	66.7	14.0	73.7	26.4

After specifying the driver that carries them the most often, participants were asked to identify, from a list of possible reasons, which ones best described why they did not drive themselves. The reasons are outlined in Table 4.14 as are participants' responses, as a function of passenger age, and passenger sex.

Table 4.14 Reasons for passengers not driving themselves expressed as a percentage of passenger age and passenger sex

	Passenger age (years)					
	16 to 24		25 to 54		55+	
Reason	Male	Female	Male	Female	Male	Female
Driver's car	29.2	38.8	32.1	21.0	45.5	36.0
Consumed alcohol	9.2	6.9	14.8	6.6	9.1	13.2
Ill or injured	3.1	3.4	6.2	1.1	2.3	5.3
Prefer not to drive in busy traffic	3.1	6.0	4.9	4.4	4.5	3.5
Prefer not to drive at night time	6.2	4.3	7.4	6.1	9.1	4.4
Not familiar with the roads	1.5	2.6	1.2	1.1	2.3	0.9
Tired	13.8	8.6	8.6	7.7	0	6.1
Other	33.8	29.3	24.7	19.3	27.3	30.7

The main types of reasons identified by participants for not driving themselves were that they were travelling in the driver's car, and "other", such as their driver preferring to do the driving. The pattern of responses was consistent across the groups.

In summary, the data that has been described so far provided certain background information on participants' experiences as either a driver or as a passenger. The next stage of the telephone survey analysis draws on the data from the questions in each of the Driver and Passenger parts designed to determine the types of roles that passengers currently play. In providing responses to these questions, participants who were undertaking the Driver part were asked to think about the times when they have carried their main passenger, while those who were completing the Passenger part were asked to think about the occasions when they have travelled as the passenger of their main driver.

4.3.2 Current Types of Passenger Roles

The second aim of the telephone survey was to delineate the types of roles that passengers currently play that potentially influence, positively or negatively, the behaviour of the driver. Types of passenger roles were determined by identifying underlying patterns in responses to items depicting current passenger roles. A factor analysis was performed for each set of items in each of the Driver and Passenger parts. Since factor analysis is sensitive to outliers, the data were screened initially to omit any responses to items with standard scores exceeding ±7 (Tabachnick & Fidell, 1989). Principal Components Analysis was then used to extract factors with eigenvalues greater than or equal to one. If a scree plot indicated that a smaller set of factors was appropriate, this solution was also subjected to oblique rotation. A cut-off of 0.35 was enforced for inclusion of an item in a factor. Any items that either failed to load on any factors, or had a low and equivalent loading across at least two factors were omitted. The more meaningful solution with superior alpha coefficients representing greater internal

consistency was the one adopted for the current study. The pattern matrix for each set of items is shown in Table 4.15 for the Driver part and Table 4.16 for the Passenger part. The alpha coefficient for each factor is shown also.

Driver Part

The Driver part addressed passenger's roles from the perspective of the driver. A two factor solution was considered the most appropriate for Question a, accounting for 53.5% of the variance in responses. The first factor grouped items describing reckless or risky driving behaviours. High scores on this factor would indicate that the driver is highly influenced in their passenger's presence to engage in risky driving behaviours, such as speeding, and close-following. High scores on the second factor would suggest that the driver is very likely to engage in driving behaviours of a more anti-social type in reaction to their passenger's presence, including spinning the wheels or skidding, and drink driving.

Question b was comprised of three factors, explaining 51.6% of the response variance. The first factor consisted of items indicative of responsible passenger behaviours. High scores would suggest that the passenger is very likely to tell the driver to not take risks like to speed, to warn the driver of potential dangers, or to direct the driver. High scores on the second factor would indicate that the passenger is highly likely to tell the driver to engage in more anti-social type behaviours, while the third factor is characterised by risky driving practices, with low scores reflecting little chance of the passenger telling their driver to take risks while driving.

Question c consisted of two factors, accounting for 57.6% of the variance in responses. A high score on the first factor would mean that the passenger is highly likely to carry out behaviours instead of the driver that are incidental to the driving task and that reduce the driver's workload. These behaviours include: answering the mobile phone, and adjusting the radio or heater of the car. A low score on the second factor would reflect that the passenger is not likely to talk to their driver either in general, or to keep their driver awake.

Table 4.15 Summary of factor solutions for the Driver part of the survey

		Factor		
	Item	I	II	III
(a) Influence of the passenger's presence on the driver's behaviour				
Factor 1	To drive too close to the car in front	.80		
(α = .71)	To speed	.77		
	To drive through a red or amber traffic light	.74		
	To overtake	.60		
	To flash the headlights at other drivers or road users	.37		
Factor 2	To drive if you've been drinking alcohol		.78	
(α = .49)	To spin the wheels or to skid		.76	
(b) Likelihood of the passenger telling the driver about the driver's behaviour, or the driving environment				
Factor 1	Tell you if you are driving too fast	.86		
(α = .84)	Tell you to slow down if you are speeding	.80		
	Tell you if you are driving too close to the car in front	.75		
	Tell you about traffic hazards up ahead	.68		
	Tell you about the traffic rules	.66		
	Tell you if there is a speed-camera or booze bus close by	.61		
	Tell you about driving techniques like checking your blind spot	.53		
	Tell you how to get to where you are going	.49		
Factor 2	Tell you to abuse other drivers or road users		.76	
(α = .76)	Tell you to honk the horn at other drivers or road users		.75	
	Tell you to flash the headlights at other drivers or road users		.71	
	Tell you to drive if you've been drinking alcohol		.58	
Factor 3	Tell you if you are driving too slow			-.83
(α =.73)	Tell you to speed up if you are driving too slowly			-.82
	Tell you to overtake			-.64
	Tell you to drive through a red or amber traffic light			-.54

Table 4.15 (continued) Summary of factor solutions for the Driver part of the survey

	Item	Factor I	Factor II	Factor III
(c) Likelihood of the passenger doing something for the driver				
Factor 1	To answer the mobile phone if it rings	.82	-.35	
(α = .83)	To adjust the radio or heater of the car	.76		
	To get items in the car that you can't reach	.75		
	To read the street directory	.70		
	To read the road signs and street numbers	.66		
	To look after the children	.64		
Factor 2	To talk to you a lot		.80	
(α = .46)	To talk to you to keep you awake if you are tired	.35	.60	

Passenger Part

For the Passenger part, factors were revealed with similar themes to those identified for the Driver part; although, there was some minor variation in the combination of items comprising the factors between the two parts. This is not problematic, however, since as intended the factor analysis reduced the number of items to a set of interpretable factors for use in the subsequent analyses. The Passenger part addressed passenger roles from the point of view of the passenger. Question a was composed of two factors, explaining 61.5% of the variance in responses. The first factor depicted anti-social type behaviours of the driver in response to their passenger's presence, and the second described risky behaviours that the driver undertakes in the presence of passengers.

Question b comprised three factors (49.3% explained variance). The first represented the likelihood of the passenger telling the driver to engage in risky behaviours, while the second factor had a more positive theme where a high score would reflect the driver being told by their passenger to avoid risky driving practices, to be aware of potential hazards, or how to reach their destination. The third factor was more negative in the sense that the passenger is telling the driver to partake in driving behaviour that is anti-social.

Only one factor could be extracted for Question c (45.5% explained variance). This factor represented all types of activities that are incidental to the driving task that the passenger could undertake instead of the driver to moderate driver workload, along with talking to the driver in general and for keeping the driver awake.

Table 4.16 Summary of factor solutions for the Passenger part of the survey

		Factor		
	Item	I	II	III
(a) Influence of the passenger's presence on the driver's behaviour				
Factor 1	To honk the horn at other drivers or road users	.88		
(α = .76)	To flash the headlights at other drivers or road users	.79		
	To abuse other drivers or road users	.66		
	To spin the wheels or to skid	.65		
Factor 2	To drive too close to the car in front		.82	
(α = .71)	To overtake		.75	
	To speed		.70	
(b) Likelihood of the passenger telling the driver about their driving behaviour, or the driving environment				
Factor 1	Tell them that they are driving too slowly	.85		
(α = .79)	Tell them to speed up if they are driving too slowly	.85		
	Tell them to overtake	.71		
	Tell them to drive through a red or amber traffic light	.57		
	Tell them to break the traffic rules	.38		
Factor 2	Tell them to slow down if they are speeding		.80	
(α = .83)	Tell them if they are driving too fast		.79	
	Tell them about traffic hazards up ahead		.73	
	Tell them if they are driving too close to the car in front		.65	
	Tell them if there is a speed camera or booze bus close by		.64	
	Tell them about the traffic rules		.54	
	Tell them how to get to where they're going		.53	
	Tell them about driving techniques e.g. check their blind spot		.47	

Table 4.16 (continued) Summary of factor solutions for the Passenger part of the survey

	Item	Factor I	Factor II	Factor III
Factor 3	Tell them to abuse other drivers or road users			.66
(α = .69)	Tell them to drive if they've been drinking alcohol			.62
	Tell them to drive close to the car in front			.61
	Tell them to spin the wheels or to skid			.57
	Tell them to honk the horn at other drivers or road users			.55
	Tell them to flash the headlights at other drivers or road users			.45
(c) Likelihood of the passenger doing something for the driver				
Factor 1	To get items in the car that they can't reach	.76		
(α = .82)	To read the street directory	.73		
	To read the road signs and street numbers	.72		
	To talk to them to keep them awake if they are tired	.70		
	To look after the children	.70		
	To adjust the radio or heater of the car	.60		
	To answer their mobile phone if it rings	.59		
	To talk to them a lot	.56		

Summary of Types of Current Passenger Roles

In summary, seven factors were extracted to best interpret current passenger roles from the perspective of the driver, and six factors were identified from the passenger's perspective. These findings indicate that passengers do potentially play constructive roles involving responsible acts such as hazard detection, but that they also potentially play roles encouraging risk taking and anti-social practices. If acted upon by the driver, roles of the risk taking type are perhaps the most obvious to have negative implications on safety. Roles encouraging anti-social practices also might potentially compromise safety if acted upon by the driver. However, the impact on safety, either positive or negative, of the "doing" type roles, involving talking to the driver and carrying out certain incidental tasks instead of the driver, is less clear. On the one hand, such roles might assist drivers by allowing them to concentrate more fully on the driving task, while on the other hand, such intervention might distract them and hence, divert their attention from the driving task. The telephone survey was not designed to ascertain drivers' reactions to these roles. These issues were addressed in the focus group component of the study to be discussed in the next chapter. The next section of this chapter addresses the effect of the relationship between the driver and the passenger, the age of the passenger, the age of the driver, and the sex of the driver relative to the sex of the passenger on the passenger role types that were identified through factor analysis.

4.3.3 Group Effects

The second aim of the telephone survey was to determine whether the passenger role types identified were affected by the following variables: the relationship between the driver and the passenger, the age of the driver, the age of the passenger, and the sex of the driver relative to the sex of the passenger. Variables were considered separately for their effect on passenger role types because combinations of a minimum of two variables yielded cell sample sizes too small to ensure against serious violation of specific assumptions underlying the analysis model. It is advised against conducting multivariate analysis of variance (MANOVA) when at least one cell comprises a sample that is less than the number of dependent measures. It was for this reason also that the variable "relative age" was not examined instead of both driver age and passenger age.

Driver Part

MANOVA conducted separately for each variable revealed that the extent to which a particular role is played by the passenger, as perceived by the driver, is influenced by passenger age ($F(21,1209) = 3.14$, $p < .001$), relationship ($F(14,714) = 3.50$, $p < .001$), and relative sex ($F(21,1212) = 1.83$, $p < .05$), but not by driver age ($F(14,808) = 0.78$, $p > .05$). Significant MANOVAs were followed with a separate analysis of variance (ANOVA) for each passenger role type, which if significant was followed with Tukey post-hoc analyses to locate the sources of the differences between groups. The results are shown in Table 4.17 for passenger age, Table 4.18 for relationship, and Table 4.19 for relative sex.

Table 4.17 Mean factor scores as a function of passenger age, and the ANOVA and post-hoc analysis outcomes for each passenger role type from the driver's perspective

	Passenger age (years)				
Passenger role	5 to 15	16 to 24	25 to 54	55 +	F
Presence - risk taking	.50	.60 [a]	.45	.22 [a]	F(3,407) = 3.33, p<.05
Presence - anti-social	.07 [a]	.40 [a b c]	.14 [b]	.05 [c]	F(3,407) = 5.05, p<.01
Telling - responsible	2.99	3.42	3.74 [a]	2.74 [a]	F(3,407) = 4.50, p<.01
Telling - anti-social	.31	.66 [a]	.33	.14 [a]	F(3,407) = 4.47, p<.01
Telling – risk taking	1.35 [a]	1.65 [b]	1.12 [c]	.58 [a b c]	F(3,407) = 7.13, p<.001
Doing – general	5.02 [a b]	6.37 [a c]	6.06 [b d]	4.58 [c d]	F(3,407) = 8.95, p<.001
Doing – talking	5.33	6.07 [a]	5.32	4.41 [a]	F(3,407) = 4.98, p<.01

Note. Identical superscripts indicate that these means differ significantly

A significant effect of passenger age was revealed for all passenger role types suggesting that, in every case, their occurrence is more likely among passengers of a particular age. The differences between passenger age groups were predominantly between the passengers aged 16 to 24 years and those aged 55 years or older. The presence of a passenger aged 16 to 24 years was more likely to stimulate the driver to engage in risky driving behaviours, and to influence the driver to perform anti-social driving behaviours than the presence of a passenger aged 55 years or older. A passenger aged 16 to 24 years was also more likely to tell their driver to take risks, to engage in anti-social driving, to talk to their driver, and to carry out certain

tasks for their driver than a passenger aged 55 years or older. However, a passenger aged 16 to 24 years was no less likely than a passenger aged 55 years or older to be responsible by telling their driver not to take risks, to warn their driver of hazards, or how to reach their destination.

A significant effect of relationship was found for a subset of role types only: presence-anti-social, telling-anti-social, telling-risk-taking, and doing-talking. A friend as a passenger was more likely to induce the driver to engage in anti-social driving behaviours, either through physical presence or by telling the driver, than the driver's spouse or child. The driver's friend was also found to be more likely to talk to the driver relative to the driver's spouse, while the driver's child as the passenger was found to be more likely to tell the driver to take risks than was the driver's spouse.

Table 4.18 Mean factor scores as a function of relationship of passenger to driver, and the ANOVA and post-hoc analysis outcomes for each passenger role type from the driver's perspective

	Relationship[a]			
Passenger role	Spouse	Child	Friend	F
Presence - risk taking	.37	.42	.52	F(2,362) = 0.83, p>.05
Presence - anti-social	.11 [a]	.07 [b]	.37 [a b]	F(2,362) = 5.41, p<.01
Telling – responsible	3.52	2.95	3.25	F(2,362) = 1.88, p>.05
Telling - anti-social	.23 [a]	.24 [b]	.60 [a b]	F(2,362) = 5.40, p<.01
Telling – risk taking	.88 [a]	1.37 [a]	1.27	F(2,362) = 3.52, p<.01
Doing – general	5.75	4.98	5.48	F(2,362) = 2.36, p>.05
Doing – talking	4.70 [a]	5.06	5.89 [a]	F(2,362) = 4.87, p<.01

[a] While several types of relationship of driver to main passenger were revealed, only spouse, child, and friend were considered in the statistical analyses since the number of cases in each of the other relationship types was not sufficient to ensure the integrity of the analyses being undertaken.

Note. Identical superscripts indicate that these means differ significantly

Relative sex was found to influence a similar subset of passenger role types to relationship: presence - anti-social, telling – anti-social, and telling – risk taking. A male passenger of a female driver was found to be more likely to tell the driver to engage in risk taking and anti-social driving behaviours than a female passenger of a male driver and a female passenger of a female driver. In addition, the physical presence of a male passenger was more likely to stimulate a female driver to adopt anti-social driving behaviours than the physical presence of a female passenger.

Table 4.19 Mean factor scores as a function of sex of driver relative to sex of passenger, and the ANOVA and post-hoc analysis outcomes for each passenger role type from the driver's perspective

Passenger role	Relative sex (Driver/passenger)				F
	Male/ male	Male/ female	Female/ male	Female/ female	
Presence - risk taking	.52	.35	.40	.44	F(3,408)=0.75, p>.05
Presence - anti-social	.25	.09	.35 [a]	.07 [a]	F(3,408)=3.34, p<.05
Telling – responsible	3.37	3.33	3.03	3.27	F(3,408)=0.31, p>.05
Telling - anti-social	.43	.21 [a]	.60 [a b]	.23 [b]	F(3,408)=3.36, p<.05
Telling – risk taking	1.34	.93 [a]	1.56 [a b]	.85 [b]	F(3,408)=3.88, p<.01
Doing – general	5.63	5.26	5.56	5.64	F(3,408)=0.48, p>.05
Doing – talking	5.28	4.78	5.24	5.60	F(3,408)=1.70, p>.05

Note. Identical superscripts indicate that these means differ significantly

Passenger Part

A different set of outcomes was yielded for the Passenger part. MANOVA conducted for each variable separately revealed that, from the passenger's perspective driver age *does* influence the degree to which a passenger role type is likely to occur ($F(12,814) = 2.27$, $p < .01$), but not passenger age ($F(12,840) = 1.19$, $p > .05$), relationship[1] ($F(18,1128) = 1.01$, $p > .05$), or relative sex ($F(18,1242) = 0.74$, $p > .05$). Separate ANOVAs revealed that the influence of driver age was specific to presence – anti-social, telling – anti-social, and doing – general/talking. Tukey post-hoc analyses revealed that passengers felt that their physical presence was more likely to stimulate a driver aged 55 years or older than a driver aged 25 to 54 years to engage in anti-social type behaviours, and also more likely to tell their 55 year old main driver to partake in such behaviours than their 25 to 54 year old main driver. Additionally it was found that, a passenger was more likely to do things for the driver or talk to the driver if the main driver was aged 25 to 54 years than if the driver was aged 55 years or above.

[1] The levels of relationship of passenger to driver in the MANOVA were: spouse, parent, child, and friend.

Table 4.20 Mean factor scores as a function of driver age, and the ANOVA and post-hoc analysis outcomes for each passenger role type from the passenger's perspective

	Driver age (years)			
Passenger role	16 to 24	25 to 54	55≥	F
Presence - anti-social	.59	.39 [a]	.86 [a]	F (2,411) = 4.72, p<.01
Presence - risk taking	.84	.61	.92	F (2,411) = 2.11, p>.05
Telling - risk-taking	1.21	1.00	1.20	F (2,411) = 0.83, p>.05
Telling – responsible	4.05	4.25	3.74	F (2,411) = 1.59, p>.05
Telling - anti-social	.42	.24 [a]	.60 [a]	F (2,411) = 6.57, p<.01
Doing – general/talking	6.35	6.52 [a]	5.78 [a]	F (2,411) = 3.25, p<.05

Note. Identical superscripts indicate that these means differ significantly

Summary of Group Effects

Overall, four variables were considered for their potential influence on the passenger role types that were identified through the factor analysis. These were: passenger age, driver age, relationship between the driver and the passenger, and the sex of the driver relative to the sex of the passenger. Each variable was considered separately for its effect on passenger roles. While it would have been interesting to examine these variables in combination for potential interaction effects, this was not feasible because of potential statistical complications associated with a small number of cases in any given level of variable combination. Hence, rather than compromise the integrity of the statistical analyses, a simpler design was adopted. On these grounds, the number of cases analysed was sufficient to ensure that confidence could be placed on the conclusions drawn from these data. Passenger age, relationship, and relative sex were found to influence the extent to which various passenger roles would be played by the passenger carried the most often from the driver's perspective; and, driver age was found to influence the extent to which passengers played particular roles for their main driver when taken from the passenger's perspective. This is an important finding since it indicates that passengers appear to be unaware that they are having the sorts of effects on drivers that drivers say that passengers are having on drivers. It is critical therefore, that this discrepancy between driver and passenger perspectives be considered when devising countermeasure strategies that rely on passenger involvement.

In summary, the telephone survey findings indicated that passengers currently play potentially constructive roles including responsible acts such as hazard detection. Roles of this type are thought of as constructive in the sense that such intervention from the passenger has the greatest potential to translate into positive safety outcomes. The findings also revealed, however, that passengers also play roles encouraging risk taking and anti-social practices which are more likely to have negative implications on safety if acted upon by the driver. In particular, the potential negative influence of friends as passengers, 16 to 24 year old passengers, and male passengers requires closer examination by considering driver's perceptions and reactions to current passenger roles. The focus group component of the study permitted a more in depth investigation of these issues.

Chapter 5 Group Discussion Of Drivers' Perceptions and Reactions To Passenger Roles

5.1 Introduction

A total of three focus groups were conducted to further examine the types of roles that passengers are currently playing, and critically, to determine drivers' perceptions and reactions to these role types. While the results of the telephone survey were instrumental in categorising current passenger roles and in determining important differences across driver and passenger groups with respect to these role types, the survey itself did not give participants the opportunity to justify their responses. Focus groups provide participants with the opportunity to express their opinions and attitudes, and moreover, to share and discuss their experiences and views on the topic with other members of the group. The discussion that develops is enriched through this social interaction among group members. Focus groups therefore, were an appropriate and suitable option for addressing the following aims:

- to further explore the role types that passengers are currently playing to influence the behaviour of the driver with respect to whether these role types are perceived positively or negatively by the driver;
- to discuss drivers' reactions to these roles with or without accompanying changes to driver behaviour, and the implications on safety;
- to further examine whether the form of passenger intervention, as well as the driver's perception and reaction to this intervention is influenced by factors such as the relationship between the driver and the passenger;
- to discuss the types of roles that passengers *should* be playing to assist the driver to drive more safely; and,
- to discuss possible strategies for best implementing these roles in the community.

The focus group methodology is outlined in the next section of the report, followed with a discussion of the focus group findings.

5.2 Method

5.2.1 Recruitment

Focus group participants were recruited through the telephone survey. After completing the survey, participants were invited to take part in a small discussion group about whether passengers can assist drivers to drive more safely, and how this could be best achieved (see Appendix B). If a participant were interested, the telephone interviewer recorded their contact details, and approximately one week before the focus groups were scheduled to be held, these participants were contacted again and a booking to attend a focus group was made given their continued interest and availability. An explanatory statement and consent form (see Appendix

C), to comply with the requirements of the Monash University Standing Committee on Ethics involving Humans, was sent to the participant, in addition to a confirmatory letter listing the date and time of their focus group, and the place where the focus groups were being held.

All participants who completed the telephone survey were asked whether they would like to be involved in a focus group. This ensured that a sufficient number of participants were available initially, given the likelihood of attrition from the time of first contact to second contact. Overall, of the 605 participants who had completed the telephone survey in the first two and a half weeks of its administration, 85 expressed interest in attending a focus group.

It was proposed that 12 participants with an equal number of males and females, attend each of the three groups. For each of the first two groups, it was intended that four representatives, two males and two females, be recruited from each age group: 16 to 24 years, 25 to 54 years, and 55 years or older. Once the list of potential participants for a particular group was exhausted and at least one other participant from that group was required, an additional participant from another group, preferably of the same sex or age, was recruited. For the third and final group, only participants between 16 and 24 years of age were invited to attend. It was thought that in groups comprised of participants representing a wide age range, younger participants might feel intimidated in the presence of their older counterparts, and as a consequence, be reluctant to accurately comment on their experiences. This would compromise the validity of the questions for discussion adversely affecting the quality of the discussion.

To ensure that not all participants within a focus group represented, for example, a group of drivers that are *not* influenced by passengers, for each of the first two focus groups an attempt was made to recruit participants such that within each age group there was a representative of each of the following:

- a driver who *is* influenced to speed by the presence of a passenger;
- a driver who *is not* influenced to speed by the presence of a passenger;
- a passenger whose presence *does* influence a driver to speed; and,
- a passenger whose presence *does not* influence a driver to speed.

Further, for a given age group and sex (e.g. males aged 16 to 24 years), if a participant who was classified as a driver who *is* influenced to speed by the presence of a passenger, for example, were recruited for the first focus group, an attempt was made to recruit a participant who was considered to be a driver who *is not* influenced to speed by the presence of a passenger for the second focus group. For the third focus group, at least one female and one male representative from each of the driver/passenger groups was recruited.

Participants who completed the Driver part of the telephone survey were classified as either a driver who is influenced to speed by the presence of a passenger, or a driver who is not influenced to speed by the presence of a passenger, based on their response to the question in the survey *How likely would your main passenger's presence in the car influence you to speed using a scale of 0 to 10, where 0 means not likely to influence you and 10 means very likely to influence you?* This question was chosen as the defining criterion since "speed" has received considerable attention in the literature on the influence of passenger presence on driver behaviour (e.g. Baxter, et al., 1990). A participant who responded zero to this question was classified as a driver who is not influenced to speed by the presence of a passenger, while a participant who responded between 1 and 10 was considered to be a driver who is influenced to speed by the presence of a passenger. While the distinction between the two groups may appear trivial, some flexibility was necessary since responses generally were skewed towards the lower end of the scale.

Participants who responded between 1 and 10 were ranked in ascending order (i.e. from 10 to 1) and then contacted in this order until the places in the focus groups had been filled. Similarly, participants who completed the Passenger part of the telephone survey were classified as either a passenger whose presence influences a driver to speed, or a passenger whose presence does not influence a driver to speed. A passenger who responded zero to the question *How likely do you think your presence in the car influenced your main driver to speed, using a scale of 0 to 10?*, was classified as a passenger whose presence does not influence a driver to speed, while a passenger who responded between 1 and 10 to this question was classified as a passenger whose presence does influence a driver to speed.

5.2.2 Participants

Twenty-eight ACT residents, 14 males and 14 females, participated in the three focus groups overall. In groups 1 and 2, participants represented a wide age range from 16 to 73 years (M=42.5, SD=18.0), and the third group comprised participants of a restricted age range of 17 to 24 years (M=19.9, SD=2.4). Eleven participants, six females and five males attended the first focus group. The females ranged in age from 16 to 64 years (M=37.0, SD=20.8). The male participants ranged in age from 20 to 73 years (M=44.4; SD=21.1). The second group comprised 10 participants, three females and seven males. The females ranged in age from 16 to 65 years (M=44.0, SD=25.2). The male participants were aged between 22 and 63 years (M=44.7, SD=14.9). The third focus group was composed of seven participants, five females and two males. The females were between 19 and 24 years of age (M=21.0; SD=2.1) and both of the male participants were 17 years of age.

5.2.3 Materials

A list of questions was developed to serve as a guide for the group discussions (see Appendix D). These questions were specifically formulated to address the aims of the focus group component of the study. The key issues were:

- what are passengers currently doing, that is, what roles do they currently play;
- how do drivers feel and react to these roles;
- how does the relationship, relative age, relative sex, and relative driving experience[1] between the passenger and the driver influence these roles;
- what roles should passengers be playing to assist the driver to improve safety; and,
- how can these roles be implemented?

A brief questionnaire was also developed (refer Appendix E). The purpose of the questionnaire was to obtain some background information on each participant's travel exposure as a driver *and* also as a passenger. These questions were the same as those included in the telephone survey. They were readministered in the focus group sessions to confirm that all participants were well qualified to comment on their experiences as a driver, a passenger, or both. The questionnaire was composed of four parts:

A. a question asking for the participant's age;

[1] Driving experience was introduced as an additional variable in the focus group discussions because it was not known whether this variable also influenced the occurrence of passenger roles.

B. questions to determine whether the participant travels as a driver, a passenger, or both, and if they are both, what percentage of the total time spent travelling in a private vehicle is spent as the driver;

C. questions for participants who identified themselves as drivers, assessing their experience and their travel exposure as a driver of a private vehicle; and,

D. questions for participants who identified themselves as passengers, assessing their travel exposure as a passenger of a private vehicle.

In addition, to aid in accurate data collection, a Sony digital video camera (DCR-TRV8E) was used to record each focus group onto individual video cassettes.

5.2.4 Procedure

To maximise focus group attendance, on either the evening prior to or the morning of their session, all participants were telephoned to remind them of their engagement and to ensure that they had received the information sent through the post. The focus groups were held in the boardroom of the Canberra Rex Hotel, Braddon, ACT on three consecutive evenings. The duration of each focus group was approximately two hours. The sessions proceeded in the following steps.

- Introduction – A brief description of the project, introducing participants to the facilitator, and informing them of other researchers involved in the project, the Centre, the funding body, and the aims of the group discussions.
- Reminder of ethical requirements – By the time of their discussion group, all of the participants had read the explanatory statement and signed the accompanying consent form. The participants were reminded of some of the ethical issues that were outlined in the explanatory statement, such as the need to maintain confidentiality so that the views of individual participants are not discussed outside of the group. Further, all participants wore nametags with their first name only, and their own code. It was felt that being able to refer to the participants by name during the discussion would assist in developing a rapport between the facilitator and the participants and between the participants themselves to maximize the quality of the discussion. The participants were informed that the use of codes was to ensure confidentiality such that no individual could be identified by name in the report. To this end, the facilitator emphasised to the participants that they should not hesitate in expressing their honest opinions and views.
- Completion of the questionnaire – Participants were asked to complete the questionnaire on participant's driver/passenger status and travel exposure.
- Guided discussion – The discussion commenced by asking participants to think about their times as a driver and/or their times as a passenger. The remainder of the discussion was framed around the question guide with some variation across groups regarding the order in which the points were addressed, and whether additional questions arose during the discussion. In this way, the facilitator steered the discussion, but made little contribution otherwise.
- Final matters – The session ended with a discussion of any final matters. In addition, at this time, participants were paid $30 each to compensate them for their time and any travel expenses.

A transcription of each focus group discussion was prepared from the videotapes. Care was taken to preserve the meaning of any comments made. For each question, however, only

those comments that were considered relevant were transcribed, with the code of the participant who made that comment noted also. The transcription of each focus group discussion is in Appendix F.

5.3 Results and Discussion

5.3.1 Group Composition of Drivers and Passengers

The purpose of the questionnaire was to gather some background information on the participant's status as a driver and as a passenger, and in turn, on the amount of time spent as a driver and as a passenger. The outcomes of the questions in Part B that were used to ascertain participants' status as a driver and as a passenger are summarised in Table 5.1. As in the telephone survey, participants who responded "yes" to the question *In the last month, have you driven a private vehicle?* and "no" to the question *In the last month, have you travelled in a private vehicle as a passenger?* were classified as "drivers only"; participants who responded "no" to the first question and "yes" to the second question were "passengers only"; and, participants who answered "yes" to both questions were classified as "sometimes a driver/sometimes a passenger" (drivers + passengers).

Table 5.1 Number of participants who were Drivers only, Passengers only, or Sometimes a driver/sometimes a passenger

	Focus group		
Driver/passenger status	Group 1	Group 2	Group 3
Driver only	0	1	0
Passenger only	2	0	0
Driver + passenger	9	9	7

Across groups, the majority of participants were drivers + passengers. In turn, participants who responded that they were drivers + passengers were asked to specify how much of their travel time in a private vehicle is spent as a driver. The participants in Group 1 spent an average of 67.1% (range 20% to 99%) as the driver. Similarly, in Group 2, the participants who were drivers + passengers spent an average of 64.4% (range 20% to 90%) as a driver, while in Group 3 this percentage was higher at 78.3% (range 50% to 93%).

Drivers were asked several questions pertaining to their driving experience and travel exposure in Part C. Information regarding participant's driving experience as measured in terms of licence type, and participants' age when this licence was obtained is summarised in Table 5.2. Also shown is the average number of years of driving experience among participants, which was determined by subtracting each participant's age when they obtained their licence from their current age (obtained in Part A).

Table 5.2 Number of participants who hold a learner's permit, provisional or full driver's licence, average age when this licence was obtained, and average number of years of driving experience

Driving experience measure	Focus group		
	Group 1	Group 2	Group 3
Licence type			
Learners	1	1	0
Provisional	1	1	5
Full	7	8	2
Age obtained licence (years)			
Mean	16.8	17.9	17.6
Range	16 - 26	15 - 21	17 - 20
Driving experience (years)			
Mean	25.3	26.6	2.4
Range	1 - 52	1 - 47	0.5 - 4

The majority of drivers in the mixed age focus groups (i.e. Groups 1 and 2) had obtained their full driver's licence, while the majority in the young group (i.e. Group 3) were still in the probationary period of their licensing. The average age of the participants when they obtained their driver's licence was similar across the three groups. However, not surprisingly, while the average number of years of driving experience among the Group 1 participants was similar to that among the Group 2 participants, the participants in the young group had relatively little driving experience on average.

In order to gain an insight into the participant's travel exposure as a driver, the participants who were drivers were in turn asked to specify the average number of hours across a seven day period they spent driving a vehicle for private purposes, and the frequency with which they carry one passenger only, and also, at least two passengers. The responses to these questions are summarised in Table 5.3.

Table 5.3 Number of hours spent as a driver of a private vehicle across a seven day period on average, and how often participants carry one passenger only, and two or more passengers

	Focus group		
Driver exposure measures	Group 1	Group 2	Group 3
Average hours as a driver			
Mean	9.8	8.3	5.6
Range	1 - 20	1 - 25	1.5 - 10
Carry 1 passenger only			
More than once a week	5	7	6
Weekly	1	2	1
Fortnightly	0	0	0
Monthly	1	1	0
Rarely	2	0	0
Carry 2 or more passengers			
More than once a week	2	4	0
Weekly	0	1	5
Fortnightly	2	2	1
Monthly	0	0	1
Rarely	4	3	0

Participants in Groups 1 and 2 drove a similar number of hours on average across a period of seven days, while the participants in the young group spent fewer hours on average driving across a seven day period. Across groups, most participants drove with only one passenger more than once a week. Driving with at least two passengers occurred less frequently among the participants in general.

In Part D, participants who were passengers were asked to give details on travel exposure as a passenger in terms of the number of hours spent travelling as a passenger on average across a seven day period, and the frequency with which they travel in a vehicle when they are the only passenger, and also, when there is at least one other passenger. These data are presented in Table 5.4.

Table 5.4 Number of hours spent as a passenger of a private vehicle across a seven day period on average, and how often participants travel as the only passenger, and when there is at least one other passenger

Passenger exposure measure	Focus group		
	Group 1	Group 2	Group 3
Average hours as a passenger			
Mean	2.5	3.8	1.6
Range	0.5 - 10	0.5 - 8	1 - 2
Only passenger			
More than once a week	2	2	4
Weekly	3	2	2
Fortnightly	0	3	0
Monthly	1	1	0
Rarely	5	1	1
One other passenger			
More than once a week	2	1	1
Weekly	1	1	3
Fortnightly	3	3	1
Monthly	1	2	1
Rarely	3	2	1

In general, fewer hours on average were spent travelling as a passenger over a seven day period than as a driver. The fewest hours spent as a passenger were among the young group participants. The young group participants appear to travel as the only passenger, and also when there is at least one other passenger, more often than the participants in Groups 1 and 2, since frequencies appear to be skewed more towards more than once a week for the young group than for the other two groups.

In summary, on the basis of these data, it appears that all three groups were comprised of participants who were in a position to draw on their experiences as a driver, a passenger, or both.

5.3.2 Group Discussion

A survey of several references on the conduct of focus groups revealed that there are no set guidelines for analysing and reporting focus group data (see Côté-Arsenault & Morrison-Beedy, 1999; Frankland & Bloor, 1999; Krueger, 1998; Morgan, 1997). For example, while some researchers choose to employ elaborate methods of data coding to group all comments under meaningful headings, others choose to summarise the data by extracting the key points. This should not be taken to suggest that one method is better than another, but rather, that one method might be more appropriate given the aims of the focus groups and the reasons

for conducting them in the first place. Since the overall nature of the current study was exploratory, the approach taken here was to address each broad aim separately, and for each to identify any themes or patterns in the data, and to illustrate these with quotes from the data.

In general, all participants were quite willing to share their views and recount their experiences as a driver, a passenger, or both. Despite initial concerns that the youngest members of Groups 1 and 2 might be reluctant to share their experiences in the presence of the older participants, this did not appear to be the case. Nevertheless, the inclusion of a group composed of only young and novice drivers permitted a more in depth investigation into the specific experiences of younger drivers and passengers. Consequently, the analysis involved both within and between group comparisons in order to identify any themes that might be age group specific.

Roles that passengers are currently playing to influence driver behaviour; drivers' perceptions and reactions to these roles; critical determinants of these effects

Participants were in agreement that passengers currently play several roles. The main roles identified were:

- navigating, particularly in unfamiliar areas;
- answering the phone, adjusting the radio, temperature, and other dials;
- keeping the driver company and alert by talking to the driver, especially on long trips;
- talking to the driver or to other passengers;
- warning the driver of approaching danger or hazards; and,
- alerting the driver to the speed at which they are travelling.

Drivers' perceptions of a given passenger role, their perceptions of passengers in general, and in turn, their reactions to passenger intervention, varied among the participants, as reflected in the following comments:

> *When you are learning to drive, you have a person sitting next to you. It's very helpful. You need them. But they can also be a distraction when they're telling you to do this, this, and I'd just like to concentrate on holding the steering wheel or going straight ahead. (F1640)*
>
> *I was reversing in a car park – thought it was clear. My passenger said "stop" – she saw another car reversing behind me – that was really good. (F3122)*
>
> *Passengers can be helpful. My friend recently had an accident. I was there but wasn't watching out, or I may have helped prevent the accident. Passengers may see cars coming out of side roads that the driver misses. (F1640)*
>
> *My wife tells me if I'm speeding – I break the speed limit a lot – tells me I'm going over 90… I appreciate what my wife does. (F1107)*
>
> *I get annoyed to be told I'm speeding, but will generally slow down if asked to. (F2378)*
>
> *I find their general presence distracting – less likely to see lights change or stop signs. They reduce my attention span when they're chatting. (F2723)*

> *Was distracted by a passenger looking for something in my wallet. I was trying to help find the item when driving – we almost crashed. If I'd been alone, I'd have pulled over and looked for the item. When I ask a passenger to look at a map, I tend to look too, which is dangerous. Entrusting tasks to passengers can be dangerous. (F2175)*

> *Dangerous situations can occur very suddenly – passengers may not see the danger before the driver. If passengers see potential dangers earlier and point every one out to you, this can become annoying. (F2723)*

In general, it appears that drivers perceive passengers, or a particular passenger role, either positively or negatively, such that a given role, such as warning the driver of potential danger, talking, or looking at a map in order to give directions, may not be considered to be positive by all drivers. In turn, a driver may choose to either act or not act on the advice of their passenger. In either case, the implications on safety might vary. Nevertheless, whether passengers will play a given role, and how drivers perceive and react to these roles was felt by participants to be contingent upon several factors. Participants were asked whether as a driver and in turn, as a passenger, they behave differently depending on the relationship between the driver and the passenger, the age of the driver relative to the passenger, the sex of the driver relative to the passenger, and the driving experience of the driver relative to that of the passenger. The passenger roles played, and drivers' perceptions and reactions to these roles were all found to be dependant on the relationship between the passenger and the driver, and for younger participants in particular, the age and sex of the driver relative to the passenger. Driving experience was perceived as having relatively little influence in general.

In terms of driver-passenger relationship, as passengers, participants generally felt that they would be more likely to intervene when the driver is a family member than when the driver is a work colleague. It was expressed that a work colleague, for example, might intervene only when asked to by the driver (e.g. navigation) or in a dangerous situation when a crash is imminent. Consequently, intervention from a work colleague was said to be perceived more favourably by the driver, and acted upon. For example:

> *I drive in a car pool that includes a young driver, who used to drive in a jerky way. By us giving him hints, like stay on your side of the road, not to overtake, when to take the high beam down, he's improved over the past 6 months. We would worry about things he didn't notice. At first, we'd just let it go, but if he kept repeating mistakes, we'd tell him. He seemed to be happy to take our advice – it may have been because we were senior to him. (F1534)*

This last example also illustrates the influence of driver age relative to passenger age on driving behaviour. The younger driver appeared to be willing to listen to and act on constructive advice from the passengers who were work colleagues but also older than him.

As drivers, several participants felt that carrying strangers as passengers was distracting since the attention allocated to the driving task was compromised while the driver plays "host" to their passenger: Others felt that they would be more cautious. As passengers, many participants commented that they would be reluctant to comment on the way in which the driver was driving if the driver were a stranger. The following comments illustrate these points.

> *I'd be more cautious if strangers were in the car – don't know what they're prepared to put up with. (F2723)*

> *Driving with strangers is difficult. I feel like the host so have to pay more attention to them to put them at ease, point out landmarks. Strangers are not safe. They are less likely to comment on my driving if I'm driving badly. (F2157)*
>
> *…I would feel less inclined to comment on a stranger's driving. (F2499)*

Constructive advice from a family member was said to be perceived and reacted to by the driver favourably for some participants, although, much of the intervention from family members was considered to be trivial or distracting. Consequently, this intervention was said to be perceived less favourably and not acted upon. The family member influence was most apparent among the younger participants when discussing their experiences of travelling with their parents. Some of the younger participants commented that they would be more likely to intervene as a passenger or to take advice as a driver, from their parents rather than from their friends. Many found the experience of carrying their parents as passengers a difficult experience since it was generally felt that parents will comment more readily even on more trivial matters. As a consequence, many of the younger participants noted that they drive more cautiously when carrying their parents as passengers. Younger participants were also more cautious when carrying older passengers in general, and children, due to a greater sense of responsibility. The following comments given by the younger participants were selected to illustrate some of these points:

> *… if they are going too fast you speak up, but not to be helpful or distracting. My dad drives very fast and even though we will tell him to slow down, he won't or will only slow down a little bit. He finds it annoying. (F1356)*
>
> *…because I'm just a learner, I never say anything to an adult driver, except for my parents. (F1356)*
>
> *Would find driving with my parents painful – there are no social barriers, no courtesy. Driving with my friends is more relaxing. They won't comment unless there's danger. Parents will comment on a wider range of things. (F2723)*
>
> *I probably drive more carefully with passengers, I wouldn't drive fast or anything, but my friends would drive faster to show-off. My male friends are the ones who have cars, I can't generalize to my female friends, but it's mostly the males who show-off. I think age is important, even though I'm really close to my grand-dad and I don't like his driving because he goes too slow, I won't say anything at all to him, but I would with my mum, but not with my friends. (F1356)*

This final comment, made by a young female, also illustrates that relationship and age are not mutually exclusive influences of whether passengers intervene, and if they do, in what ways. Further, according to this participant, there appears to be a greater propensity among young male drivers than young female drivers to show-off by engaging in risky driving behaviours such as speeding. Indeed, many participants, young males in particular, commented that, as drivers, they would speed or engage in other risky driving behaviours in order to show off even if not explicitly asked to by their peers, most often male. As passengers, young males in particular, commented that they would never tell their male peers to slow down, and might even tell their young driver to drive faster or to engage in other risky driving practices. For example:

> *I have a friend who enjoys tail-gating learners. It makes me feel embarrassed and I'll say "slack-off" or "back-off", but not "slow down". He'll usually do it, but he's a lost cause. I still let him drive me around – it's a male thing – really hard to tell him to slow down – comes down to being male. I'm scared but can't say anything… (F3505)*

Inherent throughout the discussion was that the effects of relationship, driver age relative to passenger age, and driver sex relative to passenger sex, particularly in the case of younger drivers/passengers are difficult to disentangle. The parents of the younger participants are also older, and when discussing the effects of their friends on their driving behaviour or their experiences as a passenger, the younger participants were generally referring to their friends of similar age, while also distinguishing between their male and female friends.

Participants were also asked whether the number of passengers, that is, two or more as opposed to one, influenced their driving behaviour. Responses were mixed. While some participants commented that they are more cautious while driving regardless of the number of passengers, others said that they need to concentrate more because they do not want to be responsible for more deaths. For example:

> *I slow down when the car is full - don't want to be responsible for the deaths of four other people. (F2723)*

The issue of whether young drivers, young males in particular, would drive even more recklessly with more passengers in the vehicle was not addressed directly. Clearly, this issue requires further investigation.

To summarise, it is clear that the communication dynamics between drivers and passengers giving rise to the effect of passengers on driver behaviour are complex. Passengers can offer constructive input to their driver, but this is conditional. Given this it was important to gain an insight into drivers' expectations of their passengers. This issue is discussed in the next section.

Roles that passengers *should* be playing to enhance safety

The first part of the focus group discussions was to explore the *current* roles of passengers and how drivers perceive and react to these roles. The expectation was that not all passenger roles are perceived in a positive light by all drivers, and therefore, as drivers, participants would have some opinion on what passengers ought to be doing. To this end, participants were asked to discuss the types of roles they believe that passengers *should* play in the driving situation in order to assist drivers to drive more safely and consequently enhance the safety of both the driver and the passengers.

Across groups, participants generally agreed that passengers potentially could be seen as an extra set of eyes to identify imminent hazards. Participants quickly and clearly expressed that "conditions apply" however, in that any such intervention must be constructive. For example:

> *I think that passengers shouldn't pick on small things about driving because you get frustrated, and I know that when I'm angry I drive faster. They should give constructive criticism. (F1640)*

> *When I'm driving at night in the country, I'll say, "I'm driving, but you have to look out for the kangaroos". You delegate and share the tasks, especially on long trips. (F1199)*

> *If driving in the country, would nominate a passenger as a watcher. (F3438)*

An important point was made by several participants, that what counts as constructive could be open to interpretation. A given driver and passenger might disagree regarding whether an approaching obstacle is indeed hazardous or whether such a hazard is sufficiently imminent to warrant the passenger informing the driver of the hazard. What was clear, however, was that comments that are made by the passenger after the event are not constructive and hence, should not be made. For example:

> *After the fact comments aren't constructive. It's better to say, "hey, this guy is about to hit us", than " this is the guy who nearly hit us". (F1629)*

Other roles that passengers should be playing included offering directions, and adjusting dials (e.g. radio, heater), and for children in particular, keeping quiet to minimize potential distraction to the driver. The purpose of assigning such roles to passengers would be to enable the driver to concentrate more fully on the driving task. For example:

> *Phones, radios, windscreens, should all be left up to the passenger. (F1356)*

> *As a passenger you have to remember that the driver is doing work, so if it is busy they have to do more work and so you have to quieten down a bit to let them work as well as they can. (F1813)*

Whether passengers should be delegated tasks or whether they should use their own judgement and take the initiative was evident in the discussion. It was important to consider therefore, participants' ideas on potential strategies for best implementing constructive passenger roles in the community. This is discussed in the following section.

Potential countermeasures for implementing positive passenger roles

In order to gain an insight into the types of countermeasure strategies that the public would be willing to accept and adopt concerning constructive passenger involvement, participants were asked to discuss the ways in which, as a community, passengers could be encouraged to take on a more active and positive role. In turn, participants were asked to identify the ways in which drivers could be encouraged to accept and act on this constructive input.

Most participants felt that some sort of strategy would be successful, provided the message was clear. For example:

> *This would give carte blanche to back-seat drivers to torture drivers. It could achieve the opposite of what you hope for. Message needs to get out on complexity of driving task. Campaign should be along the lines of "look after the driver", "help the driver in these ways", rather than "passengers should do this or that". (F2499)*

> *Probably if you tell them that they are going to save their lives and other people's lives. Have to make people worry about losing what they have. (F1883)*

Nevertheless, two general themes emerged from the discussion: first, to be effective, strategies need to incorporate both education and promotion to raise public awareness of the benefits of passengers; and second, does the responsibility lie with the driver, the passenger, or both, that is, should passengers take the initiative to provide intervention, or should drivers ask the passenger to intervene when necessary. These two themes are not mutually exclusive, however, as several of the following points illustrate:

Passengers have to realise that the driver is taking their life into their hands and if they don't speak up and there is a crash, then they only have themselves to blame. (F1883)

Public awareness is important. Should say to passengers that you have a responsibility as a passenger for the safety of everybody in the vehicle including the driver. (F1534)

… My suggestion is to get drivers into regular training regime that will include this sort of thing. It might not work for all drivers, but at least if you train the drivers well they can say to the passenger these are the sorts of things I'd like you to look out for while I'm driving. (F1629)

I think that the passenger should be part of driving programs done at schools, but I don't think that many teenagers would take up on that unless it was in a test. (F1356)

… a lot of it comes down to driver training. Re-educating drivers and organizing passengers. But I still think that this is the responsibility of the driver. (F1606)

Need to teach passengers how to say things – make them aware that back-seat driving can be very distracting but in certain circumstances is useful. (F2556)

Need public awareness campaign as passengers are generally uncomfortable commenting on the driving of others. (F2723)

Driver education is important – teach drivers that passengers do count. Drivers are responsible for safety and comfort of passengers but also passengers should be given the opportunity to tell you if they're uncomfortable. (F2175)

We need to make it easier for passengers to speak up – emphasise their right to speak out (F3481)

In Queensland there's a campaign using a sign saying "Passengers, it's your job to keep the driver alert". You need to make it easy; have street signs asking "Is your driver going too fast?". If the passenger sees it, they'll think about it. (F3625)

Remind drivers what it's like to be a passenger and remind them that just as they may want to comment on the driving of others, so their passengers may want to comment on their driving. Treat others as you want to be treated. (F3481)

Need to target drivers, not passengers. Drivers often have no passengers so have to rely on their own judgment. (F3505)

You need to encourage passengers to speak out. Drivers won't ignore them totally. (F3438)

A lot of schools have driver education – incorporate the benefits of passengers in this instead of always focusing on the driver. Can also ask questions about passengers in "L" test. (F3909)

> *I think that the passenger should be part of driving programs done at schools, but I don't think that many teenagers would take up on that unless it was in a test (F1356)*

Essentially, participants suggested that ways to implement constructive roles for passengers would be primarily through education, particularly at the learner driver stage to encourage young passengers to query their driver about driving behaviours that appear to be unsafe, and to encourage young drivers to expect such intervention and to act accordingly. Through promotion, the negative connotations of passengers as "back-seat drivers" might be eliminated. This could be achieved by stressing to passengers that safety is in their control also. Nevertheless, some concern was expressed regarding younger drivers and passengers, in that strategies promoting a constructive role for passengers might not be adopted by everyone in this group.

To summarise the findings of the focus group discussions, it appears that passengers play several roles including roles perceived to be constructive by some drivers, such as warning the driver of an imminent hazard, or adjusting the radio or other dials. Nevertheless, the roles played by passengers, and drivers' perceptions and reactions to these roles was felt to vary depending on the relationship between the driver and the passenger, and for the younger participants in particular, the age and sex of the driver relative to the passenger. Developing and implementing constructive roles for passengers seems possible, however, in doing so, the negative influence of young friends as passengers of young drivers, young male drivers carrying male peers in particular, requires consideration.

Chapter 6 Summary of Findings & General Discussion

The main aim of this study was to develop countermeasures to enhance both driver and passenger safety in the ACT. It was envisaged that these countermeasures would include strategies to encourage constructive passenger intervention. In order to make recommendations for countermeasure development, the potentially constructive roles that passengers can play to positively influence the behaviour of the driver needed to be explored and defined. As part of this process, information was also gathered on the potentially negative roles that passengers can play. So far in this report, information pertaining to both the positive and negative roles of passengers on driver behaviour has been gathered and discussed. This comprised a literature review, an analysis of data of ACT crashes involving passengers, administration via telephone of a survey to ACT residents, and the conduct of three focus groups involving ACT residents. In this chapter, the main findings from the ACT crash data summary, the telephone survey, and the focus group components of the study, that have implications for countermeasure development, are summarised and discussed with reference to the literature where appropriate. In Chapter 7, the final chapter of this report, recommendations for countermeasure development are presented and discussed by drawing on the relevant literature and on the critical findings of the current study.

An examination of the ACT crash data pertaining to passengers confirmed that in the ACT passengers comprise a substantial proportion of the road toll. It was revealed that 35% of vehicle occupants who were killed or seriously injured in a crash in the ACT between 1995 and 1999 were passengers. Moreover, for crashes in which there was at least one casualty and in which at least one vehicle was carrying at least one passenger, 52% of killed or seriously injured occupants were passengers. In single-vehicle crashes, both driver and passenger casualties were most prevalent among males and among 16 to 24 year olds relative to any other age group. Further, in single-vehicle crashes where both the driver and at least one passenger was killed or seriously injured the most prevalent type of driver-passenger casualty combination was 16 to 24 year old male drivers with 16 to 24 year old male passengers. In the absence of appropriate travel exposure data, caution must be exercised in drawing conclusions regarding relative crash risk from the data that were summarised in this report. This is important since the proportions discussed are not necessarily correlated with estimates of crash risk. These outcomes are noteworthy, nevertheless, since the group that was identified as the most prevalent type of driver-passenger casualty combination, 16 to 24 year old male drivers with 16 to 24 year old male passengers, is similar to that identified in previous studies as the group at greatest risk of a casualty crash (e.g. Chen, et al., 2000).

A primary aim of the telephone survey was to delineate the current role types of passengers. This was achieved by grouping roles with similar underlying response patterns into types. The role types revealed were the same from the driver's perspective and the passenger's perspective, with one exception for the items describing "doing" roles. For the items describing roles on the effect of the passenger's presence, two factors were revealed: a risk-taking factor (e.g. to speed), and an anti-social factor (e.g. to spin the wheels or to skid). For the items describing roles where the passenger is telling the driver about the driving environment or to engage in a particular behaviour, three factors were yielded: a risk taking factor (e.g. tell the driver to speed up if driving too slowly), an anti-social factor (e.g. tell the driver to abuse other drivers or road users), and a responsibility factor (e.g. tell the driver about traffic hazards up ahead). Hence, inducement by passengers for drivers to engage in

risky driving behaviours and anti-social driving behaviours can be either implicit (i.e. through physical presence) or explicit (i.e. through telling). For the items describing the roles of the passenger doing something for the driver, two factors were revealed for the driver part: a general factor comprising roles that serve to alleviate driver workload (e.g. to answer the mobile phone if it rings), and a talking factor (e.g. to talk to the driver to keep them awake if they are tired); and for the passenger part, a single factor was found: a general factor grouping all items.

In summary, the telephone survey findings indicated that passengers currently play roles of several types. Included among these role types are those that, if played by the passenger, have the greatest potential to be deemed as constructive with positive safety outcomes if acted upon by the driver (i.e. responsibility factor). However, the focus group discussions revealed that passenger roles of the responsible type are generally perceived as constructive only if they occur before the event, for example, *there is a car up ahead*. Role types potentially encouraging risk taking and anti-social practices were also revealed in the telephone survey. If acted upon by the driver, these roles are perhaps the most likely to have negative safety implications. The effect on safety, either positive or negative, of the doing type roles, either those that serve to alleviate driver workload or those that involve talking to the driver, is less clear. The focus groups confirmed that not all drivers consider these passenger roles to have the potential to enhance driver and passenger safety, but consider this type of passenger intervention to be distracting leaving less attention available for the driving task. As a consequence, driver and passenger safety is compromised. A solution may be for passengers to undertake such tasks only if asked to by their driver, hence minimising the chance of distracting a driver who is susceptible to this potentially negative influence of doing type passenger roles.

A further aim of the telephone survey was to determine whether the extent to which the role types are played is influenced by driver-passenger relationship, driver age, passenger age, and the sex of the driver relative to the sex of the passenger. From the driver's perspective, there was an effect of driver-passenger relationship, passenger age, and relative sex, while from the passenger's perspective there was an effect of driver age only. It seems therefore, that passengers appear to be unaware that they are having the effects on drivers that drivers say that they are having on drivers. This is an important finding with respect to countermeasure development. A general countermeasure package would need to incorporate strategies that target *both* drivers and passengers informing both groups of the influences, positive and negative, that passengers might have on driver behaviour.

From the driver's perspective, friends as passengers, 16 to 24 year old passengers, and male passengers regardless of the sex of the driver, were found to be the most likely to influence the extent roles of the negative type in general were played. This outcome is in line with past behavioural research which has identified a greater propensity among drivers, young male drivers mainly, to engage in risky driving behaviours while carrying as a passenger a friend as opposed to a spouse/partner, parent or child; a young passenger generally in the 16 to 24 year old age group; and a male passenger (e.g. Rolls & Ingham, 1992). From the passenger's perspective, passengers felt that they were more likely to stimulate, either through physical presence or by telling the driver, a driver aged 55 years or older to engage in anti-social type behaviours than a driver aged 25 to 54 years. On the one hand this finding is somewhat surprising since it stands in contrast to previous research. That is, contrary to expectations, passengers did not feel that they were more likely to stimulate, either implicitly or explicitly, a driver aged 16 to 24 years to engage in anti-social type behaviours and risky driving behaviours than a driver aged 25 to 54 years and a driver aged 55 years or above. This stems from the generally accepted view that young drivers are more likely to engage in risky driving behaviours in the presence of passengers, specifically teenage passengers, than older drivers

(Williams, 2000b). On the other hand it is likely that passengers in general might get frustrated with older drivers who arguably do not drive as aggressively as younger drivers, and so encourage older drivers to engage in behaviours of the anti-social type.

Of further interest is that, from the driver's perspective, it was found that a friend of the driver is more likely to talk to the driver than the driver's spouse. This might be because passengers feel that they have a social obligation to talk to their driver since long periods of silence might be deemed to be socially unacceptable. This effect is of concern for the potential negative impact that it might have on driver and passenger safety if the driver has difficulty dividing their attention between the complex task of driving and talking and listening to their passenger. Young drivers might be at particular risk here because of their lack of driving experience. This is because their inability to sufficiently attend to the driving task might compromise their developing hazard detection ability further (e.g. Regan, et al., 1999). It was found in the telephone survey that, according to the driver, a 16 to 24 year old passenger was more likely to talk to the driver and to do things for the driver than a passenger aged 55 years or older. While talking to the driver might be a source of distraction with potentially negative safety implications, doing things for the driver might benefit some drivers by minimising the driver's workload therefore allowing the driver to attend sufficiently to the driving task. Driver and passenger safety would be expected to improve as a consequence. On the basis of these results it is not known whether the 16 to 24 year old drivers in this study who were accompanied by 16 to 24 year old passengers would have conversed more with this group of passengers than any other age group. It is also not known whether 16 to 24 year old male drivers accompanied by 16 to 24 year old male passengers would have felt that their passenger encouraged them more than any other age and sex group, to engage in risky or anti-social behaviours while driving. It would have been interesting to investigate the potential interactive effects between the variables studied for their influence on the extent to which types of passenger roles are played. Analyses of this sort were not undertaken for statistical reasons. The focus groups being qualitative did permit an exploration of this issue helping to target combinations of drivers and passengers that might benefit the most, and those that might be adversely affected from particular passenger roles being played.

The focus group discussion confirmed that passengers currently play several roles, such as adjusting the radio dials, and detecting imminent hazards, but that the roles played by passengers, and driver's perceptions and reactions to these roles depend on the relationship between the driver and the passenger, and for the younger participants in particular, the age and sex of the passenger relative to the driver. For example, young participants commented that they would be more likely to intervene as a passenger or to take advice as a driver, from their parents than from their friends. However, young drivers, males in particular, commented that as a passenger they would never discourage their male peers from engaging in risky driving behaviours, and might even explicitly encourage them to partake in such behaviours. As a driver, many of the young males commented that they too would engage in risky driving practices to show off even if not explicitly asked to by their male peers travelling as passengers. Taken together, the findings of the telephone survey and focus groups concord with earlier research that identified a greater propensity among young drivers, particularly males, to engage in risky driving behaviours in the presence of their male peers as passengers (e.g. Rolls, et al., 1991; Rolls & Ingham, 1992). This is important since past epidemiological research has shown that young male drivers accompanied by young male passengers are at the greatest risk of a casualty crash (e.g. Chen, et al., 2000). Across studies, this effect was attributed at least in part to the higher risk taking propensity of young male drivers in the presence of their male peers compared to any other age and sex group in response to peer pressure (Williams, 2000b). The findings of the current study add support to this hypothesis.

When participants in the focus groups were asked what roles they think that passengers should be playing, there was agreement that passengers should play constructive roles only, such as the detection of imminent hazards, and giving directions. In addition, participants suggested that a constructive role for passengers could be implemented through education, at the learner driver stage to encourage young passengers to query their driver about driving behaviours that appear to be unsafe, and to encourage young drivers to expect such intervention and to consider it.

Overall, through this study it was revealed that passengers currently play constructive roles, and that developing and implementing strategies promoting a constructive role for passengers seems possible. Young drivers in general, might benefit from having an 'extra set of eyes', as they already appear to listen to their parents and take advice from them if appropriate. However, the negative influence of young male friends as passengers of young drivers requires particular attention for young drivers who are susceptible to this influence. The final chapter of this report discusses recommendations for countermeasures that aim to enhance the positive role of passengers and minimise the negative role of passengers on driver behaviour in order to optimise safety.

Chapter 7 Recommendations for Countermeasure Development and Further Research

7.1 Introduction

In previous chapters of this report the various influences that passengers have on the behaviour of drivers were discussed, based on knowledge derived from the present study and from other studies conducted previously. In the final chapter of this report, consideration is given to a range of countermeasures which derive from the work reported here that would appear to have significant potential to enhance the safety of young drivers and passengers in the ACT.

This final chapter is structured as follows. First, some general principles that should be considered in developing injury prevention countermeasures are discussed. Following that, the process used by the authors to develop recommendations for suitable countermeasures is described. An integrated package of potential countermeasures is then presented and discussed. Finally, some recommendations are made for further research following from this study.

7.2 Countermeasure Development: General Principles

There are no "hard and fast" rules for developing and implementing road safety countermeasures. However, Ozanne-Smith and Williams (1995) note that there are some general principles that normally underlie this process and should be adhered to in developing countermeasures in injury prevention. These are as follows:

- Countermeasures need to be appropriate and thus specifically applicable to a particular problem. This may require design of a new measure, changes to the design of an existing countermeasure, and/or a review and upgrading of standards or regulations;
- Countermeasures need to be accepted politically, especially to major stakeholders. Important in political acceptance is a demonstrated benefits/cost ratio and consultation with major stakeholders at the developmental stage;
- Countermeasures need to be acceptable, in terms of usage, to the potential users;
- Countermeasures need to be accessible and thus should be both available and affordable; and
- Countermeasures must be evaluated to ensure that they are effective and do not result in any unwanted effects.

These principles were considered in developing the countermeasures described below.

7.3 Process Used to Develop Countermeasures

The authors convened a small "think tank" of experienced and respected Melbourne-based road and aviation safety researchers and practitioners to assist them in developing a generic set of countermeasures deriving from the research reported here. It was considered that the outputs of a small think tank of this kind would better enable the authors to develop a set of creative, practical and effective countermeasures. The following individuals participated in the meeting:

- Mr Richard Blaze, MUARC
- Ms Antonietta Cavallo, VicRoads
- Ms Samantha Cockfield, Transport Accident Commission of Victoria
- Mr Brent Hayward, Aviation Psychologist
- Ms Eve Mitsopoulos, MUARC
- Dr Michael Regan, MUARC
- Mr Paul Tierney, Transport Accident Commission of Victoria
- Professor Tom Triggs, MUARC
- Professor Peter Vulcan, MUARC

Collectively these individuals brought to the meeting expert knowledge in the areas of countermeasure development, young driver safety and human behaviour. Mr Hayward brought to the meeting particular expertise in an area of aviation safety known as "Crew Resource Management (CRM)", which is broadly concerned with enhancing communication and teamwork within the aircraft cockpit to optimise flight safety. It was considered that CRM principles might be relevant to the design of countermeasures for drivers and passengers.

At the meeting, participants were given a handout that summarised in dot point form the key findings emerging from the present study and from related studies. The authors read through this document with participants and then facilitated a general discussion of the findings and the recommendations for countermeasure development.

The recommendations deriving from the discussion are documented below.

7.4 Recommended Countermeasures

In the road safety domain, injury countermeasures generally fall under one of the following categories: coordination, education, training, enforcement, engineering, licensing, promotion, and research. An integrated package of recommended countermeasures deriving from the meeting is outlined below under these various headings where appropriate.

7.4.1 Promotion

Previous research has shown that young drivers are either at greater or at lesser risk of a casualty crash depending on the number and nature of passengers they carry (e.g. Chen, et al., 2000). The present study identified some of the reasons underlying these negative and

positive passenger influences. Critically, the present research also revealed that passengers appear to be unaware that they are having the effects on drivers that drivers say passengers are having on them.

Members of the Think Tank considered that a mass media/promotional campaign was an important initial and over-arching countermeasure to introduce as part of a general package of initiatives in this area. This is supported by evidence reviewed earlier in this report. The Norwegian "Speak Out" campaign, which was much more narrow in its focus than the campaign recommended below, was found through evaluation to have resulted in a 30% reduction in the number of passengers aged 16 to 19 who were killed or seriously injured.

It was agreed that any promotional campaign introduced in the ACT should have the following general characteristics:

- The aim of the campaign would be to raise community understanding and support of the increased and decreased risks associated with carrying certain types of passengers;
- The campaign would need to target passengers, drivers and parents of young drivers;
- The focus of the campaign in relation to passengers would be to:
  - make them aware of the potentially negative and positive influences they have on driver behaviour, and
  - empower them to speak up if they feel that their safety is being compromised by the driver;
- The focus of the campaign in relation to drivers, particularly young drivers, would be to:
  - empower them to accept constructive advice from passengers if the passenger feels that his/her safety is being compromised – to point out that they are not being "whimps" if they accept constructive advice from their passengers, and
  - make them question why it is that they value the life of their friends and peers any less than that of their spouse, child, parent, older people or boyfriend/girlfriend;
- The focus of the campaign in relation to parents of young drivers would be to make them aware of the potentially negative and positive influences that passengers have on the driving behaviour of their children as a means of encouraging them to devise with their children safer ways of travelling which mimimise exposure to high risk passengers;
- Generally, the focus of the campaign should be on making young passengers aware of the negative influences they have on young drivers and encouraging them to engage in constructive behaviours - rather than on encouraging the driver not to act on the negative influences of passengers;
- The campaign should be supported by school-based materials (see below) which re-iterate the key messages described above;
- During the conduct of the focus groups in the present study one participant commented on a road sign in Queensland that read "Passengers, it's your job to keep the driver alert". The campaign should be supported by messages such as this which re-enforce the positive role of passengers in enhancing driver safety and which encourage passengers to speak up;
- In developing the content of the campaign, other messages and themes deriving from the telephone survey and focus groups conducted as part of this study should be considered; and

- Finally, further focus testing should be conducted to assess driver and passenger reactions to the messages and materials developed as part of the campaign.

7.4.2 Education

A multitude of educational materials and programs currently exist in the ACT and elsewhere to teach children and adults about safe road use through schools and community groups. As recommended above, any promotional campaign aimed at raising community understanding and support of the increased and decreased risks associated with carrying certain types of passengers should be strongly supported by educational materials and programs which re-iterate the key messages described above.

Crew Resource Management, or CRM, training has been employed widely throughout the aviation industry to enhance communication and teamwork within the aircraft cockpit to optimise flight safety. CRM courses frequently incorporate tools to empower flight crew members to speak up and to communicate more effectively with each other, especially under heavy workloads. It is envisaged that several of these tools may be appropriate in enhancing communication between young passengers and drivers. One such tool, the "CRM assertiveness tool" could be used to empower passengers to "speak up" by using a hierarchy of verbal statements to bring safety concerns to the attention of the driver. For example, if the passenger thought that the driver was exceeding the speed limit, he/she could first issue a "query" (e.g. *do you know what the speed limit is here?*). If this had no effect on the driver's behaviour, they could issue a "statement" (e.g. *we're going a bit fast for my liking*). If this had no effect on the driver's behaviour, they could issue a "request" (e.g. *would you mind slowing down a little*). Finally, if this had no effect on the driver's behaviour, the passenger could issue a "demand" (e.g. *look, either you slow down or you can stop the car and I'll get out*). A hierarchy of communication such as this is more likely to achieve the desired effect than an initially blunt demand. Special consideration should be given to incorporating CRM tools such as these into educational materials and programs.

Educational programs targeting passengers need not commence when a passenger becomes a learner driver. They can occur much earlier. Most drivers with children are used to their children commenting on emerging hazards, commenting on how fast they are driving, and reminding them to fasten their seat belts. Children are generally less inhibited than adults and naturally speak up if they feel that their personal safety is being compromised in some way. In the current climate, it seems that this innate desire to speak up is drummed out of children as they get older rather than re-enforced as a constructive, safety enhancing, activity. Pre-driver educational programs should make younger passengers aware of the positive and negative influences they will eventually have on driver safety and re-enforce the importance of speaking up if they feel their safety is being compromised.

7.4.3 Training

Traditionally, the driver has been the focus of training programs in road safety. This is understandable given that drivers need to develop through training and practice a wide range of motor, perceptual and cognitive skills to enable them to safely control a vehicle. The driver training period also provides an excellent opportunity for drivers to acquire skills that will help them as passengers to positively influence the safety of other drivers – after all, most drivers will be passengers to a varying extent during their driving careers. As noted above, CRM incorporates a range of training tools that could be used by passengers to empower them to

speak up and to communicate more effectively with drivers in order to enhance overall safety. It is recommended that principles of CRM relevant to the enhancement of communication and teamwork between drivers and passengers to enhance safety be incorporated into pre-driver and driver training programs.

7.4.5 Licensing

The ACT driver licensing system provides an important mechanism for imparting to young drivers and passengers important information about the risks associated with carrying passengers. To the knowledge of the authors, the preparatory handbooks for learner drivers in the ACT, "Towards Your Ps in the ACT" and the "Road Rules Handbook", contain no information about the positive or negative influences of passengers on driver behaviour and safety. Similarly, it is understood that there are no items in the traffic knowledge test for learner drivers that pertain to risks associated with carrying passengers. Both the handbooks and the knowledge test are important vehicles for raising awareness among young drivers, in their capacity as both drivers and as passengers, of the various issues raised in this report.

The licensing system also provides a powerful means of restricting young driver exposure to the negative influences of passengers. As noted earlier in this report, the graduated licensing systems in New Zealand and in 15 US states include a passenger restriction for initial licence holders. The restrictions vary in terms of the number and ages of passengers allowed, whether or not family members are exempted, and the duration of the restriction. All 15 US states, however, permit the young driver to carry passengers if there is also a licensed adult in the vehicle. The New Zealand restriction has been found to reduce crashes involving passengers among newly licensed drivers (Begg, et al., 1999) and a preliminary evaluation of a restriction in the US state of California has found a reduction in the number of teenage passenger deaths and injuries (Automobile Club of Southern California, cited in Williams, 2000b). While the overall effect of passenger restrictions on novice driver and passenger safety in most of these jurisdictions is not yet known, the general consensus around the world at present is that they are expected to be strongly positive (Williams, 2000b).

On this basis, it is recommended that the ACT Government consider introducing a passenger restriction for newly licensed probationary drivers with the following general characteristics:

- To maximally increase compliance with the passenger restriction, introduction of the restriction should not occur until community awareness and understanding of the positive and negative influences of passengers on driver behaviour is achieved. Members of the Think Tank considered that this would take about 2 years to achieve through implementation of the promotional, educational and other countermeasures recommended in this report.
- The restriction should last for anywhere between 6 and 12 months into the probationary period
- Passenger restriction regimes in the US and New Zealand should be examined closely to resolve issues such as the number, ages and gender of passengers allowed. In doing so, consideration should be given to the findings of this report which suggest that certain types of passengers, for example, young children, adults over 30 years of age, parents, a female if the driver is a male, spouses, and boyfriends/girlfriends, appear to place young passengers at no increased risk, or even at reduced risk.

- As part of such a restriction, consideration might be given to the idea of allowing young drivers to shorten the period of passenger restriction if they install on their vehicles technologies that decrease their exposure to risk while they are carrying passengers. Given that young drivers carrying passengers are over-involved in single-vehicle crashes and crashes involving excessive speed (Williams, 2000b), these technologies might include speed governors, ITS technologies that restrict speed to the posted speed limit, and lane departure warning devices. These devices are now mature and are commercially available.
- Alternatively, consideration might be given to implementation of a regime in which the carriage of passengers during the 6 to 12 months of licensed driving is regarded as a privilege and a passenger restriction is introduced only if the probationary driver accrues more than a maximum number of demerit points while engaging in traffic offences in the presence of passengers.

7.4.6 Enforcement

Enforcement provides a means of deterring risky driving behaviours through an integrated system of road laws, penalties and detection methods. A novel suggestion made by a member of the Think Tank was that, in the event that a probationary driver commits a traffic offence while carrying passengers, both the driver and the passenger(s) receive the same fine or share equally any fine incurred. While it is recognised that this general concept might be fraught with legal and administrative difficulties, the general notion that the passenger should take at least some responsibility for the overall safety of the vehicle and its occupants is a sound one.

A less severe, and more politically acceptable, option along similar lines would be to double the number of demerit points a probationary driver loses if they commit a traffic offence while carrying one or more passengers (or implement some other form of penalty system). A penalty regime such as this could be introduced following the expiration of the passenger restriction period (see above) to deter young drivers from engaging in high risk activities when they are eventually allowed to drive with passengers.

7.4.7 Research

Research is of itself an important injury countermeasure. Research is necessary in order to improve understanding of road crashes, to develop countermeasures, and to evaluate the effectiveness of road safety programs. Some further research is necessary before the various countermeasures described here can be fully developed and implemented. This includes:

- development of the materials for the promotional campaign;
- focus testing of parents of young drivers and passengers to gauge their level of awareness of the influence of passengers on driver behaviour and safety – given that they have been identified as a target group for the promotional campaign;
- focus testing of the themes and messages that underpin any proposed promotional campaign, including the likely reaction of young drivers and their parents to passenger restrictions;
- closer examination of the Norwegian "Speak Out Campaign";

- development of school-based materials; and
- closer examination of CRM and the principles that can be extracted from it to enhance communication and teamwork between drivers and passengers.

On the basis of the material reviewed in this report, it is expected that the package of measures recommended here will have a significant effect in reducing the incidence and severity of crashes involving young drivers and passengers in the ACT. It was not within the scope of this study, however, to quantify the predicted costs and benefits of the various countermeasures that were proposed here. It is recommended, therefore, that the costs and benefits be determined prior to development of any program initiatives. Finally, it is recommended that the program, if implemented, be properly evaluated to determine its effectiveness in reducing young passenger and driver deaths and serious injuries in the ACT.

7.5 Recommendations for Future Research

In the course of conducting the research reported here, it became apparent to the authors that relatively little research has been done in this area, despite the demonstratively large influence that passengers have on the safety of both the driver and themselves. Both the papers reviewed and the work conducted by the authors has highlighted the need for further research in a number of areas. These areas are summarised below.

From the papers reviewed, a number of issues requiring further research emerged. These include:

- The increased risk for young drivers of carrying young passengers is thought to be largely the result of distraction and risk taking factors relating to peer pressure. To the knowledge of the authors, however, no study has been undertaken in an attempt to untangle the relative contributions of these factors to crash risk. This is an important area for research.
- Within the limited scope of this study it was not possible to obtain detailed information about the design and preliminary evaluation outcomes of passenger restrictions implemented in New Zealand and the US. This information should be obtained in order to assist the design and implementation of passenger restrictions, if these are adopted in the ACT.
- To the knowledge of the authors, no research has been undertaken to directly relate, in a single study conducted in a single jurisdiction, estimates of casualty crash risk of drivers carrying passengers, as a function of relative sex, relative age, and relationship, to the behavioural mechanisms underlying these relative risks.

The work undertaken by the authors has also raised a number of important research issues that require further investigation. These include:

- To the knowledge of the authors, there is no data available in the ACT on the exposure patterns of novice drivers as they relate to the carriage of passengers. This is important information as it enables precise determination of the relative crash risks involved in carrying passengers of different numbers and types in the ACT. While some preliminary data was collected as part of this study, it is recommended that a detailed exposure study be undertaken in the ACT to enable better targeting of countermeasures at high risk individuals. It is possible to combine the collection of exposure data with an observational study of driving behaviours similar to that conducted previously be McKenna, et al. (1998).

- The present study examined the influence of factors such as the relationship between the driver and the passenger and the sex of the driver relative to the sex of the passenger as variables that moderate the safety of vehicle occupants. An important variable that was not examined is the personality of the driver and that of passengers and how this factor influences driver behaviour and moderates safety. To the knowledge of the authors, no research has been done previously in this area. Knowledge in this area would enable better targeting of countermeasures at high risk individuals.
- The number of participants who completed the telephone survey was insufficient to enable an examination of potential *interactive* effects on the role types played by passengers of the variables examined. It was not possible to determine, for example, whether a 16 to 24 year old passenger who is the friend of the driver plays a particular role type to a greater extent than a 16 to 24 year old passenger who is the child of the driver. In order to study potential interactive effects, therefore, additional research would be required where the telephone survey is administered to a larger sample of participants than in the present study.
- Similarly, the sample was too small to permit an examination of the effect of the age of the driver relative to the age of the passenger on the extent to which passengers play particular role types. Administration of the telephone survey to a larger sample as part of further research should enable the investigation of the effect of relative driver-passenger age.
- Previous research has shown that the effect on crash risk varies depending on the number of passengers also. Much of the present study concentrated on the effects of carrying a single passenger. While there was some indication in the focus groups that the number of passengers does influence driver behaviour, it was beyond the scope of the present research to examine this factor in more detail. It is recommended, therefore, that further research be conducted to investigate the effect of the number of passengers on the extent to which particular role types are played by passengers.

The overall objective of the current study was to identify novel behavioural methods for enhancing both driver and passenger safety in the ACT. In the final chapter of this report, recommendations for countermeasure development were outlined and discussed. The research conducted in the current study and previously, has served to establish that passengers do influence driver behaviour. It raises the issue of why traditional road safety countermeasures have focussed on the driver. The countermeasures proposed here assign an active role to both the driver and the passenger, providing new and alternative initiatives for countermeasure development that take into account the effects of passengers on driver behaviour. The ultimate aim, as with all road safety initiatives, is to enhance the safety of vehicle occupants and therefore, reduce the incidence of fatal and serious crashes.

It was emphasised that further research should be conducted to evaluate the proposed countermeasures prior to their implementation. As discussed, this is important to ensure their effectiveness. Finally, additional areas for future research were outlined and discussed. Critically, much of the information that would emanate from this research would assist further development of the proposed countermeasures. This further development would be achieved primarily through better targeting of countermeasures at high risk individuals and groups. The ultimate goal would be to elevate the effectiveness of the countermeasures to their full potential.

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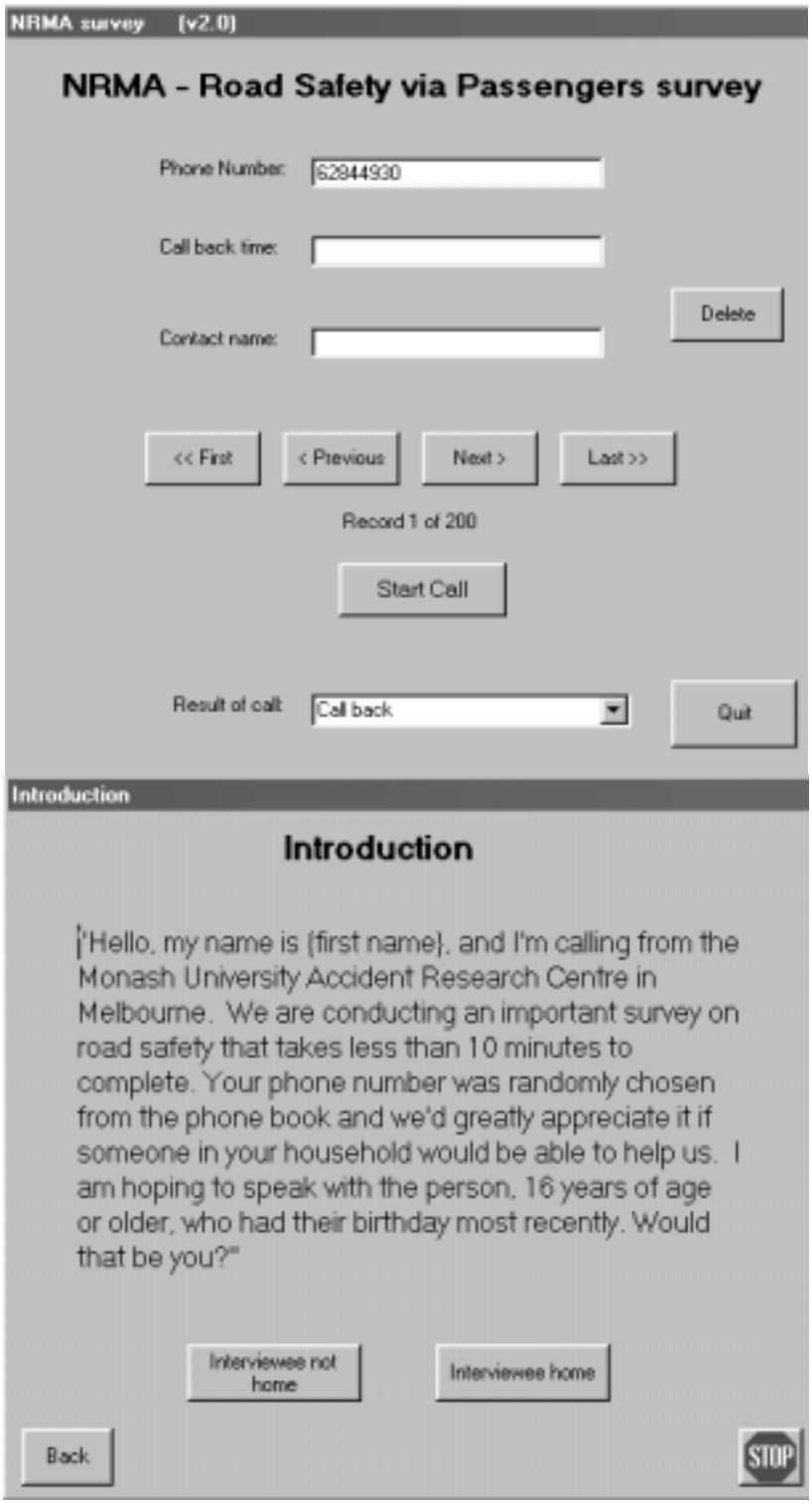
Appendix A Telephone Survey



Introduction

If the interviewee is not home....

"Would it be okay if I called back at a time when they will be available?"

"What time would be best?"

"Can you please tell me who I should ask to speak with?"

Don't forget to fill in the result of call.

End interview

Back

Introduction

If the interviewee is the person who answered the phone....

"The survey is about the ways passengers interact with drivers to influence road safety. The survey is voluntary, completely confidential, and you can stop at any time. Would you be able to help us?"

Otherwise, when you get the interviewee....

"Hello, my name is {first name}, and I'm calling from the Monash University Accident Research Centre in Melbourne. We are conducting an important survey on road safety that takes less than 10 minutes to complete, and I was hoping to ask you some questions. The survey is about the ways passengers interact with drivers to influence road safety. The survey is voluntary, completely confidential, and you can stop at any time. Would you be able to help us?"

Enter the sex of the interviewee:

If the interviewee agrees....

"Thanks, that's great. First of all, can you please tell me in which age group you belong?"

Back

Continue

STOP

Introduction

"The first questions deal with how much time you spend in a motor vehicle as a driver and as a passenger."

a) In the last month, have you driven a car? ○ Yes ○ No

b) In the last month, have you travelled in a car as a passenger? ○ Yes ○ No

If YES to both (a) and (b),
"When you are travelling in a car, what percentage of the time are you the driver? " 0 %

If YES to (a),
"Are you a professional driver?" (eg. Taxi, truck, bus)

If YES to (a) ONLY, do Part A
If YES to (b) ONLY, do Part B

If YES to both (a) and (b), half of sample will do **Part A** and the remaining half will do **Part B**

If NO to both (a) and (b), say:
"Thank you for your time and assistance."

Back | Part A - Drivers | Part B - Passengers | STOP

Driver questions

Part A - Drivers

If a professional driver:
"For the following questions, could I get you to think about the times when you drive a motor vehicle outside of work."
"In the past month, have you carried any passengers over 5 years of age?" ○ Yes ○ No

If NOT a professional driver:
"In the past month, have you carried any passengers over 5 years of age?" ○ Yes ○ No

If NO, "Thank you for your time and assistance"

If YES, go to the next question.

Back | Next question | STOP

Driver Questions

"What sort of licence do you have?"

- Full
- Probationary
- Learners
- Other

"How old were you when you first obtained that licence?"

0

"On average, how many hours would you spend driving a car over a seven day period?"

(Offer following suggestion if required -)
"Work out the average number of hours you would spend driving on a weekday. Next work out the average number of hours you would spend driving on a weekend. Add the two."

0

Back | Next question | STOP

Driver questions

"How often do you carry one passenger ONLY?"

- More than once a week
- Weekly
- Fortnightly
- Monthly
- Rarely

"How often do you carry two or more passengers?"

- More than once a week
- Weekly
- Fortnightly
- Monthly
- Rarely

Back | Next question | STOP

Driver questions

"In the past month, who were your main passengers?"

(a) "Did they include family members?"

"Which family members?"

Family member 1:

"What is the relationship?"

"If other, what is the relationship?"

"What is their age?"

Family member 2:

"What is the relationship?"

"If other, what is the relationship?"

"What is their age?"

Family member 3:

"What is the relationship?"

"If other, what is the relationship?"

"What is their age?"

Family member 4:

"What is the relationship?"

"If other, what is the relationship?"

"What is their age?"

Back | Next question | STOP

Driver Questions

(b) "Did your passengers include work colleagues?"

"Where they male or female or both?"

Work Colleague 1: Male Female

"What is their age?"

Work Colleague 2: Male Female

"What is their age?"

Work Colleague 3: Male Female

"What is their age?"

(c) "Did they include other friends?"

"Where they male or female or both?"

Friend 1: Male Female

"What is their age?"

Friend 2: Male Female

"What is their age?"

Friend 3: Male Female

"What is their age?"

"Of those passengers you identified (specify), which one would you carry the most?" (don't include any passengers under 5 years of age)

Back | Next question | STOP

Driver questions

This question is only for people whose main passenger is 17 years of age or older

On the occasions in the past month when you carried your (main driver) as a passenger, why didn't they drive themselves? Answer either YES or NO for each of the following:

- [ ] They do not drive
- [ ] They were travelling in your car
- [ ] They had been drinking alcohol or taking drugs or medication that affect driving ability
- [ ] They were ill or injured
- [ ] They prefer not to drive in busy traffic
- [ ] They prefer not to drive at nighttime
- [ ] They were not familiar with the roads
- [ ] They were tired
- [ ] Other

Back | Next question | STOP

Driver questions

For the following questions, could I get you to think about the times when you have carried your (main driver) as a passenger.
(a) How likely would your (main driver) 's presence in the car influence you to do each of the following using a scale of 0 to 10, where 0 means not likely to influence you, 10 means very likely to influence you, and 5 means somewhat likely to influence you. Also, you can choose any number in between.
There are no right or wrong answers, we are interested in your honest opinion, and remember the information you provide here is completely confidential.

0	To speed
0	To overtake
0	To drive too close to the car in front
0	To abuse other drivers or road users
0	To drive slower
0	To drive through a red or amber traffic light
0	To drive if you've been drinking alcohol or taking drugs
0	To spin the wheels or skid
0	To flash the headlights at other drivers or road users
0	To honk the horn at other drivers or road users

Back | Next question | STOP

Driver questions

(b) Still thinking about the times when you carry your (main driver) as a passenger...

How likely would your (main driver) be to tell you to do each of the following using a scale of 0 to 10, where 0 means not likely and 10 means very likely. You can choose any number in between. Also, please say if something does not apply to you.
(Repeat question for first statement)

0	Tell you to slow down if you are speeding
0	Tell you to overtake
0	Tell you if you are driving too close to the car in front
0	Tell you if you are driving too slow
0	Tell you about the traffic rules
0	Tell you about driving techniques (like checking your blind spot)
0	Tell you how to get where you are going
0	Tell you to drive through a red or amber traffic light
0	Tell you to drive if you have been drinking alcohol or taking other drugs
0	Tell you to break the traffic rules

Back | Continue | STOP

Driver questions

0	Tell you to flash the headlights at other drivers or road users
0	Tell you about traffic hazards up ahead
0	Tell you if you are driving too fast
0	Tell you if there is a speed camera/booze bus close by
0	Tell you to honk the horn at other drivers or road users
0	Tell you to abuse other drivers or road users
0	Tell you to speed up if you are driving too slowly
0	Tell you to drive close to the car in front
0	Tell you to spin the wheels or skid

Next question

Back | STOP

Form1

(c) For the following statements,

How likely would your (main driver) be to do each of the following while you are driving using a scale of 0 to 10, where 0 is not likely and 10 is very likely. Again, you can choose a number in between. Also, please say if a statement does not apply to you.
(repeat question for first statement)

- 0 Answer your mobile phone if it rings
- 0 Talk to you a lot
- 0 Read the street directory
- 0 Talk to you to keep you awake if you are tired
- 0 Read the road signs and street numbers
- 0 Look after the children
- 0 Get items in the car that you can't reach
- 0 Adjust the radio or heater of the car

Go to focus group questions.

Back | Focus group | STOP

Passenger questions

Part B - Passengers

"The following questions deal with your experiences as a passenger."

"On average, how many hours would you spend travelling in a car as a passenger, over a seven day period?"

(Offer following suggestion if required -
"Work out the average number of hours you would spend travelling in a car as a passenger on a weekday;
Next, work out the average number of hours you would spend travelling as a passenger on a weekend.
Add the two.")

0

Back | Next question | STOP

Passenger questions

"How often do you travel in a car when you are the only passenger?"

- More than once a week
- Weekly
- Fortnightly
- Monthly
- Rarely

"How often do you travel in a car as a passenger when there is at least one other passenger?"

- More than once a week
- Weekly
- Fortnightly
- Monthly
- Rarely

Back | Next question | STOP

Passenger questions

"In the past month, who were normally the drivers when you were a passenger?"
"Were they family members?"
"Which family members?"

Family member 1:
"What is the relationship?"
"If other, what is the relationship?"
"What is their age?"

Family member 2:
"What is the relationship?"
"If other, what is the relationship?"
"What is their age?"

Family member 3:
"What is the relationship?"
"If other, what is the relationship?"
"What is their age?"

Family member 4:
"What is the relationship?"
"If other, what is the relationship?"
"What is their age?"

Back | Next question | STOP

Passenger questions

(b) "Did they include work colleagues?"
"Were they male, female or both?"

Work Colleague 1: "What is their age?" ○ Male ○ Female

Work Colleague 2: "What is their age?" ○ Male ○ Female

Work Colleague 3: "What is their age?" ○ Male ○ Female

(c) "Did they include other friends?"
"Were they male, female or both?"

Friend 1: "What is their age?" ○ Male ○ Female

Friend 2: "What is their age?" ○ Male ○ Female

Friend 3: "What is their age?" ○ Male ○ Female

"Of the drivers you identified, who would be the driver the most often when you are a passenger?"

Back | Next question | STOP

Passenger questions

"For the following questions, could I get you to think about the times when you have travelled as a passenger while your (main driver) was driving."

(a) How likely do you think your presence in the car influenced your (main driver) to do each of the following, using a scale of 0 to 10, where 0 is not likely to have influenced them, 10 is very likely to have influenced them, and 5 is somewhat likely. Also you can choose any number in between.

There are no right or wrong answers, we are interested in your honest opinion, and remember the information you provide here is completely confidential.

0 To speed
0 To overtake
0 To drive too close to the car in front
0 To abuse other drivers or road users
0 To drive slower
0 To drive through a red or amber traffic light
0 To drive if they've been drinking alcohol or taking other drugs
0 To spin the wheels or skid
0 To flash the headlights at other drivers or road users
0 To honk the horn at other drivers or road users

Back | Continue | STOP

Passenger questions

b) Still thinking about the times when you have travelled as a passenger while your (main driver) was driving, how likely would you be to tell your (main driver) to do each of the following using a scale of 0 to 10, where 0 is not likely 10 is very likely, and 5 is somewhat likely. Also, you can choose any number in between. And, please say if the statement does not apply to you.
(Repeat question for first statement)

0	Tell them to spin the wheels or skid
0	Tell them to drive close to the car in front
0	Tell them to speed up if they are driving too slowly
0	Tell them to abuse other drivers or road users
0	Tell them to honk the horn at other drivers or road users
0	Tell them there is a speed camera/booze bus close by
0	Tell them if they are driving too fast
0	Tell them to break the traffic rules
0	Tell them about traffic hazards up ahead
0	Tell them to flash the headlights at other drivers or road users

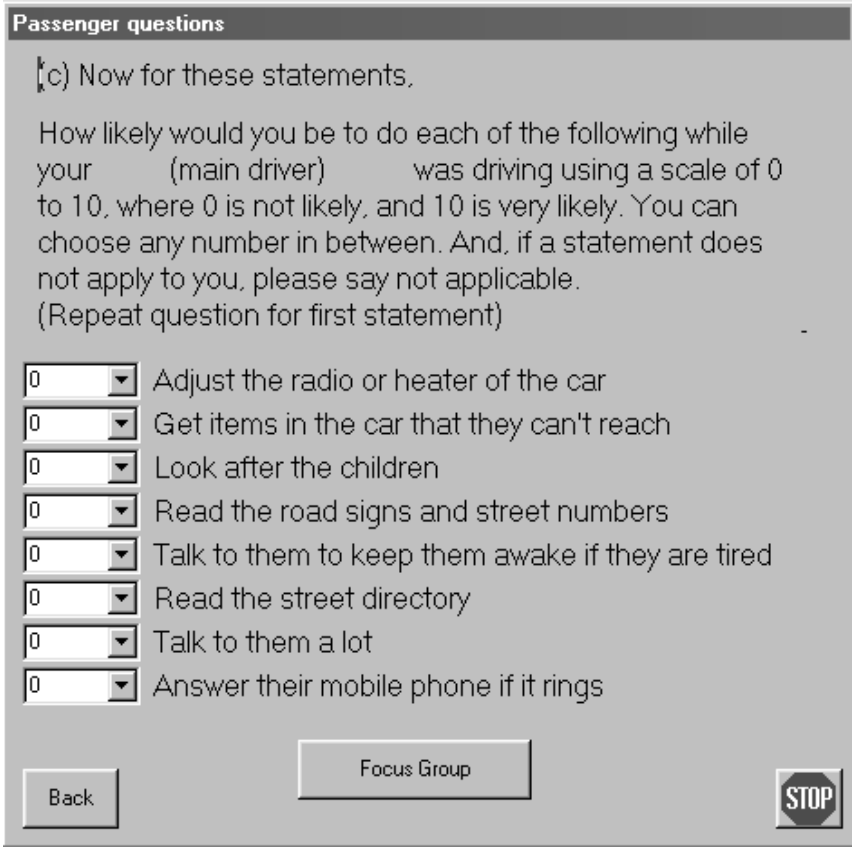
Back | Continue | STOP

Passenger questions

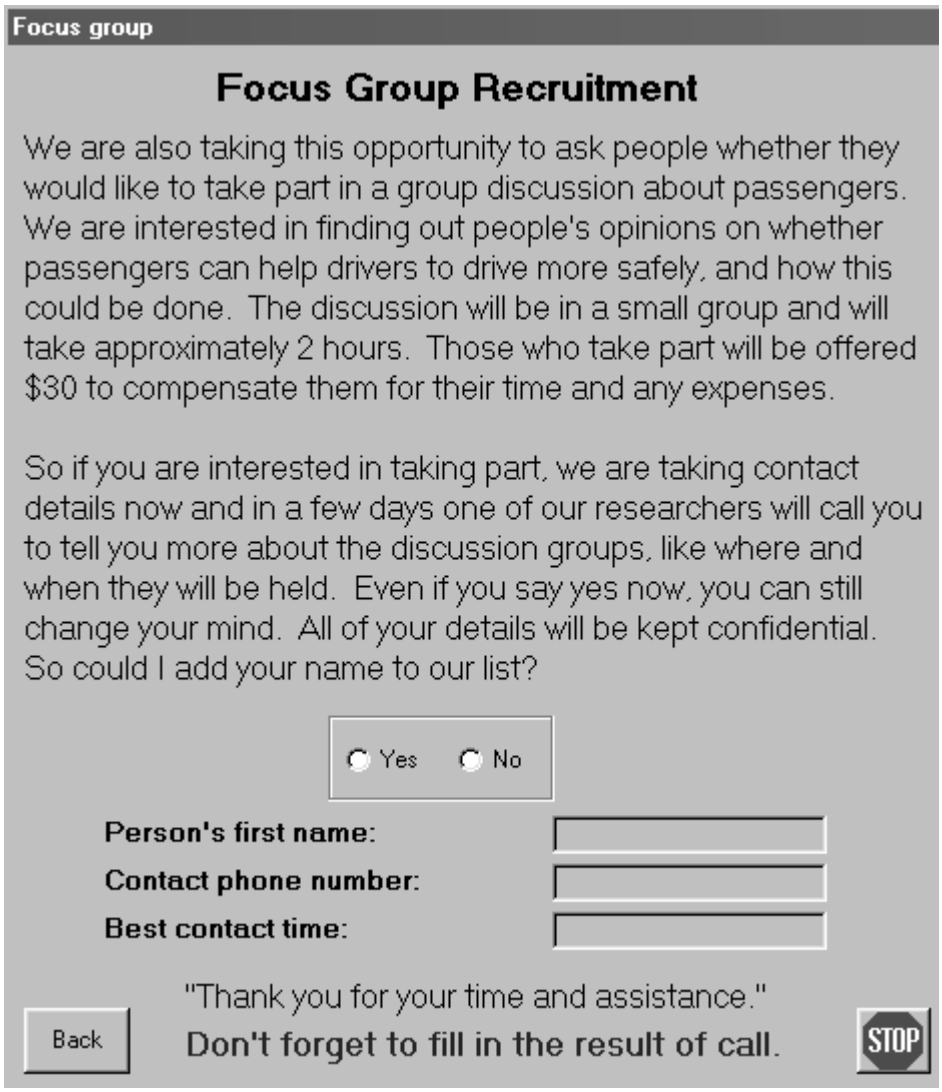
0	Tell them to drive if they have been drinking alcohol or taking other drugs
0	Tell them to drive through a red or amber traffic
0	Tell them how to get where they are going
0	Tell them about driving techniques (like checking their blind spot)
0	Tell them about the traffic rules
0	Tell them if they are driving too slowly
0	Tell them if they are driving too close to the car in front
0	Tell them to overtake
0	Tell them to slow down if they are speeding

Next question

Back | STOP


Passenger questions
(c) Now for these statements,
How likely would you be to do each of the following while your (main driver) was driving using a scale of 0 to 10, where 0 is not likely, and 10 is very likely. You can choose any number in between. And, if a statement does not apply to you, please say not applicable.
(Repeat question for first statement)
0 Adjust the radio or heater of the car
0 Get items in the car that they can't reach
0 Look after the children
0 Read the road signs and street numbers
0 Talk to them to keep them awake if they are tired
0 Read the street directory
0 Talk to them a lot
0 Answer their mobile phone if it rings
Back
Focus Group
STOP

Appendix B Focus Group Recruitment



Focus group

Focus Group Recruitment

We are also taking this opportunity to ask people whether they would like to take part in a group discussion about passengers. We are interested in finding out people's opinions on whether passengers can help drivers to drive more safely, and how this could be done. The discussion will be in a small group and will take approximately 2 hours. Those who take part will be offered $30 to compensate them for their time and any expenses.

So if you are interested in taking part, we are taking contact details now and in a few days one of our researchers will call you to tell you more about the discussion groups, like where and when they will be held. Even if you say yes now, you can still change your mind. All of your details will be kept confidential. So could I add your name to our list?

Yes No

Person's first name:

Contact phone number:

Best contact time:

"Thank you for your time and assistance."

Back

Don't forget to fill in the result of call.

STOP

Appendix C Information to Focus Group Participants

C-1 Explanatory Statement for Parents/Guardians of Participants Aged 16 and 17 years

Behavioural Strategies for Enhancing Road Safety through Passengers

Dr. Michael Regan of the Monash University Accident Research Centre in Clayton, Victoria is conducting research investigating the potentially positive influences that passengers may have on the behaviour of drivers and the possible roles that passengers can play in enhancing the safety of drivers, and consequently, their own safety. Identifying the ways in which passengers can play a positive role in influencing the behaviour of the driver provides another avenue for helping to reduce the number of serious crashes and the road toll.

If you are happy for your son or daughter to take part in the project, they will be asked to participate in a small discussion group, which will be led by an experienced and trained researcher. The discussion group will begin with an explanation of the rationale behind the project, and will be followed with a group discussion of views relating to the current roles of passengers and whether passengers can be a positive influence and if they can, how this can be achieved. The group discussion will take approximately 2 hours. Your son or daughter will be offered $30 to compensate them for their time and any expenses involved in travelling to the session.

No findings that could identify any individual participant will be published. Only members of the research group will see the information your son or daughter provides. To ensure the accurate recording of information, the discussion group will be videotaped, but the tapes will be erased at the end of the project. No names will be put into any written records of the group discussion, with all names replaced with numerical codes. All other data from this project will be kept at the Monash University Accident Research Centre. Only members of the research group will have access to this data, which must be stored for five years under university regulations without any identifying information.

Participation in this research is entirely voluntary, and you are free to withdraw your son or daughter at any time and for any reason. If you agree to your son or daughter participating in this project could you please sign the attached consent form and give it to your son or daughter to bring with them to their discussion group. If you have any queries, or would like to be informed of the aggregate research findings, please do not hesitate to contact me on telephone (03) 9905 1838 or fax (03) 9905 4363.

Should you have any complaint concerning the manner in which this research (project number 2000/087) is conducted, please do not hesitate to contact The Standing Committee on Ethics in Research Involving Humans at the following address:

The Secretary
The Standing Committee on Ethics in Research Involving Humans

Monash University
Wellington Road
Clayton Victoria 3800
Telephone (03) 9905 2052 Fax (03) 9905 1420
Email: SCERH@adm.monash.edu.au

Thank you

Dr Michael Regan

Senior Research Fellow

C-2 Explanatory Statement for Participants

Behavioural Strategies for Enhancing Road Safety through Passengers

Dr. Michael Regan of the Monash University Accident Research Centre in Clayton, Victoria is conducting research investigating the potentially positive influences that passengers may have on the behaviour of drivers and the possible roles that passengers can play in enhancing the safety of drivers, and consequently, their own safety. Identifying the ways in which passengers can play a positive role in influencing the behaviour of the driver provides another avenue for helping to reduce the number of serious crashes and the road toll.

If you agree to take part in the project, you will be asked to participate in a small discussion group, which will be led by an experienced and trained researcher. The discussion group will begin with an explanation of the rationale behind the project, and will be followed with a group discussion of views relating to the current roles of passengers, and whether passengers can be a positive influence and if they can, how this can be achieved. The group discussion will take approximately 2 hours. You will be offered $30 to compensate you for your time and any expenses involved in travelling to the session.

No findings that could identify any individual participant will be published. Only members of the research group will see the information you provide. To ensure the accurate recording of information, the discussion group will be video-taped, but the tapes will be erased at the end of the project. No names will be put into any written records of the group discussion, with all names replaced with numerical codes. All other data from this project will be kept at the Monash University Accident Research Centre. Only members of the research group will have access to this data, which must be stored for five years under university regulations, without any identifying information.

Participation in this research is entirely voluntary, and you are free to withdraw at any time and for any reason. If you agree to participate could you please sign the attached consent form and bring it with you to your discussion group. If you have any queries, or would like to be informed of the aggregate research findings, please do not hesitate to contact me on telephone (03) 9905 1838 or fax (03) 9905 4363.

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Clayton Victoria 3800
Telephone (03) 9905 2052 Fax (03) 9905 1420
Email: SCERH@adm.monash.edu.au

Thank you

Dr Michael Regan

Senior Research Fellow

C-3 Consent Form for Parents/Guardians of Participants Aged 16 and 17 years

Behavioural Strategies for Enhancing Road Safety through Passengers

I agree that ……..……. (full name of participant) may take part in the above Monash University research project. The project has been explained to ……. (participant's name) and to me, and I have read the Explanatory Statement, which I keep for my records.

I understand that agreeing to take part means that I am willing to allow ……..(participant's name) to:

· Take part in a discussion group concerning the roles of passengers in influencing the behaviour of drivers, and

· Allow the group discussion to be videotaped.

I understand that any information ……..(participant's name) provides is confidential and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I also understand that ……. (participant's name) participation is voluntary, that I can choose not to participate in part or all of the project, and that s/he can withdraw at any stage of the project without being penalised or disadvantaged in any way.

Participant's Name: ……. (Please print)

Participant's Age: ……..

Parent/ Guardian's Name: …….. (Please print)

Your relation ship to the participant: …….

Parent/ Guardian's Signature: …… Date: ……

C-4 Consent Form for Participants

Behavioural Strategies for Enhancing Road Safety through Passengers

I agree to take part in the above Monash University research project. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that I am willing to:

· Take part in a discussion group concerning the roles of passengers in influencing the behaviour of drivers, and

· Allow the group discussion to be videotaped.

I understand that any information I provide is confidential and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I also understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

Participant's Name:…….. (Please print)

Signature:…….. Date:……

Appendix D Focus Group Discussion Guide

For those of you who are drivers and carry passengers, in your experience, what roles do your passengers play? What do they do while you are driving?

- What do you think about these roles that your passengers play or the things that they do?
  - Is driving made easier? In what ways? Do you think that it is good to have an extra set of eyes?
  - Is driving made more difficult? In what ways?
  - Do your passengers do things that help to make you a safer driver? What is it that they do?
  - Do your passengers do things that make you a less safe driver? What? Have these things ever caused you to have a crash, or a near crash?
  - Do you think that you drive differently depending on your relationship with your passenger? I.e. whether they are:
    - older, younger, or the same age as you;
    - same gender, or opposite gender;
    - related or not-related (spouse vs brother/sister vs parent/child)
    - familiar or stranger
    - friend or acquaintance
    - more experienced or less experienced driver
    - good driver or bad driver

    In what ways? Who are you most likely to take advice from?
    - Do you drive differently depending on the number of passengers that you are carrying and who they are (i.e. friends, parent and children)? In what ways?

For those of you who are passengers, what roles do you play while travelling as a passenger? What do you do?

- Are you trying to be helpful? Is your intention to make driving easier for the driver?
- Do you do anything that makes driving difficult for the driver? Do they get annoyed with you if you do or say certain things? Like what?
- Do you do any things that make it safer for you and any other passengers and the driver?
- Does your input as a passenger differ depending on who the driver is:
  - older, younger, or same age
  - same gender, or opposite gender
  - related or non-related
  - familiar or stranger
  - friend or acquaintance
  - more experienced or less experienced driver

- good or bad driver

In what ways? Who are you most likely to give advice to?

Who is most likely to act on your advice?

What things do you think that passengers should be doing to help drivers to drive more safely?

If someone said to you that the road toll could be cut in half if passengers played a more active and positive role, how do think as a community that we could encourage passengers to play a more active and positive role? Or don't you think that this is possible?

Similarly, if someone said to you that the road toll could be cut in half if passengers played a more active and positive role, how could we encourage drivers to accept and act on this advice?

Appendix E Focus Group Demographic Questionnaire

MONASH UNIVERSITY ACCIDENT RESEARCH CENTRE

Behavioural Strategies for Enhancing Road Safety via Passengers

A. Could you please complete the following item:

What is your age in years? ☐

B. The following items deal with how much time you spend in a private vehicle as a driver and as a passenger:

(i) In the last month, have you driven a private vehicle?

- ❑ Yes
- ❑ No

(ii) In the last month, have you travelled in a private vehicle as a passenger?

- ❑ Yes
- ❑ No

If you answered YES to both (i) and (ii) then,

When you are travelling in a private vehicle, what percentage of the time are you the driver?

☐

If you answered YES to (i) only, answer Part C only.

If you answered YES to (ii) only, answer Part D only.

If you answered YES to both (i) and (ii), answer both Parts C and D.

C. The following items deal with your experience as a driver of a private vehicle.

What sort of driver's licence do you have?

- ❑ Full
- ❑ Probationary (Ps)
- ❑ Learners (Ls)
- ❑ Other

How old were you when you first obtained that licence?

On average, how many hours would you spend driving a private vehicle over a seven day period (ie. across the weekdays and the weekend)?

How often do you carry one passenger ONLY?

- ❑ More than once a week
- ❑ Weekly
- ❑ Fortnightly
- ❑ Monthly
- ❑ Rarely

How often do you carry two or more passengers?

- ❑ More than once a week
- ❑ Weekly
- ❑ Fortnightly
- ❑ Monthly
- ❑ Rarely

D. The following questions deal with your experience as a passenger of a private vehicle.

On average, how many hours would you spend travelling in a private vehicle as a passenger over a seven day period (ie. across the weekdays and the weekend)?

How often do you travel in a private vehicle when you are the only passenger?

- ❑ More than once a week
- ❑ Weekly
- ❑ Fortnightly
- ❑ Monthly
- ❑ Rarely

How often do you travel in a private vehicle as a passenger when there is at least one other passenger?

- ❑ More than once a week
- ❑ Weekly
- ❑ Fortnightly
- ❑ Monthly
- ❑ Rarely

Appendix F Focus Group Transcriptions

F.1 Focus Group 1

Question	Participant	Response
FOCUS GROUP 1 – TUESDAY 20 JUNE 2000		
For those of you who are drivers and carry passengers, in your experience, what roles do passengers play? What do they do or say while you're driving?	F 1199	Give directions
	F 1107	Navigate
	F 1606	Tell you how fast you're going, if you're in the right gear
	F 1107	My wife tells me if I'm speeding - I break the speed limit a lot - tells me I'm going over 90 etc
	F 1606	She's a back seat driver - it can be good or bad to have a back seat driver. Depends on personality of driver, as to whether they'll accept it or go agro and won't do what the passenger says, or gets distracted
	F 1107	I appreciate what my wife does
What would be a positive thing that a back-seat driver could do?	F 1606	You may not see a vehicle coming from a side street if you're distracted. But when they pick on your driving, that's another thing

Question	Participant	Response
	F 1199	Passengers can be good company on a long trip
	F 1534	If you're in an unfamiliar area and don't know your way around, somebody who can tell you where to turn, read street signs etc is helpful
What would be some of the negative things that a back-seat driver or passenger would do that might annoy you?	F 1534	Kids are distracting in the back-seat, especially on long trips when they fight, argue etc
So it's a distraction if it takes your mind off the driving task?	F 1107	Yes
	F 1640	When you're learning to drive, you have to have a person sitting next to you. It's very helpful. You need them. But they can also be a distraction when they're telling you to do this, this, this and I'd just like to concentrate on holding the steering wheel or going straight ahead
For those of you who are passengers, what roles do you play while travelling as a passenger? What is it that you do or say?	F 1606	Depends on who the driver is. With my daughter-in-law, I say nothing but I would tell my son to slow down
	F 1107	I just sit there and try and relax
	F 1356	With your friends, you're a passenger and you just buckle up and hold on. With your mum, my brother and sister are a distraction more than anything
	F 1629	I might thump on the brake as a passenger in a negative way. I drive differently to other people. I tend to drive quite close to the car in front of me. My wife will speak up. She won't say I'm too close, but she'll say the other car is driving too fast. This reminds me to pull back - it's a signal from her that she's uncomfortable with my driving

Question	Participant	Response
	F 1640	My friend just got her "P's". I was in her car with four other passengers and it was very scary. She was so scared she just looked straight ahead - she missed a stop sign and was going at 20 km an hour. She almost ran onto a curb. We didn't want to seem scared because she would then have been more scared but I said "You saw the stop sign, didn't you?" and she said "I saw it, I just didn't know what to do". The others told me not to be like a "mum"
	F 1649	I was a passenger driving along a dirt road with my team and we couldn't see because of all the dust, but we knew there was a truck ahead of us. Nobody said anything and the driver kept driving. The next thing we knew, the truck had stopped and we ran right into the back of it. No-one was hurt but later the driver asked us why we didn't speak up. There were two psychologists in the car and they didn't speak up either
	F 1883	In Canberra, I'd never be told to slow down unless I was doing exceptional speeds. Almost everyone here accepts that people drive faster than the speed limit so passengers would generally intervene over speeding. They might comment on burn out, silly things like that though
	F 1813	It depends on who's in the car. I teach my kids to drive and we talk a lot about speed. If you're with a friend, you know they've got their licence so you try and relax more rather than telling them what to do
Do passengers make driving easier for you?	F 1606	Yes
	F 1813	Depends on the situation and what else is going on in the car. The kids can be very distracting

Question	Participant	Response
	F 1883	I don't appreciate it when passengers say "Did you see that sign?" or whatever because I tend to see everything I need to see. Passengers may give me an extra set of eyes but I wouldn't trust their judgement - my life and their lives are in my hands. I would rather be the driver than a passenger any day as I trust my judgement more than anyone else's
	F 1813	You should always make your passengers feel comfortable though. You may feel comfortable and in charge with the speed but if your passengers are hanging on and you feel the tension in the car increasing, it's telling you something - you must think of them and perhaps slow down, then everybody is happy
	F 1629	Age is a factor. When I was young, I'd go flat out but now that I'm older I know my reactions are not as good and I can be easily distracted, therefore I accept criticism. I used to love driving but now I hate it - when I go to Sydney tomorrow I'm going to ask one of my staff to drive
	F 1894	I used to sleep in the car when my husband drove. I don't now - I stay awake to make sure he's stays awake
	F 1199	When I visit friends in Sydney, I prefer them to drive me around in my car as they know their way around. I prefer this to them giving me directions. In Canberra, I don't worry about it
When you are a passenger and you offer a bit of advice, is it your intention to be helpful?	F 1356	No - if they're going too fast, you speak up, but not to be helpful or distracting. My dad drives very fast and even though we tell him to slow down, he won't or will only slow down a bit. He finds it annoying
	F 1606	Driver's personality is a factor. Some drivers accept advice and some won't

Question	Participant	Response
	F 1534	I drive in a car pool that includes a young driver, who used to drive in a jerky way. By us giving him hints, he's improved over the past 6 months, e.g. stay on your side of the road, not to overtake, when to take the high beam down etc. We would worry about things he didn't notice. At first, we'd just let it go, but if he kept repeating mistakes, we'd tell him. He seemed to be happy to take our advice - it may have been because we were senior to him
	F 1629	I know an 84 year old driver. She's easily distracted when talking to others when driving. She never saw anything that was going on outside, never used indicators etc and was dangerous. I told her to stop driving 10 years ago and refused to drive with her, but she wouldn't stop
	F 1199	If travelling with a work colleague, I won't say anything even if he/she is a really bad driver, because I have to work with that person every day
	F 1199	I would tell a driver to slow down if he/she was speeding excessively (eg 140 km in 100 km zone). It would make me very uncomfortable
From a driver's perspective, do you think that your passengers do things that make you a safer driver?	F 1107	I'd say "Stop the car"
	F 1606	I'd say "Did you see the speed sign?"
	F 1813	It would help the driver if passengers don't argue in the car - distracting.
	F 1883	I think that driving is fairly simple, not at all distracting, but some people just don't have the ability to be good drivers no matter no how many tips they get. Perhaps they need more education in a controlled environment rather than

Question	Participant	Response
		restricting them. I learnt to drive on a farm with lots of dirt tracks. Had lots of near misses, but they were the best thing for me - near misses with no-one else on board
	F 1629	I would prefer passengers who feel uneasy about my driving to speak up - not to drop hints, but be firm, otherwise I get cranky
	F 1894	Agree
	F 1356	The relationship between the driver and the passenger is so important. It's completely different if I drive with a friend or my mum. With my mum, I can only help by reading the map - she's easily distracted by anything else, like fiddling with the radio or heater
	F 1640	Our age group is very much like that. We think we have our "Ps", so look at me! You know they're not experienced but you just sit in the car and wander what will happen. You don't want to say anything as they're your friends and you don't want to hurt them as they're just learning
	F 1356	My age group is even younger. If you say anything, they say "You're a pussy" or whatever. With guys, if you speak out, they say "You don't have to come". It may even make them go faster. They speed around corners, do "burn outs" and I don't say anything. I don't personally mind but even I if I did, I'd just sit back. I have the choice of not getting into the car with them again, but do, because I don't have a car and they do
	F 1469	It depends on the driver's skill level. When I was on my "Ls", I would take advice from my brother but now that I'm more experienced, on my "Ps", advice distracts me rather than helps me

Question	Participant	Response
	F 1640	Passengers can be helpful. My friend recently had an accident. I was there but wasn't watching out, or I may have helped prevent the accident. Passengers may see cars coming out of side roads that the driver misses
	F 1356	It depends on whether or not the driver asks for your help. If they don't ask for your help, your comments can be distracting
	F 1640	If you're having a conversation though, particularly if it's intense, both driver and passenger won't concentrate - so passenger should speak up if they see something
Does anybody have similar experiences where they may become a bit more cautious if the person is fatigued etc, so watch the road to assist the driver?	F 1107	Sometimes you can't. I have a friend who tends to just pull over to the side of the road if she remembers something but I can't do anything about it
	F 1813	On long trips, when you're getting tired, it's handy to have someone chatting to you, whereas on short trips, you feel you're handling everything well and just want some peace and quiet - their chatting can be annoying
What can the passenger do to prevent a crash or a near crash?	F 1883	I was with friends and I casually remarked "We better put our seat belts on in case we crash". We all did. Ten minutes later we crashed. It's possible the driver (a male) thought that now we have our seat belts on, he drove a bit harder
	F 1356	My friend was going to drive me home. He had his "Ps" but was really out of it. I didn't let him drive - but otherwise he would have
	F 1894	Someone who works for me used to be an ambulance driver and he's a very good driver. I feel very safe with him when I'm driving him around - it has an

Question	Participant	Response
		effect on me as it makes me drive more safely
From the passengers perspective again, do you do or say anything that might make it safer for you, the driver and other passengers?	F 1199	If I have mates in the car I prefer it if they look out for the CD players etc so I don't have to worry about it. I just ask them to do it. If I'm alone, I try and do it myself which can be distracting. I've been involved in an accident where I was a passenger and my mum just looked down and we hit a car - it freaks you out a bit
	F 1883	Another pair of eyes is always helpful so long as the person is not distracting the driver. You share the responsibility if you're both paying attention. You must trust each other. Passengers can also be distracting if they do things like offer you a cigarette then dropping it etc
	F 1894	Phones can be distracting. Even with hands free, you still have to press buttons
	F 1813	If my husband drives and my kids are playing up, I'll ask them to be quiet to make it easier for him
	F 1640	On the way here, my windows fogged up and we were approaching road works. I became quite nervous about hitting the road works and asked my mum to clean the window, which she did. If she hadn't been there, I would have had to do it, and probably would have done something wrong
Do you think you have to tell a passenger if you're the driver to assist you or is it just a given that in some instances they'll actually tell you things?	F 1640	You don't want the passenger to butt in with stupid things

Question	Participant	Response
	F 1883	(to 1640) If your mum hadn't been with you would you have pulled over or just tried to wipe the window down while driving?
	F 1640	I may have waited until there was a gap in the cars coming towards me and then quickly wiped it or I probably would have just kept going
	F 1199	It also depends on whose car it is. I drove my sister's car and had no idea where anything was. I needed a quick crash course on where the lights were etc
	F 1813	Driving school is useful. When my son gets into a car, he positions himself and checks it all - it's what everyone should do
From the driver's perspective, do you think that you drive differently depending on your relationship with your passenger? Or from the passenger's perspective, does your input differ depending on your relationship with the driver? Eg. if the driver was older than you?	F 1883	Older people are more easily affected so that would slow you down. I would say something if he was taking my life in his hands
	F 1534	If you feel your life is in danger, of course you'd speak up, regardless of age of driver
	F 1640	Older people are more tolerant. I could say something to my aunt and she'd accept it but I won't say it to my friends because they'll knock you down with "Oh, you're a mother!"
Would you say something to someone younger than you?	F 1606	Depends on who the driver is
	F1199	They don't listen. My younger sister drives too fast but if I tell her, it makes no difference. She'll learn her lesson when she has an accident. My friend had a bad accident - almost killed himself - but he learnt and now he's probably a safer driver than I am. Mostly, they don't listen so I just don't bother saying anything

Question	Participant	Response
	F 1883	In past year, I've told a younger driver to slow down twice or I'm getting out. I'll yank the hand brake and get out. He got the message because he wanted to go where I was going, but otherwise wouldn't have paid me any attention - even though I was quite assertive
	F 1199	My friend is a policeman. He'll pick on my driving but when he drives, he speeds, goes through stop signs etc. So as far as I'm concerned, he can tell me what he likes and I'll ignore him
What about comparing someone who is more experienced versus a less experienced driver than you? Are you more likely to take advice from someone you know is more experienced than from someone less experienced?	F 1883	You'll only listen if you think you've got something to learn from the person. otherwise you don't listen as you already know it
	F 1606	It goes right over your head
	F 1356	I've only had one lesson. Right now I'd take any advice that anyone would want to give me, but in a couple of years time, I'll be less willing to learn and could be distracted by advice
	F 1629	I would listen to my friend who was an ambulance driver because I know he's a very good driver. I think he'd listen to me too if he knew he was making me uncomfortable. Your perception of the person is important and the degree of training or professionalism they have
Would you take input from a person who was a bad driver or would you be more willing to listen to someone who is a good driver?	F 1629	If I was driving and I know the passenger is a bad driver, I may get grumpy if they tell me to slow down, use indicator etc, but would still listen
	F 1883	If the passenger wasn't there, you'd drive at your normal pace

Question	Participant	Response
	F 1107	I drove a friend and his wife recently on a long trip. The wife didn't say anything until the end when she said I was a jumpy driver. I took that on board - I didn't snarl at her even though I know she's not a particularly elegant or smooth driver
As a passenger, would you be more likely to say things if you know the person is a bad driver or a less experienced driver?	F 1199	If I was worried about my safety, I would
	F 1629	Everybody has been educated on using indicators, speed limits etc. We don't promote the reasons for doing these things though. I think all drivers should go through a training process at least every 5 years, with theoretical and practical work. The aviation cockpit resource management (CRM) system could be used, where you learn to use the other people in the car as well
	F 1883	Cockpit resource management happens anyway if you're a smart driver. If you're a smart driver and you have a distractive person on board you will ignore them. If they are actually helping you and you trust them, then it's a bonus. If they are only good as an extra pair of eyes, you might listen to them, but you don't always trust what they say.
	F 1629	To be a smart driver in the first place, you've got to have that basic training and experience.
	F 1883	How do you educate it to people who don't have that though?
What happens if the driver is the same age as you? A peer? As a passenger, are you more or less likely to say things to them?	F 1813	I don't think it's related. My nephew was saying that he couldn't let his mum teach him to drive because she always had her hand on the hand-brake, and that that would lead to an accident. But, he learnt to drive with his good friend, because his friend would just let him drive and only remind him of

Question	Participant	Response
		little things. It seems to be more related to who can help you and not take over.
	F 1883	I think it doesn't matter what the age of the person you are driving with. Whether you are a passenger or a driver, what matters is how you respect that person. It determines how you drive with that person in a car, and how you react. If you don't respect them, then you don't listen.
But, does getting into a car as a younger/new driver with a friend of the same age make you want to show off?	F 1883	Definitely
	F 1356	I don't think so. I probably drive more carefully with passengers, I wouldn't drive fast or anything, but my friends would drive faster to show-off. My male friends are the ones who have cars, I can't generalise to my female friends, but it's mostly the males who show-off. I think age is important, even though I'm really close to my grand-dad and I don't like his driving because he goes too slow, I won't say anything at all to him, but I will with my mum, but not with my friends.
	F 1813	My mum is a terrible driver, so we just stay out of the car
	F 1534	Age has something to do with it. We respect our elders, that's the way we are brought up, but still overriding this is safety, if you don't feel safe then you say something, irrespective of the driver's age.
	F1640	I think that it is age related. It would be very unlikely that anyone else at this table, apart from F 1356, that would go "come on, rev it up", because I have a couple of times. I wouldn't say it to my mum, but I have to my friends. Once when I was driving, I have my Ls, my mum was in the car and my two

Question	Participant	Response
		friends were in the back. You'd think that I'd be really good because my mum was in the car, and even though I didn't go over the speed limit, I went from 0 to 80 a lot quicker than if my mum was in the car, so you do show-off with your friends. You just do it as a joke, as if to say "I'll show you how I can drive".
	F 1606	Age does come into it. I was a lead-foot as a young girl, and I used to drive really fast. I would drive like that with my girlfriends, but not with my parents.
	F 1640	I think that being a passenger affects your own driving. You look at what the driver does that you don't do, and so when you are a driver you think maybe I should use the indicators like they do or maybe I shouldn't do what they do. If you've never been a passenger and always a driver, you're going to drive a lot differently, you're going to have a different relationship with your passengers.
Do you think that you might be a bit more reluctant to say anything about bad driving if you've always been a passenger?	F 1356	Yes, because I'm just a learner, I never say anything to an adult driver, except for my parents
Do you drive differently with a work colleague as a passenger? or do you say anything to a work colleague while they are driving?	F 1883	I used to drive my boss around a lot, and the only thing he used to have a go at me about was riding the clutch, otherwise he barely said anything, wouldn't mind if I ran a stop sign
	F 1629	Just as a joke. I will tell a particular female work colleague of mine when she is driving badly, because she does just about everything wrong.
As a driver, who would you be most or least likely to take passenger input from? Spouse?	F 1606	My spouse gives me input all of the time, but I don't always accept it.

Question	Participant	Response
Parent?	F 1894	I rarely drive with my husband as a passenger because he makes me nervous because he is more experienced than me. He won't say anything but I know that I'm going to do something wrong when he gets in the car with me.
	F 1883	I only accept advice from someone who I respect as a driver. If not, I will just consider it.
	F 1629	I listen to my daughter, because she is a good driver
As a passenger, who would you be most or least likely to give any advice to?	F 1606	To my sons, but not to my daughter-in-law because she gets a bit aggressive.
	F 1107	I would never give advice to a neighbour. He is a fairly steady driver, although if he did something quite wrong, like ran a stop-sign, I would tell him.
	F 1640	My dad and I used to have a system when I was little that for every rule that he broke, he had to pay me 5 cents. I picked on everything, because I wanted the money. With my mum I usually tell her, but with my dad he does so many things wrong, but they are not dangerous so I don't tell him. My mum drives like she's in dream land, so if you tell her that she needs to pay more attention, she will.
	F 1894	Because my children have lots of experience, I say less because they have been driving for a while and have not had any accidents.
	F 1606	I agree with that
	F 1894	But if necessary, I would say something. I did prevent an accident not so long ago, I said "can you see that car there?", and she said that that stopped an accident.

Question	Participant	Response
	F 1606	My son is a truck driver and I think he's become a bit complacent, so I tell him if he's going too fast, and he accepts what you say to him and slows down.
	F 1356	I think that men are less likely to act on your advice than women. I think that my mum would take a bit of notice, but my dad gets a bit more agro and I think that a lot of my guy friends would do the same. Some guys are too busy showing off that they don't take on board what you are saying to them. Maybe it's because I'm female.
	F 1640	I won't say anything to my male friends. They say "lay off".
	F 1199	They don't listen anyway. But I think that males are less likely to listen than females, especially young male drivers
Do you think that you might drive differently depending on the number of passengers in the car?	F 1199	I'm more cautious, doesn't matter if I've got two or one person in the car.
	F 1107	I'm conscious of it, you need to concentrate more.
	F 1629	It doesn't affect me. I tend to turn off when the traffic is heavy so I can concentrate on driving.
	F 1813	I can get a bit cranky when I carry my son and his friends, because with all of them in the car they can get especially noisy.
What should passengers be doing to help drivers to drive more safely?	F 1107	They should be keeping the chatter down
	F 1813	As a passenger you have to remember that the driver is doing work, so if it is busy they have to do more work and so you have to quieten down a bit to let

Question	Participant	Response
		them work as well as they can.
	F 1640	I think that passengers shouldn't pick on small things about driving because you get frustrated, and I know that when I'm angry I drive faster. They should give constructive criticism.
	F 1629	After the fact comments aren't constructive. It's better to say "hey, this guy is about to hit us", than "this is the guy that nearly hit us".
	F 1356	Phones, radios, windscreens, should all be left up to the passenger
	F 1883	Doesn't matter how much you try to the driver, you can always distract the driver by the best of intentions. The driving should be left up to the driver, even if the driver is a good driver you could say something that would be distracting and cause a crash. If a driver is a bad driver, anything you might say, even a sneeze or a hiccup could cause a crash.
	F 1199	When I'm driving at night in the country, I'll say "I'm driving, but you have to look out for the kangaroos". You delegate and share the tasks, especially on long trips.
	F 1640	I think the worst thing is when they gasp. I always slam on the brakes.
If someone said to you that the road toll could be cut in half if passengers played a more active and positive role, how do think as a community we could encourage passengers to do this? Or don't you think that this is possible?	F 1107	Education. Through schools
	F 1883	Passengers have to realise that the driver is taking their life into their hands and that if they don't speak up and there is a crash, then they only have themselves to blame.
	F 1356	A lot of accidents occur because of alcohol. In an alcohol incident, the

Question	Participant	Response
		passenger is usually drunk as well, so not much point in saying to the passenger to look our for this or do this because they're not going be much good.
	F 1534	Public awareness is important. Should say to passengers that you have a responsibility as a passenger for the safety of everybody in the vehicle including the driver.
	F 1629	I think that it is possible. To promote this sort of thing, my suggestion is to get drivers into regular training regime that will include this sort of thing. It might not work for all drivers, but at least if you train the drivers well they can say to the passenger these are the sorts of things I'd like you to look out for while I'm driving.
	F 1356	I think that the passenger should be a part of driving programs done at schools, but I don't think that many teenagers would take up on that unless it was in a test.
Similarly, if someone said to you that the road toll could be cut in half if passengers played a more active and positive role, how could we encourage drivers to accept and act on this advice?	F 1606	Depends on the personality of the driver, whether they are going to accept the passengers advice.
	F 1894	People are so blasé about road toll, I don't think that this sort of thing would register
	F 1606	But what about cutting down accidents where there are no passengers? Not all crashes occur when there are no passengers.
But in cases where passengers are present, do you think that we could educated drivers to take on passenger advice?	F 1883	Probably if you tell them that they are going to save their lives and other people's lives. Have to make people worry about losing what they have.

Question	Participant	Response
Any final comments?	F 1606	I still think that a lot of it comes down to driver training. Re-educating drivers and organizing passengers. But I still think that this is the responsibility of the driver.

F.2 Focus Group 2

Question	Participant	Response
FOCUS GROUP 2- WEDNESDAY 21 JUNE 2000		
For those of you who are drivers and carry passengers, in your experience, what roles do your passengers play? What do they do while you are driving?	F 2723	Navigate
	F 2160	Entertain me
	F 2175	Warn me of danger
	F 2556 and F 2378	Tell me I'm speeding
What do you think about these roles that your passengers play or the things that they do?	F 2223	Timing is important - otherwise passengers can be distracting, eg when I'm tired
	F 2378	I get annoyed to be told I'm speeding - but will generally slow down if asked to
	F 2556	If asked to, I'll usually slow down
	F 2223	I would too, especially in a 60 km zone
	F 2723	I would slow down particularly if I sensed the passenger was uncomfortable
	F 2175	I find passengers frustrating if they're experienced drivers. I show my

Question	Participant	Response
		frustration which increases the tension
Is driving made easier? In what ways? Do you think it is good to have an extra set of eyes?	Whole group	Yes, especially when navigating
Is driving made more difficult? In what ways?	F 2160	Inexperienced drivers tend to panic unnecessarily
	F 2723	Dangerous situations can occur very suddenly - passengers may not see the danger before the driver. If passengers see potential dangers earlier and point every one out to you, this can become annoying
	F 2157	Depends on driving style - my wife is more cautious so would take action before I would
	F 2723	A passenger's perception of danger is different to the driver's, as the driver has control of the car. When I'm a passenger, I think we'll crash much earlier than when I'm the driver
	F 2157	Passengers can be helpful in strange environments, eg with street signs
	F 2903	The relationship between the passenger and driver is fundamental
	F 2499	Parents can be distracted by young, noisy children. You lose concentration but there may not be anywhere to pull over
	F 2062	Can be useful to pull over and wait until everyone calms down. One parent can hop in the back with the children to calm them down. Also good to separate the children and have one in the front seat to reduce tension. Passengers can have a positive or negative impact

Question	Participant	Response
Do your passengers do things that help to make you a safer driver? What?	F 2223	They keep you awake
	F 2723	That could be dangerous - shouldn't drive when you're fatigued
	F 2903	Better to have passengers - they keep me alert.
	F 2175	Helpful to be tapped on shoulder occasionally etc to keep alert
	F 2499	Passengers can give you a drink, change the tape, answer mobile phones - useful on long trips
Do you give tasks to your passengers, eg. look out for this....?	F 2556	At dusk, good to have another pair of eyes looking out for kangaroos etc
	F 2175	Ask them to give out refreshments
Can passengers help by telling you something?	F 2157	Passengers can help with overtaking - they may have a better view
	F 2556	My wife warns me about "Black Eye" because she's German
	F 2499	If you're on a winding road, the passenger can help with overtaking
	F 2157	Passengers can warn of dangers coming from the left
	F 2160	I wouldn't trust a passenger to tell me when it's safe to overtake - the secret is the driver's judgement not the presence of a passenger
	F 2903	It's an ego thing - I'm a good driver. If a passenger sees something I missed, I feel embarrassed and feel I've failed

Question	Participant	Response
Do your passengers do things that make you a less safe driver? What? Have these things ever caused you to have a crash, or a near crash?	F 2223	Passenger in a hurry can be a problem
	F 2723	I find their general presence distracting - less likely to see lights change or stop signs. They reduce my attention span when they're chatting
	F 2175	Was distracted by a passenger looking for something in my wallet. I was trying to help find the item when driving - we almost crashed. If I'd been alone, I'd have pulled over and looked for the item. When I ask a passenger to look at a map, I tend to look too, which is dangerous. Entrusting tasks to passengers can be dangerous
	F 2378	Passenger has helped me avoid a crash by calling out
For those of you who are passengers, what roles do you play while travelling as a passenger? What do you do?	F 2556	There's a perception that "back seat drivers" are negative, but I think they can be useful
	F 2223	When I'm a passenger, I avoid distracting, controversial subjects
	F 2157	I tell my wife to slow down
	F 2223	I tell the driver not to get too close to the car in front
	F 2378	Drivers generally cooperate with me - they see me as an extra set of eyes
	F 2723	You don't necessarily have to ask passengers to help - they can be helpful without being asked to do anything specifically
	F 2903	I threaten to throw up if they're driving badly and I'm getting thrown around. Drivers usually slow down when I tell them to

Question	Participant	Response
Would you as a passenger try to be helpful? Is your intention to make driving easier for the driver?	F 2723	I would only comment if I thought my life was in danger
	F 2157	I would comment if a fine is a possibility - I think of my bank account
	F 2160	Best to keep driver happy unless there's real danger
	F 2175	When my children were learning to drive, I would compliment them if they drove well. The reassurance was helpful to them
	F 2378	The driver's reaction depends on who they are - if they are friends, the reaction will be positive
	F 2062	As a passenger, I think it's important to get the ventilation right, so will adjust it, otherwise the driver may fall asleep
	F 2499	Singing
Do you do anything that makes driving difficult for the driver? Do they get annoyed with you if you do or say certain things? Like what?	F 2556	Turning the radio up
	F 2499	Hearing the same songs over and over again. When I'm the passenger, singing makes me feel good and keeps everyone else awake
	F 2160	Smoking in the car can be annoying
	F 2223	Keep windscreen clean
Do you do anything that makes it safer for you and any other passengers and the driver?	F 2723	Adjust dials so driver doesn't have to take eyes off road
	F 2556	Find radio station if we go out of range

Question	Participant	Response
	F 2160	Remind them to indicate
	F 2175	Enquire about their comfort, offer to drive in a positive way
Do you think that you drive differently depending on your relationship with your passenger? In what ways? Who are you most likely to take advice from?	F 2157	Driving with strangers is difficult. I feel like the host so have to pay more attention to them to put them at ease, point out landmarks. Strangers are not safe. They are less likely to comment on my driving if I'm driving badly
	F 2903	Driver is responsible - passengers aren't. If driver finds passenger's input irritating, passenger should shut up. Their input is incidental unless there's a real emergency
	F 2499	Passengers shouldn't be made to feel responsible for the drivers' actions. There was a campaign some years ago which encouraged people to take away keys from drivers so they wouldn't drive when drunk. Women usually had this responsibility and there was a backlash. Women felt they had a policing role. How far can you take this? The responsibility is with the driver
Does the age difference between the driver and passenger matter?	F 2556	I would be more concerned about ensuring a smooth, comfortable ride for an older person, e.g. wouldn't take corners too sharply
What if you are both the same age?	F 2175	Drive with my spouse every day. When I drive with others, I drive differently. Visitors can be distracting. Trying to be tour guide. Reason for driving as well as relationship with passenger influences your driving
	F 2157	The number of passengers I carry influences my driving
	F 2723	Would find driving with my parents painful - there are no social barriers/no courtesy. Driving with my friends is more relaxing. They won't comment unless there's danger. Parents will comment on a wider range of things.

Question	Participant	Response
Would a parent/spouse be more likely to make positive or negative comments?	F 2223	I have two friends who speed. As a passenger, I feel tense and pressured not to say anything or they'll think I'm slow
	F 2378	I wouldn't succumb to this pressure
	F 2175	Peers are more reckless. They purposely make their wheels slide around corners and don't think of consequences. Passengers contribute to their ego as the drivers try to impress them
Does gender matter ie. if driver is male and passenger is female and vice versa?	F 2223	I'm less likely to comment on my husband's driving whereas he's more likely to comment on mine
	F 2378	My father assumes all bad drivers are women - bad to generalise
	F 2175	I wouldn't dare tell my son what to do but would tell my daughter
	F 2499	When I drive with other women my age, I don't feel pressured. When I drive with my mother I'm distracted by her talking. I recently drove with 2 male work colleagues - one was fine but the other drove badly. I screamed as we left the car park but didn't speak up as I was in back seat and the 2 men, who knew each other well, were in front seat. Not sure if I would have spoken up if the driver was a woman. I think that overall, men think they have superior driving skills.
What about other relationships, eg family members?	F 2157	People you know feel more able to criticise - strangers treat drivers as gods
	F 2499	People you know will be more prepared for your driving style. I would feel less inclined to comment on a stranger's driving

Question	Participant	Response
	F 2723	I'd be more cautious if strangers were in the car - don't know what they're prepared to put up with
Would you comment on a work colleague's driving?	F 2723	Would be more likely to comment on a friend's driving
	F 2903	I was in the military. If I was being driven by a subordinate, I wouldn't hesitate to comment as it would be my right to do so
What if the driver was more or less experienced than you?	F 2378	Wouldn't matter - I want to learn for myself
	F 2160	If driver was a better driver than me, I'd be more relaxed as a passenger. If the driver is nervous, this makes me mad - gender is irrelevant
	F 2499	If they see danger, or that I'm speeding, I listen to my children even though they're not experienced drivers
	F 2723	Other people's experience level is irrelevant - it's your experience that counts and needs to be developed
If you're the passenger, who would you give advice to?	F 2378	Anyone
	F 2723	Parents and friends - wouldn't tell strangers how to behave
Who would act on your advice?	F 2157	We all have different driving styles - we often comment because we just have different styles not because there's a real problem. Doesn't matter who it is
Do you drive differently depending on the number of passengers that you are carrying and who they are? In what ways?	F 2378	I tend to drive more badly if my car is full of friends as opposed to being full of relatives

Question	Participant	Response
	F 2723	I slow down when the car is full - don't want to be responsible for the deaths of four other people
	F 2556	Don't want guilt of killing others - if I'm alone, I'm less careful as it's only my life at stake
	F 2903	If the car is full, I feel like I'm on show
	F 2157	Young people with a big audience want to "perform", weaving through traffic etc
What do you think passengers should be doing to help drivers to drive more safely?	F 2378	Sit there and be quiet or do chores like getting drinks or tuning radio
	F 2157	In freeway situation, might just want them to keep an eye out
	F 2556	Extra set of eyes - costs nothing and is very useful
	F 2157	Passengers should have own rear view mirror
	F 2903	I watch for driver's state of alertness - I've fallen asleep at the wheel before
If someone said to you that the road toll could be cut in half if passengers played a more active and positive role, how do you think as a community that we could encourage passengers to play a more active and positive role? Or don't you think that's possible?	F 2499	This would give carte blanche to back seat drivers to torture drivers. It could achieve the opposite of what you hope for. Message needs to get out on complexity of driving task. Campaign should be along lines of "Look after the driver", "Help driver in these ways" rather than "Passengers should do this or that.."
	F 2723	Need public awareness campaign as passengers are generally uncomfortable commenting on the driving of others

Question	Participant	Response
	F 2157	It's a communication issue
	F 2556	Need to teach passengers **how** to say things - make them aware that back seat driving can be very distracting but in certain circumstances is useful
	F 2160	Passengers need to learn the balance in what to say and what not to say - keep driver relaxed. Wouldn't tell a pilot how to fly a plane
	F 2556	In rally car races, the navigator is constantly telling the driver what to do - but that's the right context for this - it's part of their role
	F 2499	Passengers should consider if they're being good passengers and assume some responsibility - it's not about making the driver do the right thing
Similarly, if someone said to you that the road toll could be cut in half if passengers played a more active and positive role, how could we encourage drivers to accept and act on this advice?	F 2723	Need drivers to accept it's not a reflection on their skills
	F 2499	Keep to a theme of keeping things simple and making a task as easy to achieve as possible - "Can we make the job easier - talk to passenger - listen to passenger"
	F 2160	Safety is more important than being late - need to communicate before the journey commences
	F 2556	If passenger has genuine safety concern, they have the right to speak up - the driver doesn't have the right to put passenger at risk
	F 2903	Passengers need to be assertive
	F 2223	I was a member of a jury - a woman had killed her husband and a policeman in a car accident. Just before the accident, she said her husband had been

Question	Participant	Response
		"getting at her". He was angry about being booked just before, which meant she had to drive
	F 2223	Use education to get drivers to accept and act upon advice from passengers
	F 2723	This wouldn't work with highest risk category (16 to 25) - as it's not "cool"
	F 2556	If driver won't listen, passenger should ask driver to stop and let them out
	F 2723	Peer pressure - don't want your mates to know you asked to get out of a car - it's a young person's thing - you're more likely to do it if it's illegal
	F 2175	Driver education is important - teach drivers that passengers **do** count. Drivers are responsible for safety and comfort of passengers but also passengers should be given the opportunity to tell you if they're uncomfortable
	F 2160	You need education **and** experience

F.3 Focus Group 3

Question	Participant	Response
FOCUS GROUP 3 – THURSDAY 22 JUNE		
For those of you who are drivers and carry passengers, in your experience, what roles do your passengers play? What do they do while you are driving?	F 3836	Talk, which can be distracting because you're trying to concentrate
	F 3481	Navigate, which is helpful
	F 3122	Adjust radio/temperature, although this can also be distracting
	F 3909	Sit there and not talk, silence can be awkward
Could they play a more active role?	F 3625	They can warn you to stop - red light
	F 3481	They can tell you how to drive - this can make you stressed and angry but can also be helpful if they're telling you the right thing to do.
	F 3909	Some drivers react badly to this - I don't like being told what to do
What are the more helpful things they can do?	F 3505	Warn me of speed cameras, which is excellent
	F 3481	Warn me of a potential accident or of road signs I may have missed. I've had passengers tell me to slow down e.g. my mother. When with friends, peer pressure can affect you and you try and impress them by skidding, going faster

Question	Participant	Response
	F 3625	If you're following someone who's driving too fast, you'll try and impress your passengers by driving fast to keep up with the other car
Is driving made easier? In what ways? Do you think that it is good to have an extra set of eyes	Whole group	Yes, driving is easier with passengers
	F 3625	You start relying on having passengers in the car - if they're not there, you might miss something they'd normally see
	F 3836	Good to have passengers double check things, e.g. when on blind corner
Is driving made more difficult? In what ways?	F 3909	Depends - if they warn you of things you've already noticed, the driver gets up-tight
	F 3481	You might rely on their judgement then find that it's wrong - but in the end it's the driver's problem (group agrees with this, but none have had actual experience with this)
Do your passengers do things that help to make you a safe driver? What?	F 3438	Passengers help to keep me awake
Do your passengers do things that make you a less safe driver? What? Have these things caused a crash or near crash?	F 3481	They can distract driver by pointing things out for you to look at but you're supposed to be looking ahead, talking
	F 3836	I was involved in an accident as a passenger. A car ran into us. It happened very quickly and I didn't see it coming. Normally as a passenger, I keep an eye on the rear vision mirror

Question	Participant	Response
If you saw a potential accident coming up, what would you do, as a passenger?	F 3438	I would say something
	F 3909	I would panic and say something
	F 3438	A quick intake of breath by the passenger will often alert the driver
Would the driver act upon your advice?	Whole group	Yes - if you're that close to a crash, they'll listen to you
Have you had a crash or near crash where the driver has said something to you?	F 3481	I was driving fast on a freeway - saw a stopped car ahead. I swerved to miss it. I saw it before my passengers saw it. They thought I did the right thing - good to have their positive reinforcement
	F 3438	Their presence and reinforcement helps to bring adrenalin levels down
	F 3122	I was reversing in a car park - thought it was clear. My passenger said "Stop" - she saw another car reversing behind me - that was really good
Do you do anything that makes driving difficult for the driver? Do they get annoyed with you if you do or say certain things? Like what?	F 3122	I get nervous driving with a certain friend who's a bad driver, so I gasp when he drives badly
	F 3481	I'd call out if the driver is too close to the curb - drivers usually respond
	F 3505	If the driver takes too long to stop, I'll swear to myself and try to say something, but I just can't.
	F 3481 & F 3438	Tail-gating makes me nervous - I would say something and the driver will usually pull back
	F 3505	I have a friend who enjoys tail-gating learners. It makes me feel embarrassed

Question	Participant	Response
		and I'll say "slack off" or "back off", but not "slow down". He'll usually do it, but he's a "lost cause". I still let him drive me around - it's a male thing - really hard to tell him to slow down - comes down to being male. I'm scared but can't say anything. I'm always scared to get into his car, but that's "just how it is" - I know the consequences
	F 3909	I agree - we need to show off - show you're brave and macho. My friends aren't as "psycho" but I agree that young males find it necessary to drive fast - unless they're driving really fast, the thought of crashing doesn't occur to you
Have you girls had a similar experience?	F 3836	Yes - I have a male friend who does "hand brakies" and "burn outs" a lot
	F 3625	You feel pressure not to say anything - but if there's obvious danger, I'd speak out
	F 3438	I'd be tactful - say "I saw a police-car around here" - the driver will usually respond well to this - it's their choice. If they're real idiots, I won't drive with them again
If you did say something to your friends, would they respond?	F 3505	Yes - if I say "back off" my friend will slow down. He only "lets loose" sometimes like after a party or at night. Females don't seem to mind his driving - it depends on who's in the car with him
	F 3909	The more people in the car, the less likely the driver is to respond. He's still trying to impress the other three in the car, even if one passenger tells him to slow down. If you're good friends, it's more likely that the passenger will speak up and the driver will listen, as they trust each other's judgement and respect each other

Question	Participant	Response
Do you drive differently depending on the number of passengers that you are carrying and who they are? In what ways?	F 3909	Drivers would be less cautious with lots of passengers.
	F 3481	You feel pressure to be more careful when you're risking many lives. Having just one passenger is more relaxing
What about when you're driving alone?	F 3481	I'd be less cautious as I've only got my life to worry about - general agreement, but not F 3909
	F 3909	If my car is full, I don't think "I have to protect these people's lives" or "I'd better be careful of I'll crash". That's too cautious - need to be confident and to trust the driver
	F 3481	You can be confident and conscious of the safety of others
Would you say something if your life was in danger no matter who the driver is?	Whole group	Yes - if my life was in danger, I would speak out - it's our life
Do you do anything that makes driving difficult for the driver? Do they get annoyed with you if you do or say certain things? Like what?	F 3438	Back seat discussions can be distracting
	F 3505	Guys love to gossip - laugh at somebody else... bag others… can annoy driver which can make them less cautious
	F 3122	My dad drives very slowly - when the lights turn orange, I say "Don't stop" but he won't speed up and drives even slower
Do you do any things that make it safer for you and any other passengers and the driver?	F 3438	On long trips, good to have someone to talk to/adjust radio/temperature

Question	Participant	Response
	F 3625	To keep an eye out on the road. I wouldn't like it if the passenger adjusted my radio
	F 3505	I like to adjust my own radio
	F 3909	Yes - but if on a busy street, can be helpful for passenger to adjust radio
	F 3836	Talking to the driver would make things safer
Is it useful to delegate tasks to passengers?	Whole group	Yes, particularly if you're in unfamiliar territory
Do you think that you drive differently depending on your relationship with your passenger?	Whole group	Yes
	F 3438	I'm very careful when I drive my grandmother around - I feel I have to
	F 3481	Yes, I can't have the radio on with my grandmother. Grandmothers think you can't drive. I'm also very careful with my young nephews (2 and 5 years old)
	Whole group	Agree
	F 3438	You have to strap young children in properly or they'll distract you
Would you comment if the driver was older?	F 3438	No - I drive often with my dad, but wouldn't comment on his driving
	F 3625	I would comment if my parents did something really bad
	F 3481	I don't say anything if my dad drives badly because it won't make any

Question	Participant	Response
		difference - he's set in his ways - it goes in one ear and out the other
Would your boys drive differently if your parents were in the car?	F 3909	Yes - I'm not afraid of them but am aware they could punish or yell at me
	F 3505	I'd be more careful with my parents than with friends, but older people should also respect me as a driver
	F 3438	Parents pay more attention to your driving as they taught you how to drive
	F 3836	I avoid driving with my parents as they're perfectionists and always think they're right and I'm wrong
What if your passengers are young children?	F 3909	Wouldn't change how I drive - but I haven't actually done it
	F 3481	I wouldn't want to scare them - I recall being driven by my brother when he was 18 and I was 8 - I was terrified but didn't say anything - can't remember why I didn't now
	F 3505	I speed when I'm with my friends - otherwise I don't - it's a male thing
	Whole group	We'd generally be more cautious with older passengers than same age passengers
	F 3122	My 18 year brother drives dangerously, so when I drive and he's the passenger, I drive like "an old lady" to set a good example. He tells me off for being so slow but I don't care. I wouldn't speed up for a friend either
Does gender influence you i.e. male driver, female passenger and vice versa	F 3481	My boyfriend is a better driver than me - he's more careful when I'm in the car

Question	Participant	Response
	F 3122	My male friend would be careful with me in the car, but when the other passengers are male, he tries to impress them
	F 3625 and F3438	My driving wouldn't change
	F 3836	My boyfriend drives faster when I'm in the car, especially if we're late
Would your driving change if you're related as opposed to not being related?	F 3481	I'd be more comfortable with a relative. With others, you don't know what you can and can't say - what's acceptable. If the driver was a stranger, I wouldn't comment on their driving as this could be insulting
	F 3438	If the driver is a stranger, you don't want to risk the driver becoming frustrated. I'd feel safer commenting to a relative
	F 3625	Now that I'm more experienced, this wouldn't be an issue
	F 3481	Even if the driver is a stranger, I would say something but would try and stay calm and not panic
	F 3909	You'd say it in a different way to how you would say it to someone you're more comfortable with - stay calmer maybe
Would a stranger act on your advice?	Whole group	Yes
	F 3481	I was in a taxi and the driver started going off the road - I called out and he straightened out - it really scared me

Question	Participant	Response
If the driver was very experienced, would you still speak out?	F 3481	Yes, but would say it differently, ask a question like "Oh, is that how you do it?" rather than telling them
	F 3505	I can't say anything to anybody
	F 3481	It depends on how much it matters, e.g. overtaking when unsafe. If they ignore you and they're right, I'd feel bad but this wouldn't stop me from speaking out again. It's bad though if I kept on doing this and I'm wrong all the time. Constructive comments are good
	F 3909	If the driver is very experienced, you tend not to look out for dangers as much, so may not notice if they do the wrong thing - you trust them more
Does your input as a passenger differ depending on who the driver is and who would you take advice from?	F 3625	If an accident is imminent, I'd listen to anyone, but I'd be less inclined to listen to inexperienced passengers in certain situations
	F 3909	I'd listen to my parents
	F 3438	It depends on the advice - if in imminent danger, I'd speak out regardless. My dad drives aggressively and would ignore me
	F 3505	I'd do the opposite of the advice given
Who would you give advice to and who would act on your advice?	F 3909	I'd give advice to my parents
	F 3481	If the advice was helpful, most people would listen
What things do you think passengers should be doing to help drivers to drive more safely?	F 3438	If driving in the country, would nominate a passenger as a watcher

Question	Participant	Response
	F 3481	The passenger should help me have a safe, comfortable journey, making sure the driver is happy e.g. radio tuned correctly, warm enough etc. Must ensure driver is OK. Passenger should also help with warnings etc if driver wants them to
	F 3625	Should help driver stay alert
	F 3438	But only in a sensible way - not by screaming at the driver. Passengers shouldn't be too passive - should help
If someone said to you that the road toll could be cut in half if passengers played a more active and positive role, how do you think that as a community, we could encourage passengers to play a more active and positive role? Or don't you think that's possible?	F 3438	Use same method as other road safety campaigns - television, posters
	F 3505	The police came to our school and showed us pictures of car crash scenes - this made an impact. It was particularly helpful with college kids as that's when we get our "P's" - to see how easy it is to die. The ACT's petrol campaign was helpful
	F 3909	This is where each college got $20 to $40 for a weekly prize for the safest driver. Some took it as a joke, but others took it seriously
	Whole group	Could use similar school based campaign to encourage passengers to have a more positive role
	F 3505	Depends on the situation - can't say anything to certain drivers when I'm the passenger - just can't, but it's not a problem as I don't drive with that friend anymore
	F 3481	We need to make it easier for passengers to speak up - emphasise their right to speak out

Question	Participant	Response
	F 3625	In Queensland there's a campaign using a sign saying "Passengers, it's your job to keep the driver alert". You need to make it easy e.g. have signs asking "Is your driver going too fast?". If passenger sees it, they'll think about it
Similarly if someone said to you that the road toll could be cut in half if passengers played a more active and positive role, how could we encourage drivers to accept and act on this advice?	F 3481	Remind drivers what it's like to be a passenger and remind them that just as they may want to comment on the driving of others, so their passengers may want to comment on their driving. Treat others as you want to be treated
If you heard on the radio that passengers can help, would you start listening to passengers?	Whole group	Yes
	F 3505	Need to target drivers, not passengers. Drivers often have no passengers so have to rely on their own judgement
	F 3625	Most drivers do listen to passengers (excluding young males and certain personality types - no amount of advertising can influence some people)
	F 3505	Some passengers just sit in the back seat and read
So should we encourage passengers to take a more active role?	F 3438	You need to encourage passengers to speak out. Drivers won't ignore them totally
	F 3481	But you need to speak to drivers in a way that's acceptable
	F 3625	Show them how helpful passengers can be
	F 3122	Show two advertisements - in one, passenger asleep and doesn't see truck, and

Question	Participant	Response
		the car crashes. In the other advertisement, the passenger is alert, sees truck and there's no crash
	F 3438	Could show school bus scene - passengers being distracting as opposed to not being distracting
So should we encourage passengers to take a more active role?	F 3909	A lot of schools have driver education - incorporate the benefits of passengers in this instead of always focussing on the driver. Can also ask questions about passengers in "L" test
General comments?	F 3625	Passengers are useful if the passengers are familiar with an area and the driver isn't. They can point out odd things, like where police cameras are, unusual street/signs etc
	F 3122	In Melbourne, with trams, passengers who know the rules can be very helpful
	F 3625	Also helpful if you're both in unfamiliar territory as you can both watch out for dangers