"If they say go faster or something I'll probably go faster": Peer influence upon the risky driving behaviour of young novices

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Abstract

Young novice drivers are at considerable risk of injury on the road, and their behaviour appears vulnerable to the social influence of their friends. Research was undertaken to identify the nature and mechanisms of peer influence upon novice driver (16-25 years) behaviour to inform the design of more effective young driver countermeasures. Peer influence was explored in small group interviews (n = 21) and three surveys ($n1$ = 761, $n2$ = 1170, $n3$ = 390) as part of a larger Queensland-wide study. Surveys two and three were part of a six-month longitudinal study. Peer influence was reported from the pre-Licence to the Provisional (intermediate) periods. Young novice drivers who experienced or expected social punishments including 'being told off' for risky driving reported less riskiness. Conversely young novice drivers who experienced or expected social rewards such as being 'cheered on' by their friends – who were also more risky drivers – reported more risky driving including crashes and offences. Peers appear influential in the risky behaviour of young novice drivers, and influence occurs through social mechanisms of reinforcement and sanction. Interventions enhancing positive influence and curtailing negative influence may improve road safety outcomes not only for young novice drivers, but for all persons who share the road with them. Among the interventions warranting further development and evaluation are programs to encourage the modelling of safe driving behaviour and attitudes by young drivers; and minimisation of social reinforcement and promotion of social sanctions for risky driving behaviour in particular.

Introduction

Young drivers are overrepresented in road crashes in motorised jurisdictions around the world. To illustrate in the Queensland context, young drivers aged 16-24 years contributed 22.0% of the previous year's road toll, and 28.4% of the Queensland's road toll arose from crashes involving a young driver (DTMR, 2013). Young drivers continue to be overrepresented in road crashes, despite a plethora of interventions ranging from education to engineering, enforcement to enhanced licensing programs. In July 2007, Queensland enhanced the state graduated driver licensing (GDL) program. Changes to the Learner licence phase include incorporating the requirements of 100 hours of logbook driving practice (with a minimum requirement of 10 hours night driving), a minimum 12-month duration, and a minimum Learner licensing age of 16 years. Changes to the Provisional licence phase include demarcation into Provisional 1 (P1, 1 year duration) and Provisional 2 (P2, 2 years duration) phases with a hazard perception test required to progress from P1 to P2; and high-powered vehicle restrictions during both Provisional licence phases. Audible mobile telephone use by passengers is prohibited during Learner and P1 phases, and novice plates are required to be worn during each GDL phase (Queensland Transport, 2007).

Young driver road crash statistics have resulted in a plethora of research trying to identify factors which are influential in their driving behaviour and in their *risky* driving behaviour – such as speeding and not wearing seatbelts – in particular. A search of Scopus (May 2013) revealed over 1,000 young (or 'teen') driver papers published from 1977 to 2013. Sources of influence identified

in the literature predominantly pertain to characteristics of the young driver themselves (e.g., age, Bingham & Ehsani, 2012; gender, Lee et al., 2011); the journey (e.g., travelling speed, Raftery et al., 2013); passengers (e.g., number of passengers and age of passengers, Lam et al., 2003); and the vehicle (e.g., ownership, Scott-Parker et al., 2011a). Social influences upon young driver behaviour have also been identified, and the social influence of friends, who frequently travel as the young drivers' passenger(s), in particular, such that young passengers can exert a positive (i.e., reduced crash risk, e.g., Engstrom et al., 2008) or negative influence (ie., increased crash risk, eg., Ouimet et al., 2010) on young driver behaviour.

Importantly for road safety, the young driver is also an adolescent. Adolescence is a developmental period associated with increased time spent with, and importance placed upon, interactions with peers. As such, the adolescent increases their reliance on peers – and their friends in particular – in forming attitudes and behaviours (Sharpley, 2003; Sigelman, 1999). Consistent with social learning principles, peers can (a) be a model to be imitated, (b) encourage risky – and discourage safe – driving, and (c) reward and punish the young novice's attitudes and behaviours. For example, Chen et al. (2008) found that young drivers' intoxicated driving was positively associated with modelling of drink driving by peers and perceived peer approval of drink driving, and negatively associated with perceived peer disapproval of drink driving. Moreover, risky driving during the first 18 months of independent driving was associated with the reported riskiness of the driving behaviour of the young driver's friends (Simons-Morton et al., 2013).

Adolescents engage in risky behaviour as they desire social approval from their peers (e.g., see Bonino et al., 2003) which is psychologically-rewarding for the young driver. Much risky driving is impacted upon by the social context in which it occurs. Indeed, young novices cannot 'show off' unless there is someone to 'show off' to (Harre et al., 2004). Moreover, young drivers also use their car for social purposes (Arnett, 2002; Harrison et al., 1999), and psychologically- and physiologically-salient (Cameron, 1999) group-approved behaviour can, and is expected, to occur (Harre et al., 2000). Young drivers report their friends explicitly encourage them to drive in a risky manner (Buckley, 2005), including speeding (CHOP, 2007, 2009). Young male drivers report their friends want them to be risky drivers, making journeys 'more enjoyable', whether they explicitly state this or not (Regan & Mitsopoulos, 2001), and male drivers report greater pressure, and more discomfort in refusing, to engage in risky behaviours (Suls & Green, 2003). Interestingly, young *female* drivers who reported they intended to speed believed *male* friends would support this behaviour whilst *female* friends would disapprove, and *males* who reported greater speeding intentions believed *male* friends would be supportive (Horvath et al., 2012). Accordingly, peers appear to be a key player in shaping the risky behaviour of young drivers.

Study aims

Research was undertaken to explore and identify the nature and mechanisms of peer influence upon young driver behaviour and attitudes during the pre-Licence, Learner and P1 licence phases in Queensland. The paper reports new research findings with appropriate referencing to findings which have been published elsewhere throughout the larger, 4-year research project. It is noteworthy that given that the P1 period is associated with the greatest risk to the young driver, the research reported in this paper will focus upon the influence of peers during this licence phase. It is also noteworthy that whilst some of the broader influences of peers *and parents* upon young driver behaviour during the P1 licence phase has been examined within an application of Akers' social learning theory (Scott-Parker et al., 2013a), the current paper examines the specific influence of peers only.

Method

Participants

Qualitative research

Young drivers (*n* = 21, 9 males) aged 16-25 years with a Learner or P1 licence volunteered to participate in the qualitative research.

Quantitative research

Young drivers (*n* = 761, 238 males) aged 17-25 years with a P1 licence attending a tertiary education institution volunteered to participate in the first Queensland-wide survey, Survey One. Young drivers (*n* = 1170, 461 males) aged 17-25 years who progressed from a Learner to a P1 licence during the period 1 April 2010 to 30 June 2010 volunteered to participate in the second Queensland-wide survey, Survey Two. Young drivers (*n* = 390, 113 males) aged 17-26 years who had held their P1 licence for six months and were participants in Survey Two volunteered to participate in the third Queensland-wide survey, Survey Three.

Design, Method and Procedure

Qualitative research

Young persons in the food court of a major regional shopping centre during the summer school holidays were approached and asked whether they had a driver's licence. If they responded 'yes', they were invited to participate in individual interviews (if shopping alone) or small group interviews (if shopping with friends who were also licensed to drive on the road) of approximately 20 minutes duration. Participants were offered $20 to thank them for their efforts, and the thematic content analysis results were used to guide the quantitative component of the larger research project.

Quantitative research

Young drivers attending a Queensland tertiary institution in Semester 2, 2009, were invited to participate in Survey One via an email containing the online survey hyperlink which was forwarded to them via the relevant institution's registrar. All young drivers in Queensland who progressed from a Learner to a P1 driver's licence between 1 April 2010 and 30 June 2010 were invited to participate in the online Survey Two (with paper option available), via a flyer issued by the government licensing authority (DTMR) and a reminder letter issued by DTMR one month later. Six months later, an email was sent to the participants of Survey Two asking them to complete their second online survey (Survey Three), with a reminder letter issued by DTMR one month later. Participants in the three online surveys were offered the chance to win petrol vouchers, Coles Myer vouchers, and movie tickets. Each survey contained the Behaviour of Young Novice Drivers Scale (BYNDS, Scott-Parker et al., 2010) which explores self-reported risky driving behaviours such as speeding, not wearing seatbelts, and driving at night. Surveys also contained items exploring novice driving experiences (e.g., crash, offence, unsupervised Learner driving), and attitudes and perceptions regarding peers.

Statistical analyses

Statistical analyses reported in this paper include comparison of means by methods including analysis of variance and chi-square tests, and multiple regression analyses to examine the predictive

relationships amongst variables of interest. All surveys were administered via KeySurvey Online Survey Software, and all analyses were undertaken in Statistical Package for the Social Sciences (SPSS), version 20.

Results

Peer influence during the pre-Learner and Learner licence phases

Thirteen percent of young drivers in Survey Two reported driving on the road before they had a valid Learner licence (13% of females, 13% of males, ns), with 97.5% stating they did so 10 or fewer times. Thirteen percent of young drivers in Survey Two also reported driving unsupervised as a Learner (11% of females, 16% of males, $p < .05$), with 98.1% stating they did so 10 or fewer times. A larger proportion of Learners who were in a romantic relationship reported pre-Licence driving (relationship: 15.7%, no relationship: 11.6%, $p < .05$) and driving unsupervised as a Learner (relationship: 16.2%, no relationship: 11.2%, $p < .05$). Interestingly, young drivers who were *not* in a romantic relationship reported significantly greater likelihood of bending the road rules in their future driving ($p < .05$).

Peer influence during the Provisional 1 licence phase

During the qualitative component of the research, the young drivers reported diverse experiences in the imitation or ignoring of the driving-related behaviours and attitudes of their peers (see Scott-Parker et al., 2012). This was explored further in the quantitative research. Young drivers with a P1 licence reported that their friends were models to imitate or ignore (see Scott-Parker et al., 2012). As can be seen in Table 1, a large proportion of young drivers reported that other young drivers, including their friends, were risky drivers (agreed/strongly agreed with the item). One fifth of young drivers reported that their friends thought it was okay to bend the road rules when driving, whilst only a handful of young drivers reported that they imitated the risky driving of their friends and that they would be teased by their friends if they did not bend the road rules while driving. Generally, male drivers reported greater imitation of risky friends' driving, greater perceived riskiness of their friends' attitudes, and less expected punishment from friends for risky driving. Male drivers also reported more pressure from their friends, and from their passengers, to *bend* the road rules when they were driving, whilst female drivers reported more pressure from their friends, and from their passengers, to *follow* the road rules when they were driving.

A considerable proportion of P1 drivers (38.7%) reported that they knew that their friends had been detected for a driving-related offence during the past six months, and that their friends' had been involved in a crash (39.7%) during the past six months. P1 drivers who reported their friends were risky drivers as evidenced by driving histories of road crash(es) and/or offence(s) also reported more risky driving. To illustrate, significantly more risky driving as measured by the BYNDS was reported by P1 drivers for whom friends had crashed (no crash BYNDS $M = 74.5$, crash BYNDS $M = 78.71$, $p = .012$); and offended (no offence BYNDS $M = 73.01$, offence BYNDS $M = 79.72$, $p < .001$). In addition, whilst not statistically significant ($p = .074$), of P1 drivers who reported they had been detected for an offence during the first six months of independent driving, 64.5% had friends who also offended during this time. Also whilst not statistically significant ($p = .142$), 12.9% of young drivers who had friends who crashed their car during the first six months of independent driving also reported a crash, compared to 8.6% of drivers who reported a crash themselves but for whom their friends did not crash their car.

Table 1 Proportion of P1 participants, by gender, who agreed/strongly agreed with the peer influence items

Items	Total *n* = 378	Males *n* = 113	Females *n* = 265
Peer influence items			
My friends think it is okay to bend the road rules	20.6%	27.5%	16.8%
My friends aren't concerned about following the road rules: They just want to have fun	9.0%	10.6%	8.3%
My friends don't follow the road rules all the time	44.4%	48.7%	42.6%
Bending the road rules made me popular with my friends	1.9%	5.3%	0.4%
My friends made fun of me if I didn't fool around in the car	5.1%	2.7%	6.0%
When I drove in a risky way, I did so because I remembered my friends did it too	6.1%	5.3%	6.5%
Seeing my friends bend the road rules influenced me to bend some road rules	7.6%	12.4%	5.7%
Other young drivers I know fool around while driving	62.0%	57.6%	63.8%
My mates liked to travel with me because I bent the road rules and made the trip more exciting	3.2%	6.2%	2.0%
My mates wouldn't have travelled as my passengers because I bent the road rules	21.7%	22.1%	21.4%
My friends would have thought I was really stupid if I bent the road rules	59.5%	52.2%	62.6%
Base driving on friends' driving	10.5%	12.3%	9.8%
Friends are risky drivers	16.4%	22.1%	14.0%
Pressure from friends to bend road rules	10.1%	15.9%	7.6%
Pressure from friends to follow road rules	53.5%	47.8%	56.1%
Pressure from passengers to bend road rules	8.8%	15.0%	6.0%
Pressure from passengers to follow road rules	60.1%	53.0%	62.0%
Likelihood of punishment			
No bad outcome, egged you on	7.1%	10.8%	5.7%
Bad outcome, egged you on	2.7%	3.6%	2.3%
No bad outcome, cheered	5.9%	9.7%	4.2%
Bad outcome, cheered	1.6%	0.9%	1.9%
No bad outcome, friends said nothing	21.4%	26.6%	19.2%
Bad outcome, friends said nothing	6.4%	6.2%	6.4%
No bad outcome, been unconcerned	20.3%	26.6%	17.8%
Bad outcome, been unconcerned	9.2%	7.1%	10.2%
No bad outcome, been disappointed	31.2%	21.3%	35.5%
Bad outcome, been disappointed	61.9%	52.2%	66.0%
No bad outcome, called you stupid	36.5%	26.5%	40.7%

Bad outcome, called you stupid	61.6%	60.2%	62.3%
No bad outcome, friends told you off	28.1%	20.4%	31.3%
Bad outcome, friends told you off	58.8%	54.9%	60.4%

Table 2 Multiple regression results for friend predictors of self-reported risky driving during the first six months of P1 driving

Variables	*B*	*p*	sr^2	R^2	*Adj* R^2	ΔR^2
Gender	.06	.18				
My friends think it is okay to bend the road rules	.08	.25				
My friends aren't concerned about following the road rules: They just want to have fun	.05	.44				
My friends don't follow the road rules all the time	.08	.18				
Bending the road rules made me popular with my friends	.01	.92				
My friends made fun of me if I didn't fool around in the car	-.09	.12				
When I drove in a risky way, I did so because I remembered my friends did it too	-.13	.15				
Seeing my friends bend the road rules influenced me to bend some road rules	.29	< .001	.02			
My mates liked to travel with me because I bent the road rules and made the trip more exciting	.26	< .001	.04			
My mates wouldn't have travelled as my passengers because I bent the road rules	-.01	.87				
My friends would have thought I was really stupid if I bent the road rules	-.22	< .001	.04			
Bad outcome, egged you on	.06	.25				
Bad outcome, cheered	.06	.32				
Bad outcome, friends said nothing	-.01	.88				
Bad outcome, been unconcerned	.00	.97				
Bad outcome, been disappointed	.04	.50				
Bad outcome, called you stupid	.02	.75				
Bad outcome, friends told you off	.03	.64				
				.291***	.256	.291

*** $p < .001$.

Peers as sources of punishments and rewards

In the small group interviews, young drivers reported friends were a source of punishment and rewards for their driving behaviour, including risky driving. The reactions of friends were believed to depend to a large extent upon the outcome of the behaviour, such that 'no bad outcome' (e.g., no crash, no offence) was not expected to result in any punitive consequences whilst a 'bad outcome' (e.g., a crash, an offence) was expected to result in further punitive consequences. Friends' reactions ranged from "*calling you stupid*", "*said nothing*", to encouraging the young driver to be risky by "*egging you on*" (Scott-Parker et al., 2012) (see Table 1). Consistent with these expectations, most Learners reported that their friends would have reacted negatively if there was a bad outcome, and would not have reacted if there was no bad outcome. A larger proportion of male drivers reported their friends' would encourage risky driving in response to driving outcome of either severity, and a larger proportion of females reported that their friends would not react if there was no bad driving outcome. In addition, a smaller proportion of males than females expected punishment for driving outcome of either severity. For young drivers who reported that their friends had been detected for an offence or had been involved in a crash during the first six months of independent driving, significantly less punitive reaction (less likely to tell the young driver off for the risky driving) for no bad outcome, and significantly more encouragement (more likely to egg the young driver on) was reported by young drivers.

Friend influence upon self-reported risky driving behaviour

The influence of the attitudes and behaviours of friends upon the self-reported risky driving behaviour of the P1 driver with 6 months driving experience was explored via multiple regression (MR) analysis of Survey Three results. As can be seen from Table 2, more self-reported risky driving behaviour, as measured by the BYNDS, was predicted by more imitation of the risky driving of their friends and the belief that their friends like to travel with them because the trip was more exciting because the young driver bent the road rules, whilst less self-reported risky driving was predicted by the belief that their friends would have thought they were really stupid for bending the road rules (F (18, 359) = 8.19, $p < .001$).

Given the differences apparent between the genders identified earlier, MR analyses were conducted separately for each gender (not shown), however it is noteworthy that the male sample size does not meet the minimum requirements of 186 drivers (based on n = 50 + [8 x number of predictors]), therefore the results for the males are suggestive at best. The significant predictors varied between the genders. For males, more self-reported risky driving behaviour was predicted by young drivers who believed their friends travelled with them because they made the journey exciting by bending road rules (β = .57, $p < .001$, sr^2 = .11), and friends think it is okay to bend road rules (β = .24, p = .032, sr^2 = .03); whilst less reported risky driving behaviour was predicted by friends who would think the young driver was really stupid for bending road rules (β = -.23, p= .016, sr^2 = .03.), and the belief that they would gain popularity amongst their friends by bending road rules (β = -.26, p = .035, sr^2 = .03), (F (17, 95) = 4.86, $p < .001$, *Adj* R^2 = .369). For females, more self-reported risky driving behaviour was predicted by young drivers who believed their friends travelled with them because they made the journey exciting by bending road rules (β = .14, p = .028, sr^2 = .01), and imitating the risky driving of their friends (β = .31, $p < .001$, sr^2 = .03), and having friends who don't follow the road rules all the time (β = .19, p = .012, sr^2 = .02) whilst less reported risky driving behaviour was predicted by friends who would think the young driver was really stupid for bending road rules (β = -.19, p = .003, sr^2 = .03.) (F (17, 247) = 5.44, $p < .001$, *Adj* R^2 = .222).

Discussion

One in eight participants reported driving on the road before they received a Learner licence, and

driving unsupervised as a Learner. These risky behaviours have considerable implications for the road safety not only for the adolescent themselves and their passenger(s), but for any other driver, passenger, pedestrian, motorcyclist, and cyclist who shares the road with them. Whilst the role of friends in the motivation for and performance of these behaviours requires further investigation, it is possible that the romantic partner in particular directly (eg., through overt encouragement) or indirectly (eg., through the adolescent's desire to see that partner) played a key role. Parents therefore are encouraged to monitor the behaviour of their pre-Licence adolescent, and to monitor the car use by their Learner, particularly if their child is in a romantic relationship. In addition, prior research has identified the role of the protective influence of romantic partners in the likelihood of intervening in the risky driving of the young driver (eg., Buckley & Foss, 2012). As such, interventions could target adolescents specifically in romantic relationships, highlighting the potential for them to (un)knowingly encourage risky behaviour by the young driver and their potential to act as positive, protective models. It is also noteworthy that a second conference paper examines the influence of parents on the risky behaviour of young drivers (see Scott-Parker et al., 2013b).

Moreover, interventions encouraging friends to impose consequences for risky driving, i.e., punishment-by-social-sanction rather than encouragement-through-reward, during the P1 period merit further consideration. Psychosocial rewards – evidenced as a more exciting journey providing impetus for friends to travel as the young driver's passenger – were associated with more risky driving, whilst the belief that friends would have though the young driver was stupid was associated with less risky driving. A considerable proportion of the riskiest young drivers reported that their friends would encourage them to be risky, even if there was a bad outcome, and that their friends were unlikely to discourage them from risky driving. Having friends who are tolerant of risky behaviour and rule violations (ie., deviance) has been found to be associated with speeding by young drivers (eg., Simons-Morton et al., 2012).

Furthermore, young drivers have been found to drive in a non-risky manner in the presence of adult passengers, such as their parents, (eg., Simons-Morton et al., 2011), further evidencing the social influence of peers. Interestingly, male young drivers reported greater pressure to risky from their friends, and their passengers, suggesting that interventions could separately target the young driver and the young passenger. Resilience-focused interventions (e.g., Senserrick et al., 2009) could enable young drivers to resist negative peer pressure, whilst passengers of young male drivers in particular could be encouraged to exert pressure for *safe* driving rather than *risky* driving. Such an intervention may be difficult, however, when it appears that friendship groups are characterised by risky young drivers rather than non-risky young drivers, as indicated by the young driver and their friends' high rates of crash and offence involvement. This highlights a chicken-and-egg issue which has pervaded socio-psychological research for decades: does the risky adolescent select friends who are risky, and as such risky driving is just another extension of a high risk orientation?; or does the risky behaviour emerge within the network of friends, and as such the risky driving by the adolescent arises through a complex web of peer-group interactions and reinforcement? (e.g., smoking and adolescents, Mercken et al., 2012). Notwithstanding this, peer-group interventions merit further consideration, particularly as prior research indicates the potential for peers to exert positive influences upon the driving behaviour of the adolescent (eg., Chapman et al., 2012; Lenne et al., 2011).

Whilst in a number of instances friends were found to be a negative influence upon the risky driving behaviour of their young novice, friends were also found to have the capacity to be a positive influence upon the driving behaviour of their young novice. Therefore given that friends are influential during the pre-Licence, Learner and the P1 driving periods, through the (non) administration of punishments, inadvertent and intended rewards, and the modelling and subsequent imitation of driving behaviours and attitudes, interventions which enhance their *positive* influence may improve road safety outcomes not only for young novice drivers, but for all persons who share

the road with them. Much remains unknown about the exact nature of peer modelling, peer-group intended (and unintended) rewards and punishments during the Learner and P1 period, and peer involvement during the P1 period. This information is crucial to inform the development, application and evaluation of interventions such as programs to encourage the modelling of safe driving behaviour by peers. In addition, young drivers' negative attitudes towards GDL programs has also been found to increase the likelihood of risky driving and crashes (e.g., Brookland & Begg, 2011), and the role of friends and the peer network in the development, maintenance and extinguishment of such attitudes merits further investigation.

Consistent with qualitative methodology, recruitment to the qualitative research ceased upon saturation of participant responses. Despite numerous attempts to recruit more participants for the second Queensland-wide survey, including the offering of incentives such as petrol vouchers, low response rates were achieved. In addition, numerous attempts were made to retain more participants in the longitudinal research of Survey Three, however extreme weather including cyclones and flooding which affected electricity supplies across much of the state during the follow-up period of the online survey appears to have contributed to the high attrition rate (AAP, 2011). Notwithstanding the low initial response rate and high attrition over the study period, the participants represented the state geographically, with Learner and P1 driver samples reflecting the geographic distribution of the state of Queensland's population (61.8% of the Learner and 62.9% of the P1 participants residing in inner city areas which contain 60.0% of the state's population, and 2.2% of the Learner and 1.7% of the P1 participants residing in remote areas which contain 2.0% of the state's population, (Commonwealth Department of Health and Aged Care, 2010). The survey samples contained more females than males, and where appropriate separate gender results were reported. Anonymity afforded by the online survey which did not collect any personally-identifying information and which was completed at a time and location convenient for each participant, is likely to have minimised any biases in the self-reported data, and access to the novice driver's perceptions and behaviours could not be collected via any other means.

Conclusion

Three quantitative surveys and small group and individual interviews were undertaken to explore young drivers' perceptions regarding the nature and mechanisms of the influence of their friends on their driving behaviour. Friends were found to be influential not only during the pre-Licence and Learner licence phases, but during the independent, P1 driving phase. Young drivers who believed that their friends were unlikely to punish them for risky behaviour, and who imitated the risky behaviour and attitudes of their friends, were the riskiest drivers. In contrast, young drivers who believed that their friends would think they were stupid if they were risky drivers who bent the road rules reported less risky driving. Interventions need to be multi-fold: interventions should encourage young drivers to be safe models of driving behaviour and attitudes, and to be safe passengers who exert pressure for their friends to be safe, rather than risky, drivers. Romantic partners in particular appear ideally positioned to exert positive influences, and to counteract negative influences, upon the young driver's on-road behaviour.

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