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Designing road safety interventions for young drivers – The power of peer influence

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ABSTRACT

Peer passengers are associated with risky driving behaviour and increased collision rate in young drivers, but the mechanism by which young drivers are influenced by their peers is not well understood. Here we report two studies that explore the effect of peer influence on young drivers. The first explored the relationship between susceptibility to peer influence and young drivers' engagement in risky driving behaviour. 163 young drivers completed self-report measures of risky driving behaviour and susceptibility to different forms of peer influence. Results showed that young drivers who were influenced by their peers to attain social prestige and through peers intervening in their decisions committed more driving violations. The second study sought to utilise the susceptibility of young drivers to peer influence by using peers to design and deliver a safety intervention, following the 'U in the Driver Seat' model from the US. When compared to a traditional fear appeal and a control, the peer intervention group reported safer attitudes and intentions to drive safely at follow-up. Together these studies provide insight into how peers influence young drivers' risky behaviour, and support the notion of using peer education tools in young driver safety interventions.

1. Introduction

Young novice drivers (under 25 years) are involved in more collisions than older drivers (ONS, 2014). These collisions are more likely to be classed the fault of the young driver and more often result in death or serious injury (Clarke, Ward, Bartie, & Truman, 2010; DfT, 2015). Road deaths account for 25% of deaths amongst 15–19 year olds, compared to 0.5% of deaths in the wider population and so understanding the factors that underpin young drivers' increased collision risk is imperative so that we can target them effectively with safety interventions.

The presence of peer passengers is one of the key factors implicated in the risky driving behaviour and increased collision rate of young drivers (e.g. Rice, Peek-Asa, & Kraus, 2003). Young drivers use driving as a means of socialising with their peers and are likely to have passengers more often, and to have a greater number of passengers per trip, than older drivers (Shope & Bingham, 2008). Unfortunately, it seems that young drivers are also more likely to engage in high risk behaviours such as speeding (Moller & Haustein, 2014; Rhodes, Pivik, & Sutton, 2015), drink driving (Bingham, Raymond, Michael, & Shope, 2007; Fernandes, Hatfield, & Job, 2010), not wearing a seatbelt (Williams & Shabanova, 2002) and night time/weekend driving (Doherty, Andrey, & MacGregor, 1998) when accompanied by peer passengers. Rice et al. (2003) analysed police reports

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of collisions involving 16–17-year-old drivers and found that driving with passengers was one of the most common predictors of a collision resulting in the driver being seriously or fatally injured.

Not only are collision rates higher for teenage drivers accompanied by teenage passengers, but these collisions are also more likely to be judged the fault of the young driver (Williams, 2003). For example, Preusser, Ferguson, and Williams (1998) analysed five years' data from the Fatality Analysis Reporting System (FARS) and found that the presence of passengers was implicated in proportionately more at-fault fatal collisions for drivers under the age of 24; whereas for older drivers the presence of passengers was neutral or a protective factor against at-fault collisions. The greatest risk for young drivers' involvement in an at-fault collision was the presence of a similar aged passenger. More recently, Williams and Tefft (2014) analysed police crash report data for the years 2005–2010. They found that more than 40% of 16 and 17-year-old drivers involved in fatal crashes had teenage passengers; and when teen drivers were accompanied by teen passengers they were more likely to be at fault.

Ouimet et al. (2010) investigated the age of the passenger further, using data from FARS and the US National Household Travel Survey. Their results indicated that whilst young drivers were most at risk when accompanied by teenage passengers (particularly male passengers); their collision risk was reduced in the presence of adult passengers. Simons-Morton et al. (2011) collected data on young drivers' during their first 18 months of licensure. They found that collision/ near collision rates for young novices were 75% lower in the presence of adult passengers but 96% higher among teenagers with risky friends. They suggested that low rates of risky driving when accompanied by adult passengers were indicative of teenagers' ability to drive safely; but that social influence may result in riskier driving in the presence of risky friends. Ouimet et al. (2013) conducted a systematic review of the literature on peer passengers and their effect on young drivers' collision risk. They echoed the findings of Williams, Ferguson, and McCartt (2007), finding a clear, consistent increased risk for peer passenger presence, particularly in fatal collisions, even when the young driver was accompanied by only one peer passenger.

It is male peer passengers that have the greatest negative effect on young drivers' risky driving. Simons-Morton, Lerner, and Singer (2005) observed young drivers' driving behaviour when exiting high school car parks with passengers or when alone. They found that teenage drivers drove faster than the general traffic and allowed shorter headways, particularly when accompanied by a male teenage passenger. Interestingly, whilst both male and female drivers allowed shorter headways in the presence of a male teenage passenger, when male drivers were accompanied by a female passenger, they allowed greater headways. The riskiest drivers were male teens accompanied by male teenage passengers – for whom the observed rate of high risk driving was double that of general traffic. Similarly, Chen, Braker, Braver, and Li (2000) analysed collision report data and found that male and female young drivers were most at risk of a fatal collision when accompanied by male passengers.

The presence of peer passengers is widely accepted as a risk factor for collisions in young drivers but the reasons why they pose such a risk remain relatively unclear. One suggestion is that adolescents are more susceptible to peer influence than other age groups (Steinberg, 2004), and young drivers are influenced by their peers to drive in a certain way. High susceptibility to peer influence has been linked to various measures of risky driving in young people. For example, Simons-Morton et al. (2011) found that speeding was associated with young drivers' susceptibility to peer influence, number of risky friends, tolerance of deviance, substance use and high sensation seeking. There is also some evidence supporting a neural basis for susceptibility to peer influence and risk taking in adolescence. Falk et al. (2014) found that young drivers' neural responses to social exclusion predicted an increase in simulated risk taking behaviour in the presence of a peer.

Peers can influence young drivers' behaviour either directly, through verbal encouragement, or indirectly, through the drivers' perceptions of how others think they should drive (Horvath, Lewis, & Watson, 2012). Passengers that verbally encourage the driver to perform risky behaviours are exerting 'active' influence, which is observable, involves action by the passenger and occurs within the driving context. Indirect or 'passive' influence is unobservable, originates outside the driving context and relates to the driver's perceptions of pressure from the passenger. Social Identity Theory (SIT) suggests that to strengthen feelings of group membership, people are motivated to behave in accordance with the group's norms (Tajfel, 1982). Thus young drivers are affected by passive peer influence because the presence of passengers implicitly encourages the driver to behave in accordance perceived group norms (Allen & Brown, 2008).

The idea that young people engage in risky driving in the presence of peer passengers to fulfil perceived peer group norms, and thus are susceptible to passive peer influence, has received research support. Authors such as Scott-Parker, Watson, and King (2009), Simons-Morton et al. (2011), Moller and Haustein (2014), Scott-Parker, Watson, King, and Hyde (2014) and Taubman-Ben-Ari, Kaplan, Lotan, and Prato (2015) all find that the perceptions a driver has of their friends' driving behaviour predicts their own driving behaviour. Conner, Smith, and Mcmillan (2003) found that male and female drivers reported feeling normative pressure to speed, and increased speeding intentions, when with peer passengers. Similarly, Bingham et al. (2016) found that young male drivers were only more likely to display greater simulated risky driving behaviour when accompanied by a risk-accepting peer passenger; but not when with a risk-averse one.

Studies comparing the relative impact of active and passive peer influence have been inconclusive. Sela-Shayovitz (2008) found that only passive peer influence (apprehension about friend's evaluations and attaining social prestige) was correlated with driving violations and collision involvement. No correlations with active peer influence were found. Similarly, Ouimet et al.'s (2013) simulator study found that the mere presence of a male teenage passenger in the vehicle with a male teenage driver reduced their attention to the road. Horvath et al. (2012) later failed to replicate this finding – reporting similar levels of speeding intentions arising from both active and passive peer influence. Most recently, Gheorghiu, Delhomme, and