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Dialling and driving: Factors influencing intentions to use a mobile phone while driving

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ABSTRACT

Despite being identified as an unsafe (and, in some jurisdictions, illegal) driving practice, the psychological factors underlying people's decision to use their mobile phone while driving have received little attention. The present study utilised the theory of planned behaviour (TPB) to examine the role of attitudes, norms, control factors, and risk perceptions, in predicting people's intentions to use their mobile phone while driving. We examined the predictors of intentions to use a mobile phone while driving in general, and for calling and text messaging in 4 scenarios differing in descriptions of vehicle speed and time pressure. There was some support for the TPB given that attitudes consistently predicted intentions to drive while using a mobile phone and that pressure from significant others (norms) determined some phone use while driving intentions, although less support was found for the role of perceptions of control. Risk was not generally predictive of safer driving intentions. These findings indicate that different factors influence each form of mobile phone use while driving and, hence, a multi-strategy approach is likely to be required to address the issue.

1. Introduction

Despite increasing evidence that mobile phone use while driving presents a risk to driver safety, many international (e.g., Törnros and Bolling, 2005) and Australian (e.g., Pennay, 2006) drivers engage in this behaviour (McCartt et al., 2006; Svenson and Patten, 2005; Wiesenthal and Singhal, 2005). A large scale self-report study in Australia found that 43% of mobile phone owners used their mobile phone while driving to answer calls, followed by making calls (24%), reading (16%), and sending (7%) text messages. Approximately a third of these drivers used hands-free units (Pennay, 2006) indicating that most Australian drivers use hand-held mobile phones.

Using a hand-held mobile phone while driving is illegal throughout Australia, yet observational studies reveal that, at any one time, approximately 2% of Australian drivers are engaging in this behaviour (Glendon and Sutton, 2005; McEvoy et al., 2005; Taylor et al., 2003). This figure is likely to be higher in jurisdictions where hand-held mobile phone use is not illegal. Observational studies, however, cannot detect use of a hands-free mobile phone and, thus, the number of drivers using any type of mobile phone at any time remains unclear. Although drivers consider hands-free mobile phone use as safer than hand-held (White et al., 2004), it has been found that using a hands-free mobile phone is not significantly safer than using a hand-held mobile phone while driving (McEvoy et al., 2005; Svenson and Patten, 2005). Thus, mobile phone use while driving, irrespective of type of handset, is an unsafe driving practice.

To combat this unsafe driving practice, Australian road safety interventions have typically used a deterrence-based approach comprising the combined use of enforcement and educational campaigns (e.g., Australian Mobile Telecommunications Association, 2005; Queensland Transport, 2007). These methods, however, may not account for the numerous psychological and social factors motivating driver behaviour (Watson et al., 1996). In the case of mobile phone use while driving, these factors include benefits such as: feeling safe (Carroll et al., 2002), using the vehicle as a 'mobile office' (Eost and Flyte, 1998), improved social networking, use of otherwise unprofitable time, and ease of contact with emergency services reducing accident response times (Lissy et al., 2000). Given the practical, social, and psychological benefits of using a mobile phone, it is not surprising that mobile phone users, in general, perceive that the benefits outweigh the risks (Lissy et al., 2000; Walsh and White, 2006). It is, therefore, reasonable to expect that positive attitudes toward mobile phone use would influence the decision to use a mobile phone while driving.

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While a large body of research reports the prevalence and risks of using a mobile phone while driving, fewer studies have focussed on the psychological underpinnings of this behaviour. The small number of studies examining the factors influencing mobile phone use while driving (e.g., Brusque and Alauzet, 2008; Lissy et al., 2000) have not employed a theoretical decision making framework to understand the complexity of people's decision making in this context. As observational studies indicate that the level of mobile phone use while driving is increasing each year (Eby et al., 2006), there is a necessity to determine the psychological factors influencing this behaviour. The present research, then, uses a well-known decision making model, the theory of planned behaviour, as a theoretical framework to investigate the psychosocial factors influencing mobile phone use while driving in an Australian context so that strategies to counteract this common, yet unsafe, driving practice may be more effectively designed and targeted.

1.1. The theory of planned behaviour

The theory of planned behaviour (TPB; Ajzen, 1991) maintains that intentions (i.e., readiness to act) are the most proximal determinant of behaviour. Intentions are influenced by attitudes (positive or negative evaluations of performing a behaviour), subjective norms (perceived social pressure to perform or not perform a behaviour), and perceived behavioural control (PBC; perceived ease or difficulty of performing a behaviour, also believed to be a direct predictor of behaviour itself). Attitudes, subjective norms and PBC are determined by underlying behavioural, normative and control beliefs, respectively.

A meta-analysis of 185 tests of the TPB provided support for the efficacy of the model in predicting intention and behaviour across a variety of contexts (Armitage and Conner, 2001). Intentions were a strong predictor of subsequent behaviour explaining, on average, 27% of the variance in behaviour with a further 2% of variance attributable to PBC. Attitude, subjective norm, and PBC explained 39% of the variance in intention. More recently, the TPB has been used successfully as a theoretical framework to explain high-level mobile phone use (Walsh and White, 2007). Within the road safety domain, the TPB has examined a number of behaviours including: pedestrians' road crossing intentions (Evans and Norman, 1998; Holland and Hill, 2007); traffic violations (Parker et al., 1992); and compliance with speed limits (Elliott et al., 2003; Newnam et al., 2004). Overall, these studies suggest that the TPB should be an effective framework to understand the decision to use a mobile phone while driving.

1.2. Risk perceptions

The TPB allows for the possibility of modifying the model to incorporate additional factors that may impact on decision-making (Ajzen, 1991). One factor relevant to unsafe driving practices in general is an individual's awareness and perception of risk (Stradling and Parker, 1997). When deciding to perform a behaviour, individuals engage in a consideration of the perceived risks that may result from behavioural performance (Bagozzi, 1981; Fishbein and Ajzen, 1975). Two major risks of using a mobile phone while driving are an increased risk of crashing (Lamble et al., 1999, 2002) and the risk of apprehension (due to the illegal nature of the behaviour) if using a hand-held mobile while driving (Queensland Transport, 2007). Although Australian drivers appear to be aware of the risks of using a mobile phone while driving, an underestimation of these risks may result in a greater likelihood that drivers will engage in unsafe driving practices (Kannellaidis et al., 1995; McEvoy et al., 2006; Wogalter and Mayhorn, 2005).

Given the risky nature of using a mobile phone while driving and the prevalence of this behaviour, we assessed the impact of an individual's risk perceptions (perceived crash risk and perceived risk of apprehension) on their decision to use a mobile phone while driving. Specifically, we examined the distinct mobile phone use behaviours of calling and text messaging while driving as each behaviour requires slightly different attentional resources (Hosking et al., 2005; Lamble et al., 1999, 2002). Calling involves more auditory processing whereas text messaging requires manual manipulation of the phone and uses more visual processing. Therefore, drivers may evaluate the risks differently. We examined intentions to call and text message while driving across four different scenarios to achieve this aim. Scenario-based measures within a TPB framework have been used in other road safety research (e.g., Conner et al., 2003; Evans and Norman, 1998, 2003; Holland and Hill, 2007; Parker et al., 1992) and have the advantage of measuring on-road performance in a consistent and safe manner by ensuring that risks to road users are minimised whilst avoiding problems with recall of behavioural performance.

1.3. The current study

The aims of the current study were two-fold. First we aimed to investigate the psychosocial factors influencing the decision to use a mobile phone while driving in an Australian context. Using the TPB we examined the role of attitudes, subjective norm, and PBC in the prediction of intentions to use a mobile phone while driving. A second aim was to use an extended TPB model to examine the impact of perceived crash risk and perceived risk of apprehension on intentions to engage in the specific mobile phone behaviours of calling and text messaging while driving in four different scenarios when vehicle speed and time pressure were varied.

In the case of general mobile phone use while driving, it was hypothesised that:

Hypothesis 1. Intention to use a mobile phone while driving would be influenced by respondents' attitudes, perceived social pressure, and perceived ease or difficulty of using a mobile phone while driving.

In the case of calling and text messaging, while driving in four different scenarios (for a description of scenarios see Section 2.2.3), it was hypothesised that:

Hypothesis 2. Intentions to call and text message while driving in four different scenarios would be influenced by respondents' attitudes, perceived social pressure, and perceived ease or difficulty of calling/text messaging while driving.

In relation to the role of risk perceptions in the prediction of intention to call and text message while driving in four different scenarios, it was hypothesised that:

Hypothesis 3. A greater risk of crashing and/or being apprehended for using a mobile phone while driving would influence intentions to call and text message across the four different scenarios.

2. Method

2.1. Participants and procedure

Prior to conducting the study, ethical clearance was applied for and granted from the university's ethical body. Data were collected over a period of 4 days in early December 2006 at large petrol (gas/filling) stations on major highways north and south of Brisbane, Queensland. The sites were chosen as their location near