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To cite this article: Hernan E. Riquelme, Fawaz Saleh Al-Sammak & Rosa E. Rios (2010) Social Influences Among Young Drivers on Talking on the Mobile Phone While Driving, Traffic Injury Prevention, 11:2, 127-132, DOI: 10.1080/15389580903536712

To link to this article: http://dx.doi.org/10.1080/15389580903536712

Published online: 05 Apr 2010.

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Social Influences Among Young Drivers on Talking on the Mobile Phone While Driving

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Objective: This study set out to measure the influence of injunctive, subjective, verbal, and behavioral norms on talking on a mobile phone while driving. In particular it examines social influences that have been neglected in past research, namely, injunctive norms and explicit verbal and behavioral norms communicated by law enforcers with regard to using a mobile phone when driving. All four types of social norms have rarely been used in studies of this social phenomenon, except for occasional exceptions drawing on Ajzen’s theory of planned behavior, which addresses only one: subjective norms.

Method: Regression analysis of data collected from young drivers from 217 questionnaires is used to predict the intention of motorists to continue talking on their mobile phones while driving. Selective interaction effects, the purpose of the call, and injunctive and subjective norms were included.

Results: The results show that the explicit verbal and behavioral law enforcement norms, the subjective norms, and the interaction of the injunctive norm with the purpose of the call are significant predictors of the unlawful behavior.

Conclusions: The results taken together seem to imply that social marketing is likely to encounter difficulty in changing behavior because the subjective norm (what others think I should do) coupled with the lack of enforcement (verbal norms) play important roles in maintaining the unlawful behavior. Moreover, the perception that talking on the mobile phone while driving is acceptable behavior (injunctive norm) in conjunction with the purpose of the call create further challenges to social marketers. The results have implications on policy makers and enforcers. Law enforcers should do their job to prevent the wrong behavior in the first place. In addition, campaigns may be directed to convince the target audience about the false norms and use persuasive communication to emphasize the potential costs of maintaining the unlawful behavior.

Keywords Social influence; Mobile phone distraction; Social norms; Driving

INTRODUCTION

There has been an increasing general interest in understanding why drivers still engage in talking on the mobile phone while driving despite the substantial evidence that distraction and inattention are the main causes of road crashes (Dragutinovic and Twisk 2005; Royal Society for the Prevention of Accidents [RoSPA] 2003). Statistics on the use of mobile phones while driving differ according to country, year, and type of phone (handheld versus hands-free). In Western Australia in 2001, 1.5 percent of drivers were observed using the former type while driving. In marked contrast, a national breakdown services organization in the United Kingdom had reported a 37 percent frequency the year before, whereas the corresponding figures in the United States ranged between 70 and 90 percent, at least some of the time (Dragutinovic and Twisk 2005).

Received 20 October 2009; accepted 7 December 2009.
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to talk on a mobile phone while driving and the effect on their driving performance. A more notable exception is a recent study by Walsh et al. (2008) incorporating the subjective norms and behavioral control variables of Ajzen’s (1985) framework.

This paucity of research into social influence factors may be explained by a preference among researchers for the epidemiological type of study, by the difficulty of distinguishing between the various norms, especially descriptive and injunctive norms (Bicchieri 2006), and perhaps by the belief that once laws are passed and individuals are required to adhere to them, social norms are repressed.

On this last point, research studies on the effects of laws and other policy instruments to control this behavior are not conclusive. Some report a decline in the use of mobile phones while driving in the early stages of the enforcement of the law but no significant decline after 18 months (McCarrt and Geary 2004; McCartt et al. 2006). This finding prompted Cohen and Graham (2003) to calculate the costs and benefits of law enforcement, coming to the conclusion that the net benefit of banning phoning while driving was zero.

It is our contention that nonadherence to the law is influenced by social factors, in particular social norms. Thøgersen (2008) points to situations in which acting to the benefit of society conflicts with one’s own narrow self-interest, which he describes as a “social dilemma,” whereas Bicchieri (2006, p. 459) argues that social norms are an important factor in cooperative behavior. Accordingly, we set out to investigate the importance of several norms on the unlawful behavior of driving while talking on a mobile phone.

To understand the factors that influence driving while talking on the mobile phone, researchers have used several methodological approaches, among others, surveys, experiments, epidemiological studies, and simulation (McCartt et al. 2006).

In one of the pioneering studies using a case crossover design, Redelmeier and Tibshirani (1997) found that drivers were four more times exposed to a traffic accident when they used their mobile phones while driving than when not using them and that hands-free phones were not safer than handheld ones. A similar study conducted by McEvoy et al. (2005) corroborated this earlier finding.

Other studies have concluded that drivers self-regulate their use of the mobile phone in response to perceived driving demands. They make more calls in light than in heavy traffic and in the process reduce speed and keep further back from the vehicle in front. An epidemiological study reports that drivers who use the phone while driving are more likely to be in an accident than those who do not (Dragutinovic and Twisk 2005). Relative crash risk does not differ between male and female drivers or according to the type of phone. However, drivers perceive hands-free sets to be far less dangerous than handheld phones; in some studies, these devices are seen to pose no risk at all (Dragutinovic and Twisk 2005).

Later studies conducted on a simulator found that driving tasks were compromised by the acts of physically reaching for and manipulating the controls of a mobile phone while driving and conversing simultaneously irrespective of handheld or hands-free mode (McCarrt et al. 2006). The most common effect was slow reaction, more pronounced among drivers over 50 years old than among their younger counterparts. There is mixed evidence, however, as to the differential impact on driving tasks between teenagers (16–18) and young adults (19–22). No clear gender differences have been identified.

A recent study used the theory of planned behavior to account for the behavior of talking on a mobile while driving among users of hands-free and handheld mobile phones. The study found that the greater the perceived social approval (normative beliefs), the higher the likelihood of engaging in the behavior and the higher the perceived risk (control beliefs), the lower the likelihood of using a hands-free phone. These two factors did not differentiate between users of hands-free from handheld phones, only the behavioral beliefs did (White et al. 2010).

The use of social influences is not new in traffic behavior; specifically, the earliest studies of their role in the explaining of driving offenses date from the early 1990s. Parker et al. (1992) applied TPB to the explanation of four different violations: drinking and driving, speeding, tailgating, and dangerous overtaking. It proved capable of explaining a considerable amount of the variance in intention to commit any of the four offenses. That study also found that younger drivers perceived less pressure from others to abstain from the forms of behavior in question and were more highly motivated to comply with the perceived wishes of those in their reference groups. Brehmer (1994) investigated the influence of subjective norms and concluded that drivers’ social norms, rather than their expectations concerning accidents, were the most potent factor in determining their behavior.

To the best of our knowledge, there is no evidence in the literature reviewed that researchers have investigated exclusively the role of all types of norms, namely, injunctive, subjective, verbal, and behavioral norms, the last two communicated by law enforcers. Therefore, this study aims at identifying which among all four types can be useful predictors of talking on the phone while driving and the possibility of their compounded effect through their interaction.

METHOD

The social norms used in our study are based on a selection of social influences reported by van den Putte et al. (2005). They comprise both explicit verbal norms and general behavioral norms, constituting direct and overt attempts by actors in the social environment to encourage individuals to behave in a particular way.

A type of norm of obvious relevance to our research is labeled injunctive (Cialdini et al. 1991), reflecting its role as a quasi-remedy against a given form of behavior. Cialdini et al. (1991) made a distinction between injunctive norm and subjective norm (a concept used in the TPB). The former concept is defined in terms of an individual’s perception of how acceptable a certain behavior is in society, and the latter “whether other individuals,
whose opinions are valued, think that one should personally perform a certain behavior or not” (van den Putte et al. 2005, p. 188). This difference has been tested elsewhere and proved helpful in predicting intention to purchase a preferred brand (Smith et al. 2008).

Each construct and its measures are described as follows. Respondents were asked to express their level of agreement or disagreement with the statements on a 7-point Likert scale where 1 = very strongly disagree and 7 = very strongly agree.

- **Injunctive norm:** Two items were used as measures: “To talk on a mobile phone while driving is totally acceptable behavior”; and “Not talking on a mobile phone while driving would be antisocial.”
- **Subjective norms:** Two measures: “My friends would disapprove if I did not talk on a mobile phone while driving”; and “Anybody I care about would be mad at me if I stopped talking on a mobile phone while driving.”
- **Verbal norms:** Two statements were used as measurement items: “Nobody in my environment has ever said that I should not talk on a mobile phone while driving”; and “Police do not even caution a driver for talking on a mobile phone while driving.”
- **Explicit behavioral norms:** Two items: “Nobody ever stops you if you are talking on a mobile phone while driving”; and “Police do not fine a driver for talking on a mobile phone while driving.”

Because the statistics for road traffic accidents in Kuwait show that the 18- to 35-year-old age group is disproportionately involved, 1500 questionnaires were distributed among college and part-time postgraduate students in 2008. The data for analysis were collected by 217 completed questionnaires, representing a 14.6 percent response rate.

Hierarchical regression analysis was used to examine the effects of the social influence variables (i.e., independent variables) on the specific intention to give up the habit of using a mobile phone while driving. The dependent variable is measured by one item: “I definitely will not talk on a mobile phone while driving” on same 7-point Likert scale. This measure has been considered a strategic decision, whereas the decision to adapt the behavior (deciding whether to talk on a mobile or not while driving) according to certain conditions is called a tactical level decision (Poysty et al. 2005).

It was expected that social influence variables would have more effect on maintaining the behavior among those respondents who used their mobile phone mainly to socialize (chatting with family and friends) than among others who use the mobile for efficiency reasons (using time productively; e.g., work). Four interactions were therefore incorporated in the regression analysis. Two interactions between the injunctive norm and the purpose of the call were measured by combining the variable “Not talking on a mobile phone would be antisocial” and the purpose (to socialize or to use time productively). A second pair related the subjective norm (“My friends would disapprove if I did not talk on a mobile phone while driving”) to the purpose of the call. The purpose of the call was obtained by asking participants to rate the conversation purpose in statements such as: “I talk on a mobile phone while driving to keep in touch with my friends and family (e.g., to socialize)”; “Making calls on a mobile phone while driving is a good opportunity to use time productively (e.g., to work)”; “I feel making calls on a mobile phone while driving is good to kill idle time.”

Analysis proceeded by first regressing gender, age, and hand-held versus hands-free phone type against the dependent variable. All social norm variables were then added, followed by the four interactions. Finally, the backward elimination procedure was used to remove interaction terms that were not statistically significant at \( p = .10 \), in the quest for a simpler model.

**RESULTS**

The sample profile was as follows: 61 percent male; 65 percent are users of handheld mobile phones; 61.3 percent is between 18 and 24 years of age; 26.5 percent is between 25 and 34 years of age; 80 percent use the mobile phone while driving to make or answer calls several times a day; 62 percent use it send short message service text messages several times a day. 42.4 percent disagreed with the statement: “I definitely will not talk on a mobile phone while driving anymore” and a similar proportion (40%) intends to stop.

Table I shows that the injunctive and explicit verbal and behavioral norms associated with law enforcement are the main factors in predicting the intention to stop talking on the phone while driving. Specifically, those are “My friends would disapprove if I did not talk on the mobile phone while driving”; “Police do not caution a driver for talking on a mobile phone while driving”; “Police do not fine a driver for talking on a mobile phone while driving”; and the term expressing interaction between the injunctive norm, “Not talking on the mobile phone and driving would be anti social” and the purpose of the call, to use the time productively. The variables in the model explain a reasonable amount of the variance in intention to stop talking while driving (\( R^2 = .276 \)). There was a statistically significant change at \( p < .10 \) in the increase between a model without the interaction term and one including it (\( R^2 \) change = 0.037; \( F(4, 165) \) change 2.097; \( p = .08 \)).

Perceiving not talking on the phone while driving as anti-social, in addition to explicit verbal and behavioral norms, has the strongest effect on the intention to stop talking on the phone while driving. The interaction between perceiving the behavior as not antisocial and recognizing the opportunity to use time more productively has a stronger influence on the intention to abstain from the unlawful behavior, although only at a significant \( p \) value of .08. Further descriptive analysis showed that only one in three respondents disagreed with the statement that talking on the mobile phone while driving is totally acceptable behavior.
Recent years have witnessed increasing interest in investigating the effects of and reasons for the use of mobile phones while driving. Although countries have passed laws to prevent this behavior, there are still many drivers who are prepared to risk their own safety, and that of their passengers and others, by continuing to make and take calls or text messages on a mobile phone while driving.

Social norms have rarely been studied in this context, except for the subjective norm embedded in Ajzen’s (1985) theory of planned behavior. The purpose of our own study was to gain a better understanding of why drivers maintain their behavior despite social norms. The results show that those are important in explaining the persistence of driving and talking on the phone. This holds especially true for drivers’ perceptions of the acceptability of this particular behavior, either in individual terms (the subjective norm) or in terms of society in general (the injunctive norm).

Our results do suggest that perception of other people’s actual and intended behaviors has an effect on the individual’s intention to maintain a preexisting behavior pattern. Those who have a stronger intention to continue the unlawful behavior perceive more normative approval from friends and others in significant reference groups and greater endorsement via the explicit verbal and behavioral norms conveyed to them by the enforcement authorities (in short, that the police do not warn or fine drivers seen using their phones while driving). This finding is important in correcting unacceptable behavior. If drivers know that nothing will happen to them, or that fines are small and it is easy to avoid paying, they will continue as before. Our study on teenage drivers’ use of mobile phones seems to corroborate research conducted on the reasons why North Carolina’s cell phone restrictions had little or no effect shortly after the law took effect. It was reported in the study that parents and teenagers expected relatively low enforcement by police previous to the law, and they even felt that police were not enforcing the law hard enough after the law was passed (Foss et al. 2009).

A further factor accounting for the persistence of behavior is the purpose of the call. The intentions of those who feel social pressure to use their mobile phone while driving are reinforced by the rationalized advantage that it is a productive way of spending their time. This finding confirms previous speculation concerning interactive effects by Walsh et al. (2008).

One must be careful with this comparison, Walsh et al.’s study used “tactical-level decision” as dependent variables described in four different driving scenarios.

Our results further confirm the importance of subjective norms found in Walsh et al. (2008) and in the intention to violate speed driving laws (Forward 2009; Warner and Aberg 2008) and expand the explanation of the talking-and-driving phenomenon by adding explicit verbal and behavioral norms. The conclusion of that study was that, after controlling for type of mobile phone and gender, subjective, injunctive, and explicit verbal and behavioral norms were good predictors of intention to abandon the behavior. Our study did not find that age, gender, or type of phone had any potential moderating effect, but that may be attributable to the relatively small data set available for analysis. This finding does not support previous studies (e.g., Poysti et al. 2005; Walsh et al. 2008) where age was found as a significant predictor of the intention to quit driving and talking on the mobile phone. Perhaps the difference could be accounted for by the measure used as dependent variable and/or the overemphasized young driver (18–24) segment in our sample. In Walsh et al.’s

### Table I

Hierarchical regression coefficients

<table>
<thead>
<tr>
<th>Model 1</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
<th>$F$</th>
<th>beta</th>
<th>Standardized beta</th>
<th>Standardized beta</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.000</td>
<td>0.002</td>
<td>0.981</td>
<td>0.052</td>
<td>0.497</td>
<td>0.000</td>
<td>0.000</td>
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<tr>
<td>Age</td>
<td>0.02</td>
<td>0.003</td>
<td>1.184</td>
<td>-0.122</td>
<td>0.317</td>
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<td>0.000</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Model 2</th>
<th>Gender</th>
<th>-0.055</th>
<th>0.432</th>
<th>0.018</th>
<th>0.812</th>
<th>-0.053</th>
<th>0.461</th>
<th>-0.038</th>
<th>0.630</th>
<th>Acceptable</th>
<th>-0.005</th>
<th>0.947</th>
<th>Antisocial</th>
<th>-0.259</th>
<th>0.002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.032</td>
<td>0.682</td>
<td>Device type</td>
<td>-0.046</td>
<td>0.516</td>
<td>No one stops you</td>
<td>-0.159</td>
<td>0.042</td>
<td>No one stops you</td>
<td>-0.186</td>
<td>0.016</td>
<td>Police fines</td>
<td>-0.259</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>Other’s pressure</td>
<td>0.063</td>
<td>0.759</td>
<td>Police warning</td>
<td>-0.260</td>
<td>0.001</td>
<td>Police warning</td>
<td>0.24</td>
<td>0.195</td>
<td>5.32</td>
<td>-0.270</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model 3</th>
<th>Constant</th>
<th>0.000</th>
<th>0.043</th>
<th>0.614</th>
<th>0.046</th>
<th>0.516</th>
<th>0.005</th>
<th>0.947</th>
<th>-0.259</th>
<th>0.002</th>
<th>0.232</th>
<th>0.167</th>
<th>Interaction injunctive norms × use of time</th>
<th>-0.251</th>
<th>0.087</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction injunctive norms × socialize</td>
<td>0.054</td>
<td>0.801</td>
<td>Interaction subjective norms × use of time</td>
<td>-0.141</td>
<td>0.565</td>
<td>-0.27</td>
<td>0.215</td>
<td>4.564</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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</tbody>
</table>

*Acceptable = To talk on the mobile phone while driving is totally acceptable behavior; Disapproval = My friends would disapprove if I did not talk on the mobile phone while driving; Others’ pressure = Anybody I care about who would disapprove; Antisocial = Not talking on the mobile phone while driving would be antisocial; Police fines = Police do not fine a driver for talking on the mobile phone while driving; Nobody ever stops you if you are talking on the mobile phone while driving; Antisocial = Police do not even caution a driver when talking on the mobile phone while driving.

### DISCUSSION AND CONCLUSIONS

Recent years have witnessed increasing interest in investigating the effects of and reasons for the use of mobile phones while driving. Although countries have passed laws to prevent this behavior, there are still many drivers who are prepared to risk their own safety, and that of their passengers and others, by continuing to make and take calls or text messages on a mobile phone while driving.
(2008) study age appears as a statistically significant predictor of the intention to use a mobile while driving in general and in two of the four scenarios, namely, when travelling at 100 km/h and late and waiting at traffic lights and late. Given the high percentage of young drivers, our study is more comparable to Zhou et al.’s (2009) results. In their study of young drivers in Beijing, age did not predict intention to use a mobile while driving in either of two situations: using a handheld device and driving at 60 km/h or using a hands-free device and driving at 60 km/h.

The explicit verbal and behavioral norms have not been studied in previous research in relation to the behavior examined in our study. Overall, our results provide qualified support for the conclusion that a model based on social norms is effective in explaining the use of a mobile phone while driving. The model also highlights the need to contextualize behavior. In our opinion, the influence of explicit verbal and behavioral norms will be more relevant in some countries than in others. For example, varying permissiveness of police from one place to another can reinforce or inhibit maintenance of the unlawful behavior. A research study in the United States indicated that not all states have enforced the law limiting handheld device use while driving. Long-term compliance with the ban was stronger in Washington, D.C., than in New York or in North Carolina, for example (Foss et al. 2009).

In the case of Kuwait (and this may apply in other countries of which we have experience), the traffic police play an important role in inhibiting the unlawful behavior. If they were not perceived as strong enforcers of the relevant regulations, local drivers would have little disincentive to talking on the phone while driving.

Our findings point to the importance of social marketing campaigns to reach not only individual drivers but business drivers, who may try to maintain the unlawful behavior because they see a car phone as an essential aid to productive use of their time. Campaign messages should thus aim at changing the attitude that phoning while driving is totally acceptable behavior and might usefully address the accidental influence of law enforcers in maintaining that behavior. If the police do not warn or if fines are not punishing enough, company drivers in particular will see little incentive to change the habit and, indeed, some incentive to continue it.

In practice, social marketing is likely to encounter difficulty in changing behavior because the descriptive norm appears to be that talking on the phone while driving is acceptable behavior. Campaigns must therefore try to convince the target audience that this is a false norm, and use persuasive communication to emphasize the potential costs of maintaining the unlawful behavior. Messages could profitably be directed at the members of peer groups and families, who may often make the calls that the driver is answering.

Our study, given its nature as a pilot, did not collect a large data set and thereby imposed limits on the statistical analysis that could be performed. For example, the purpose of the calls could have been investigated more thoroughly, rather than aggregating the data into productivity-related calls and social calls. A large majority of the sample belonged to relatively young age brackets: 18–24, 63 percent and 24–34, 26 percent. This may have had an influence on the current results because previous studies have shown that there is a tendency for younger people to commit the most driving offenses generally. Given some of the limitations mentioned before, the results of this study cannot be generalized to a population at large in Kuwait.

Because our study was conducted ahead of a government campaign in Kuwait alerting drivers to the law and to the danger of talking on their mobile phones while driving, it will in due course be extended to examine the communication effect on attitudes to and perceptions of social norms.

ACKNOWLEDGMENT

The authors are grateful to Dr. Brian Ritchie for the editing of the manuscript and to the anonymous reviewers for their helpful comments.

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