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Risky driving among young male drivers: The effects of mood and passengers

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ABSTRACT

Young male drivers are at greater risk of automobile crashes than other drivers. Efforts to reduce risky driving in this population have met with mixed success. The present research was designed to examine the effects of induced mood and the presence or absence of passengers on risky driving in young male drivers. Male drivers ($n = 204$) aged 16–18 were tested in a driving simulator. This study employed a 2 (happy/sad mood) by 2 (passenger present/absent) between-subjects factorial design, and examined driving behavior in a simulator. Measures of risky driving were combined into two factors representing speed (e.g., exceeding the speed limit) and carelessness (e.g., crossing the center line). Findings indicated that driving with a passenger resulted in faster driving than driving alone. Although there was no significant main effect of induced mood on driving, results revealed a significant interaction of mood and passenger conditions: when in a happy mood, driving with a passenger significantly increased driving speed. There were no significant effects of passenger or mood on careless driving. In conclusion, both mood and passenger presence are important factors in fast driving among young male drivers. Results are discussed in the context of developing more effective countermeasures for this at-risk population.

1. Introduction

Teen drivers are responsible for a disproportionate number of automobile crashes resulting in injury and death every year (CDC, 2013; NHTSA, 2012). Although innovations such as graduated drivers licensing have helped reduce the crash rate in recent years (Shope, 2007; Vanlaar et al., 2009), motor vehicle accidents are still the single most prevalent cause of death to young people in the US and worldwide (WHO, 2013). Thus, efforts to reduce deaths attributed to young drivers are still needed.

Young male drivers are more likely to get into car crashes than female drivers of the same age (Lardelli-Claret et al., 2011; NHTSA, 2013; Shope & Bingham, 2008). Additionally, the types of crashes for which male drivers are responsible are more devastating than those of female drivers: male drivers are typically involved in higher speed crashes, often involving the car leaving the roadway (Rhodes, Brown, & Edison, 2005). Such crashes are characterized by greater likelihood of fatalities and

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higher numbers of injuries per crash. Research to understand better the factors that specifically put young male drivers at risk is warranted.

The present study extends previous work into the psychological and social contributors to crash risk. Specifically, it examines how the presence of passengers influences the driving behavior of young male drivers, as well as whether a shared mood state (i.e. the driver and passenger are both placed in a happy or sad mood) influences the risk-taking behavior of young male drivers.

1.1. Emotion and driving behavior

Although a large body of work has accumulated on the effects of anger on driving (see e.g., Mesken, Lajunen, & Summala, 2002; Underwood, Chapman, Wright, & Crundall, 1999; Wells-Parker et al., 2002), research has recently begun to focus on the effects of positive emotions on both perceptions of and experiences while driving. Young male drivers have been found to report significantly greater enjoyment in driving (Harré, Brandt, & Dawe, 2000; Harré, Field, & Kirkwood, 1996), and they report greater enjoyment of risky driving behavior, than their older and female counterparts (Rhodes & Pivik, 2011). These positive emotions about driving appear to carry risk for young male drivers: those who like risky driving behaviors more are more likely to engage in them (Blows, Ameratunga, Ivers, Lo, & Norton, 2005; Rhodes & Pivik, 2011). Thus, positive emotion associated with driving may increase driving risk (Taubman-Ben-Ari, 2012), especially for young male drivers.

Attitudes toward driving and reported enjoyment of driving are distinct from the mood one may experience while driving (see Cohen, Pham, & Andrade, 2008 for a detailed treatment of the distinctions among mood, emotion, and attitude).Much of the work on anger and driving has focused on *integral* affect, which is an emotional experience generated by the behavioral context. The present research focuses on *incidental* affect, which is a mood state unrelated to the context of the behavior. Research has demonstrated that incidental mood has meaningful and significant effects on information processing (Turner, 2011). Thus, the current study extends prior work by examining the experimental induction of positive and negative moods (incidental affect) while engaging in a simulated driving task.

The role of affect in risky driving is not entirely clear at present, partly because the ways in which affect have been defined. For example, early work in this area found that when drivers anticipated positive emotional outcomes for traffic violations, they were more likely to engage in them than participants who did not anticipate positive affect (Parker, Manstead, Stradling, & Reason, 1992; Parker, Reason, Manstead, & Stradling, 1995). Other researchers did not find an effect, but this was a study of the effect of experienced emotion on driving behavior (Arnett, Offer & Fine, 1997). More recent work has found that the type of emotion experienced may differentially influence behavior. Mesken (2006) showed that two negative emotions, anger and fear, have different effects on driving behavior. Specifically, fear, but not anger, increases one's perception of risk, and anger may inhibit one's aversion to risky behaviors. Thus, work is needed to better understand the role of emotional concomitants of driving behavior.

Basic research in the psychology of emotions has a long history (Cacioppo & Gardner, 1999; Ekman, 1992; Zajonc, 1994) and research specifically focused on positive emotions has proliferated in recent years (Fredrickson, 2003). However, this work has just begun to be applied to the problem of risky driving. One theoretical perspective on the role of positive affect in decision making that can be informative is the affect heuristic (Slovic, Finucane, Peters, & MacGregor, 2004; Slovic & Peters, 2006). According to this view, positive affect can function as a heuristic cue in which the belief that something is fun to do guides interpretations of the level of risk associated with that behavior: Specifically, things that are perceived as enjoyable are perceived to carry less risk. Recent research on perceived risk and positive affect toward driving has been consistent with this view (Rhodes & Pivik, 2011).

Other theoretical perspectives on the role of emotions in task performance suggest that when in a positive mood, a person is in an appetitive motivational state, meaning that one is motivated to approach novel stimuli (Fiedler, 2001). In this motivational state, one is likely to rely on top-down processes such as heuristic cues. Compared with processing when in a negative mood, positive affect produces more creative thought, but is less focused on receiving environmental inputs.

Still other researchers have focused primarily on the information value that a mood state may have with respect to a given situation (Schwarz & Clore, 1983, 2007) and how that information value may impact information processing. This "mood-as-information" approach suggests that a positive mood signals that the situation is benign and not worthy of further attention. Therefore, people in happy moods tend to engage in less effortful or vigilant information processing. Negative moods, on the other hand, signal potential threat, and lead individuals in negative moods to engage in effortful and systematic processing of information. Although this work on the effect of emotion on processing has only begun to be applied to the driving situation (Hu, Xie, & Li, 2013; Megías, Maldonado, Cándido, & Catena, 2011; Taubman-Ben-Ari, 2012), it suggests that the processing style associated with a negative mood would result in better driving. Negative mood tends to result in greater scrutiny of environmental conditions, which should result in better driving. Positive mood, on the other hand, is characterized by less careful scrutiny, thus potentially resulting in more risky behaviors.

Prior work examining positive affect and driving has usually taken the form of questionnaires that assessed retrospective accounts of typical driving behavior and emotional experience (Rhodes & Pivik, 2011), thus being correlational in nature. Although much useful information can be obtained by the use of self-report questionnaires of driving attitudes and behavior, self-reports have their limitations. Research in the psychology of emotion has developed a methodology through which positive and negative moods can be temporarily induced (Tamir, Robinson, & Clore, 2002). The present research used an