



## A gender role socialization model of explicit and implicit biases in driving self-enhancement

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### ABSTRACT

We present a gender role socialization model of explicit and implicit biases in driving self-enhancement. The model proposes that men's higher levels of driving self-enhancement (relative to women) results from socialization experiences, such as those that idealize driving skill and risk taking as core aspects of male identity. This socialization process produces reasoned explicit (declarative or propositional) associations, but also implicit (automatic, non-conscious) associations between masculinity and driving self-enhancement, and these two processes are theorized to operate relatively independently. Structural Equation Modeling of a large sample of young male ( $n = 200$ ) and female ( $n = 200$ ) drivers supported the model, and indicated that (a) gender role identification fully mediated the effect of gender on driving self-enhancement and (b) that this effect occurred simultaneously but relatively independently in both explicit or reasoned belief structures and also in implicit non-conscious associations assessed using the Implicit Association Test. The origins of gender differences in traffic safety behaviour and the implications of our model for shifting conceptions of what it means to be a "real man" with regard to driver behaviour are discussed.

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### 1. Introduction

There is abundant evidence of gender differences in traffic injury rates. Men, and particularly young men, are involved in more crashes than young women. This is true both in New Zealand (Ministry of Transport, 2008), where the current research was conducted, and elsewhere in the world (e.g. Department of Infrastructure, Transport, Regional Development and Local Government, 2008; Hanna, Taylor, Sheppard, & Laflamme, 2006; Özkan & Lajunen, 2005). Even the presence of male, compared to female passengers seems to increase crash risk for young drivers (Williams, Ferguson, & McCartt, 2007). Numerous studies have found differences in men's and women's attitudes and behaviours that may help explain these patterns (e.g. Forsyth, 1992; Harré, Field, & Kirkwood, 1996; Shinar & Compton, 2004).

One attitude of interest is the belief that one is an above average driver. Various forms of driving self-enhancement bias have been found, and both men and women are prone to reporting themselves as above average on some dimensions (e.g. Dejoy, 1989; Horswill, Waylen, & Tofield, 2004; Sümer, Özkan, & Lajunen, 2006). A recent series of studies on young New Zealand drivers demonstrated that there are two forms of this bias; perceived superior driving ability (e.g. feeling more skilled than others) and perceived superior driving caution (e.g. considering oneself a safer driver than others; Harré, Foster, & O'Neill, 2005; Harré & Sibley, 2007; Sibley & Harré, 2009). These studies generally showed men to have higher levels of

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self-enhancement on the ability dimension than women. A sense that one is more skilled than average is problematic as it may lead to overconfidence (Deery, 1999) and risk taking (Clarke, Ward, & Truman, 2005; Harré, 2000). It has also been associated with crash-risk optimism. That is, drivers who think they are more able than others also tend to think they are at less risk of a crash than others (DeJoy, 1989; Harré, Foster, & O'Neill, 2005; Harré & Sibley, 2007). Furthermore, an inflated belief in one's driving ability and the crash-protection provided by that ability, may encourage drivers to ignore safety advertisements, which are seen as more likely to influence others, a phenomena known as the "third person effect" (Lewis, Watson, & Tay, 2007).

In addition to measuring and showing that these biases exist *explicitly*, that is, when drivers are asked to complete a questionnaire that requires them to consciously judge and rate themselves relative to others, the two most recent of these studies (Harré & Sibley, 2007; Sibley & Harré, 2009) showed this bias also existed *implicitly*. That is, these biases exist at the automatic level of processing, and are not merely a product of propositional reasoning or declarative belief structures and attitudes.

To test implicit attitudes, Harré and Sibley (2007) and Sibley and Harré (2009) used the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). The IAT is a computer-based reaction time task in which participants are required to match concepts as quickly as possible. The assumption behind the IAT is that the more quickly concepts can be matched, the more closely associated they are in the brain. One of the advantages of using implicit association measures is that unlike explicit measures, it is difficult to suggest they are influenced by socially desirable responding. In these studies, the test involved measuring how quickly participants could match words associated with being an able (e.g. skilled) driver with the self (relative to others), and conversely how quickly they could match words associated with not being an able (e.g. useless) driver with the self (relative to others). Harré and Sibley (2007) found that men had quicker reaction times than women when matching the self with words representing driving ability and skill. (Biases in driving caution were also measured but are not of interest here.) Sibley and Harré (2009) did not find the same gender difference on this implicit measure, however when taken alongside the general evidence for gender differences in driving attitudes discussed earlier, these results suggest that there is an association between perceived superior driving ability and being a man, but that it is not strongly present in all men (or absent in all women).

It is also important to note that the two studies above, consistent with other research using the IAT, found that explicit and implicit measures were only weakly correlated. This suggests that they reflect quite distinct processes. In the study by Harré and Sibley (2007), both explicit and implicit self-enhancement independently predicted crash-risk optimism (i.e. the belief that one is at less risk of a crash than others), and both explicit and implicit driving caution predicted driving violations. This suggests that both how people consciously think about themselves as a driver, and the automatic associations they make about their driving are potentially important, and also quite unique, contributors to risky driving choices. It would therefore seem prudent to study both processes simultaneously in order to develop a more detailed understanding of the psychological factors and processes underlying driver self-perceptions and more general risk taking motivations.

Because we know that there are strong gender differences in crash rates and driving attitudes (and there is evidence that these operate both explicitly and implicitly), the puzzle that remains is in determining the mechanisms through which these occur. In other words, driving behaviour and the attitudes that underlie it (like skill self-enhancement), appear to be "gendered", but it is unclear exactly how and why this is so. Part of the answer may lie in biological differences between men and women. For example, testosterone, a male steroid hormone, has been associated with sensation seeking (Aluja & Torrubia, 2004), aggression (Book & Quinsey, 2005) and venturesomeness (Coccaro, Beresford, Minar, Kaskow, & Geraciotti, 2007). However, these relationships are complex and appear to be influenced by socialization. For example, it has been suggested that aggression may only be related to testosterone insofar as aggression is a socially endorsed strategy for achieving dominance (Rowe, Maughan, Worthman, Costello, & Angold, 2004).

Social norms of masculinity and femininity are therefore likely to play a crucial role and several authors have suggested that the tendency for men to display riskier behaviours and attitudes than women is due to attributes associated with masculinity, such as the importance of being "skilled" and "fearless" and the association of these characteristics with high-risk driving maneuvers (Harré, 2000; Papadakis & Moore, 1991; Raithel, 2001). Unsurprisingly, men have been shown to demonstrate more "macho" driving attitudes than women (Harré et al., 1996) and more "macho" men have reported more driving aggression (Krahé & Fenske, 2002). This research, strongly suggests that there is a socialization mechanism at work, and that men who adopt risky driving attitudes may do so through *identification with being a man* and the package of characteristics that goes along with that.

One way to test for this is to see if observed gender differences in driving risk attitudes are explained (or mediated) by differences in gender role identification. If observed gender differences are mediated by gender role attitudes (that is, gender does not retain a direct effect on driving attitudes when controlling for gender role identification), then this would suggest that gender differences in this domain occur via gender socialization. There have however, been very few studies (three to our knowledge, as discussed below) that have directly examined gender role identity to see if identification with "being a man" predicts risky driving attitudes or behaviours.

The three studies that have been done have all used the Bem Sex Role Inventory. This treats masculinity and femininity as separate dimensions. Masculinity is "an instrumental orientation, a cognitive focus on 'getting the job done'; and femininity has been associated with an expressive orientation, an affective concern for the welfare of others" (Bem, 1974, p. 156). An individual who is high on masculinity and low on femininity is assumed to have a masculine identity, whereas the opposite implies a feminine identity. Individuals high on both dimensions are assumed to be androgynous. It is important to note that

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