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Accident Analysis and Prevention 40 (2008) 840–842

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Short communication

## Masculinity causes speeding in young men

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Received 2 August 2007; received in revised form 23 September 2007; accepted 26 September 2007

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### Abstract

The goal of this study was to examine if masculinity is causally responsible for speeding in young men. Participants (83 males) were randomly assigned to a masculine, feminine, or neutral priming condition. Priming consisted in active listening to either masculine, feminine, or neutral words coming from the car radio while driving in a high-end driving simulator. Results showed that when the concept of masculinity was activated by priming, participants' driving speed increased significantly from the beginning to the end of the driving simulation as compared to the neutral and the feminine condition. Results are discussed with respect to real life health implications.

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*Keywords:* Speeding; Gender; Masculinity

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### 1. Introduction

Unsafe driving is a risk for the health and lives of many people worldwide. In the United States, for example, 43,947 people died in 2004 in a motor vehicle accident (Minino et al., 2006). In Germany, in 2004, 6087 people died in vehicle accidents, 4438 (or 73%) of these were men (Statistisches Bundesamt, 2006). Next to drunk driving speeding is an important predictor of accident involvement (Cooper, 1997). Speeding is not only responsible for many casualties on the road but is also linked to crashes resulting in handicaps, injuries, and vehicle damage, all resulting in increased insurance and above all health costs (for a review see Aarts and van Schagen, 2006). To explain excessive speed on the road and to derive preventive measures against speeding, the literature has focused on factors such as personality traits like sensation seeking (Jonah, 1997) or thrill seeking (Begg and Langley, 2001; Harre, 2000; McKenna and Horswill, 2006), on norms, attitudes, and habits with regard to speeding behavior (De Pelsmacker and Janssens, 2007), on affective beliefs (Lawton et al., 2007) as well as on situational factors such as legal constraints or mood (McKenna and Horswill, 2006), time pressure or inattention (Gabany et al., 1997), to give just a few examples.

There are striking gender and age differences in speeding behavior. The majority of reckless drivers are young men (Begg and Langley, 2001; Harre et al., 2000). One factor that has repeatedly but rather anecdotally than empirically been related to speeding is masculinity or the identification with the traditional male gender role. For instance, a recent campaign in Australia aiming at reducing road deaths links manhood or rather the lack thereof to speeding behavior ("Australian drivers", 2007).

The fact that masculinity is hazardous to a person's health in a more general sense has been well documented. Men's lower life expectancy in all industrial countries cannot be reduced to biological factors but is primarily explained by their more risky lifestyle (Waldron, 1997). It has been suggested that men strive to express their masculinity through risky behavior such as, for instance, reckless driving (Courtenay, 2000) and a longitudinal study revealed that masculinity was associated with higher mortality (Lippa et al., 2000). With regard to speeding, there is evidence that men are more prone to speeding than women (Harre, 2000; Harre et al., 2005), that the identification with the male gender role is linked to driving behavior (Ozkan and Lajunen, 2006), and that the identification with a "macho" personality is related to aggressive driving behavior (Krahe and Fenske, 2002). However, these studies provide only correlational evidence which can never inform about causal relations. To test whether masculinity is responsible for increased driving speed an experimental approach is needed. The main goal of our study

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was to assess whether priming men with attributes of the traditional male gender role influences their driving behavior. The hypothesis was that male-primed individuals would drive faster than the neutral- or the feminine-primed individuals.

## 2. Method

Participants were 83 male students ( $M$  age = 23, range: 20–27) majoring in different domains. They all possessed a driver's license, 84% since more than 2 years (legal driving age: 18). Sixty-one percent of the participants indicated they use the car less frequently than every other day and 22% possessed a car of their own. We specifically targeted a participant population relatively prone to speeding, young men.

We manipulated masculinity without the participants noticing it by a priming procedure (Bargh et al., 1996) and measured their driving behavior in a driving simulator. All participants drove the same course, but were randomly assigned to one of three experimental conditions: masculine, feminine, or neutral. While driving, participants were exposed to words from the car radio and were instructed to flash the headlights each time the target word “timetable” was heard (five times during the 8 min). Due to the fact that priming took place during driving, we expected it not to take effect at the beginning of the simulation (the first 2 min). The cover story said that we were testing the effect of distraction on driving.

The masculine priming consisted of 56 male-typical words (e.g., father, suit, strong), the feminine of 56 female-typical words (e.g., mother, lipstick, empathic), and the neutral of 56 (gender-) neutral words (e.g., blind, rent, private). In each condition an additional 59 (gender-) neutral words (same for all three conditions) were interspersed. Words were presented every 3 s. The female-typical and male-typical words differed significantly in terms of female and male typicality as evaluated by four independent raters on a scale of  $-3$  (very feminine),  $0$  (neutral with respect to femininity and masculinity), and  $+3$  (very masculine): female-typical words ( $M = -2.05$ ), neutral words ( $M = 0.02$ ), male-typical words ( $M = 2.80$ ),  $F(2,165) = 1136.00$ ,  $p = .0001$ . However, there was no significant difference between the three conditions in terms of valence of the words (evaluated by four different raters on a scale of  $3 =$  very negative,  $0 =$  neutral, and  $+3 =$  very positive),  $F(2,165) = 0.01$ . Also, there was no significant difference between the three conditions in word length,  $F(2,165) = 0.46$ , and word frequency,  $F(2,165) = 0.83$ .

The driving simulator was a “Ford Focus” (Dr Reiner Foerst GmbH) with wide screen projection covering 120 degree of the visual field. The 8 min driving course was characterized by different speed zones (80, 70 and 50 km/h) and oncoming traffic. Speed was registered every second. In a training phase (on a different course) participants familiarized themselves with the driving simulator. It lasted between 3 and 5 min with the goal to ensure that participants begin the main experiment equally well prepared. After the training phase we measured how competent they felt about handling the driving simulator on a scale from 1 (very insecure) to 6 (very secure) ( $M = 4.23$ ,  $S.D. = 0.78$ ). As expected, participants in the three conditions did not dif-

fer in this competence,  $F(2,79) = 0.01$ ,  $p = .99$  ( $M$  masculine condition = 4.24,  $M$  feminine condition = 4.24,  $M$  neutral condition = 4.21). Moreover, as indicated by the participants after the simulation, their liking of the simulation was unaffected by the condition they were in,  $F(2,80) = 0.56$ ,  $p = .57$  ( $M$  masculine condition = 1.32,  $M$  feminine condition = 1.12,  $M$  neutral condition = 1.45).

## 3. Results

Since the priming occurred during driving, we did not expect to find any difference in speed among the three conditions during the first 2 min of the drive, which is exactly what we found,  $F(2,80) = 0.60$ ,  $p = .55$ . However, it was hypothesized that the priming would take effect at the end of the simulation. We therefore compared the average driving speed of the first 2 min to the last 2 min. Because participants differed in how fast they drove, they were not necessarily all in the same speed zones (50, 70 and 80 km/h zones) during the first and last 2 min of the simulation. To adjust for this, we calculated for each participant the average driving speed per speed zone for the first and for the last 2 min separately. We then subtracted the average driving speed of the first 2 min from the one of the last 2 min for each speed zone separately and finally weighted those differences by the number of registrations within each speed zone. This is how we obtained an average driving speed difference between the first and the last 2 min that was completely independent of the speed zones.

According to expectation, we found a significantly more pronounced increase in driving speed for participants in the masculine priming condition as compared to the neutral and to the feminine conditions,  $F(2,80) = 4.36$ ,  $p = .016$  ( $M$  male = 7.08 km/h,  $M$  female = 3.19 km/h,  $M$  neutral = 3.87 km/h, Fig. 1). The difference between the masculine and neutral condition was significant, contrast  $t = 2.92$ ,  $p = 0.0025$ , effect size  $d = 0.65$ . The difference between the feminine and the neutral condition was not significant. Probing for suspicion revealed that none of the participants was aware of the relation between the priming and driving behavior.

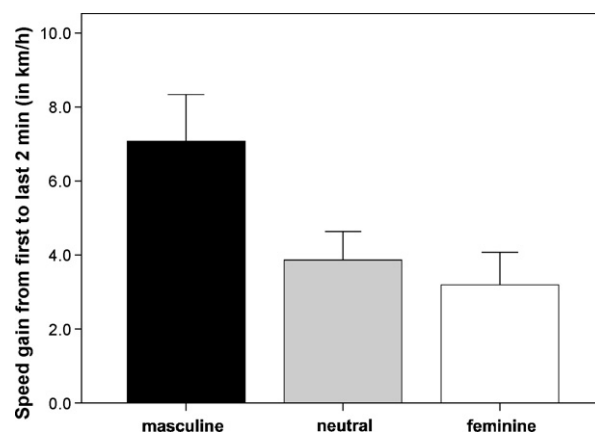


Fig. 1. Average speed increase (in km/h) from first to last 2 min of the driving course as a function of priming conditions, error bars show 1 standard error.

#### 4. Discussion

This study shows for the first time that unconscious priming of masculinity evokes faster driving which is a serious health hazard. The study also supports the idea that driving performance is affected by unconscious processes. The goal of this study was to show that masculinity is responsible for driving fast and it effectively demonstrates that the exposure to stimuli activating the concept of masculinity elicits faster driving in young men. The activation of femininity did not reduce driving speed.

All the participants were students and thus had a rather privileged economic and, above all, educational status. According to the literature, men with lower socioeconomic background should be even more prone to engage in risky behavior in order to demonstrate their masculinity (Courtenay, 2000).

Following a connectivism approach, priming one specific concept (e.g., masculinity) activates related concepts (e.g., risk behavior) which become easily accessible so that these concepts are able to affect our behavior (e.g., speeding) even without us noticing it (Kunda and Thagard, 1996). Our findings are thus in accordance with previous literature suggesting that the identification with or the activation of the traditional male gender role is a threat to a person's health (Courtenay, 2000; Lippa et al., 2000) and more specifically to driving fast. Note that our study is the first to demonstrate a *causal* link between masculinity and speeding.

One limitation of the present work is that we only tested men and not women. Existing research shows, for women, a positive relation between femininity and lower aggressive driving scores on a self-report measure and no relation between masculinity and aggressive driving (Krahe, 2005). Future research could thus test whether priming of femininity would decrease driving speed in women; it did not in the present study with men as participants.

Based on our results, it seems important that prevention of speeding takes into account factors related to masculinity. In real life settings a sense of masculinity could be primed by being exposed to traditional views about the male gender role. Prevention of speeding should focus on uncoupling masculinity and driving fast. As an example, advertisements of race drivers like Michael Schumacher making a point of driving slowly in everyday road traffic could accomplish such a goal.

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