

**How males and females define speeding and how they'd feel getting caught for it:  
Some implications for anti-speeding message development**

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**Abstract**

Speeding represents a major contributor to road trauma, increasing crash frequency and severity. Anti-speeding campaigns represent a key strategy aimed at discouraging individuals from speeding. This paper investigated salient beliefs underpinning male and female drivers' travel speed behaviour, with the view to use such insight to, ultimately, inform the content of targeted anti-speeding messages.

A survey of N = 751 (579 males, 16-79 years) drivers assessed what they regarded as speeding in 60km/hr and 100km/hr zones and their beliefs about how they would respond to receiving a speeding infringement. Participants responded to scales which extended up to 20km/hr above each respective speed limit, the lowest speed that they considered was speeding and the speed at which they would be willing to drive and still feel in control. For analyses, to enable greater scrutiny of potential gender differences regarding the speeds identified, participants' responses to these items were categorised into 5km/hr increments and chi-square analyses conducted. For their responses to (beliefs about) the possibility of being caught speeding, drivers were asked how applicable various beliefs were to them (e.g., feeling unlucky). These beliefs were analysed via MANOVA.

The results revealed that there was considerable variability in the speeds identified, thus supporting the value of categorising speeds. Within the 100km/hr zone, based on the categories, a significant difference was found regarding the speed that males would be willing to drive (and still feel in control) relative to females. Specifically, the greatest proportion of males (30.4%) identified speeds within the 106-110km/hr category whereas the greatest proportion of females (38.1%) identified a lower speed, within the 101-105km/hr category, as the speed they would be willing to drive. No other significant differences emerged, however, either in relation to the definition of speeding reported for 100km/hr zones (i.e., males and females tended to identify a similar speed as indicative of speeding) nor for these same items as assessed in relation to the 60km/hr zones.

For their responses to the possibility of being caught, males were significantly more likely than females to report that, if caught, a likely response they would have would be to think that they had still been driving safely. In contrast, females were significantly more likely than males to report thinking that their speeding had been unsafe and that they should not have been speeding. Females were also significantly more likely to report feeling embarrassed to tell important others about having received a speeding infringement than males.

The findings are discussed in terms of their implications for developing well-targeted advertising messages aimed at discouraging drivers' from speeding.

**Keywords:** speeding, anti-speeding advertising; message content; gender, road safety

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## 1.0 Introduction

Speeding is the most frequent, widespread traffic violation among drivers (Aberg et al., 1997; Conner et al., 2007). Although commonly engaged in, speeding is a major contributing factor to both crash severity and frequency (Aarts & van Schagen, 2006; Conner et al., 2007; Fildes & Lee, 1993; Kloeden et al., 2007). Much literature has amassed in the attempt to understand the factors which underpin speeding behaviour (Elliott, 2001). Broadly, these factors relate to personal, social, legal, and situational characteristics (Fleiter & Watson, 2006). While it is beyond the current paper's scope to provide a detailed review of all of the factors which may contribute to speeding, a key personal or driver-related characteristic which has been associated with greater speeding behaviour is a driver's gender, in particular, being male. Not only are males more likely to report engaging in risky driving behaviour including speeding (Fleiter et al., 2006; Harré et al., 1996) and have been observed to engage in greater speeding behaviour (Wasielewski, 1984), they are also, relative to females, more likely to be involved in road trauma (ATSB, 2007). Males have also been shown to score higher on a perceptual biases that would likely increase their tendency of engaging in risky behaviours (Harré et al., 2005). For instance, in a study of young drivers aged 16 to 29 years, males were shown to regard themselves as "better" and more skilful drivers than their peers compared with females (Harré et al., 2005). Even when controlling for exposure in terms of mileage driven, recent research has indicated that gender differences in driving behaviour and experiences (i.e., males' greater involvement in crashes and committing of driving violations, as well as their receipt of more traffic fines, than females) still remain (González-Iglesias et al., 2012). This gender effect was found in a self-report survey of male and female drivers aged 20 to 79 years (in the sample, the average age for males was  $40.14 \pm 12.39$  years and, for females,  $39.06 \pm 10.77$  years) (González-Iglesias et al., 2012).

Furthermore, this gender effect pervades even one's responses to road safety messages with males found to report being less influenced by traditional, fear-based messages than females (Goldenbeld et al., 2008; Lewis et al., 2007). Lewis et al. (2007) found that, in a sample of drivers aged between 17 to 60+ years, males' responses to fear-evoking anti-speeding and anti-drink driving messages were consistent with a third-person effect (see Davison, 1983). Specifically, males reported the messages as having greater influence on other drivers in general than on themselves while females reported the opposite effect (i.e., the messages would have greater influence on themselves than on others). This gender difference in third person perceptions also corresponded with the extent of intentional change reported (where intentional change represented message acceptance) with males reporting significantly less intentional change in response to the messages than females. Goldenbeld, Twisk, and Houwing (2008) also found a gender effect in response to fear-based road safety messages, in a sample of drivers (mean age of 51 years). Anti-speeding campaigns represent a key strategy, implemented with other strategies including enforcement, aimed at discouraging speeding. One particular concern is that the evidence suggests that males are not being influenced by such messages relative to females. Moreover, many of these messages were designed in accordance with the aim of persuading males (often young males) to adopt safer attitudes and engage in less risky behaviours (Tay, 2002; Tay & Ozanne, 2002). Therefore, a better understanding of the factors which underpin these gender differences is needed. A greater understanding of these factors provides the opportunity for road safety researchers and practitioners to devise and implement more targeted countermeasures to reduce speeding (Elliott et al., 2007). As noted previously, a substantial body of literature has been amassed in the attempt to understand factors that underpin speeding behaviour. The current paper seeks to further understand two aspects which are fundamental aspects to address and incorporate within anti-speeding messages: (i) the manner in which speeding is defined (and ultimately depicted within message) or, in other words, the speed at which drivers regard as constituting speeding and report being willing to drive at and still feel in control; and (ii) how an individual would respond (has responded) to receiving a speeding infringement.

In relation to the definition of speeding, this aspect is particularly important to explore given that the depiction within a message of a credible, believable, and relevant speed as speeding is likely to contribute to individuals' overall perceptions of the extent to which a message is personally relevant. In instances where high range speeding is depicted it is more likely to be considered an extreme

behaviour, not often engaged in by the majority of drivers, and even less so when that speeding behaviour is depicted in conjunction with other risky behaviours, such as showing off to friends/passengers. In such instances, individuals may regard the message as likely to be of more relevance to, and have greater influence on, some other third person/s (Lewis et al., 2007; see also Harrison & Senserrick, 2000). Evidence suggests that while drivers appear to be cognisant of the technical (and legal) definition of speeding as driving at any speed above the posted limit, they also ascribe to a personal definition of driving speeds which are acceptable to and for them (see Fleiter, et al, 2007). It is thus important to explore such personal definitions of speeding further.

For the responses to being detected, the threat of receiving a speeding infringement represents a key deterrent strategy within current speed enforcement approaches. Given the important intended deterrent function of infringements, there is value in understanding subtleties surrounding how drivers respond to the receipt of such penalties. This understanding could be used to identify the various potentially negative beliefs that receiving an infringement may evoke (as well as potentially challenge any more positive associations individuals may hold). Thus, by furthering our understanding of how males and females define speeding as well as their beliefs about receiving a speeding infringement, this study will provide insight regarding some key aspects of anti-speeding message content.

It is predicted that males will report higher levels of speed as being representative of speeding, and the speed at which they are willing to drive, than females. For drivers' beliefs to receiving a speeding infringement, while the hypotheses are more exploratory, it is anticipated that males will, perceive fewer of the beliefs as disadvantageous than females and, of those beliefs that they regard as disadvantageous, they will rate them as significantly less relevant/of concern to them than females.

## 2.0 Method

### 2.1 Participants

All participants held a current driver's licence and were residents of Victoria, Australia. The online survey was distributed to existing databases, held by the Transport Accident Commission (TAC), and which comprised community members and stakeholders. Based on a total of 3,728 individuals who opened the email about the survey (and thus the researchers can be confident were individuals who had been aware of the study), 20% ( $n = 751$ ) went on to complete the survey. Of those 751 participants, 579 were male (77.1%)<sup>1</sup> drivers aged between 16-79 years ( $M = 44.83$  years,  $SD = 13.81$  years). The majority of participants reported not having received a speeding infringement (70.9%) and not having been involved in a crash (87.7%) in the previous 12 months. Table 1 provides further details of the sample. All participants were eligible for a ticket to win 1 of 10 \$AU100 shopping vouchers.

**Table 1**

*Socio-demographic characteristics of the study's sample*

Characteristic	<i>n</i> (%)	Characteristic	<i>n</i> (%)
Gender <sup>a</sup> and Age (years)		Receipt of speeding infringements (Yes/No)	
579 males/169 females (77.1/22.5)		In previous 12 months <sup>c</sup>	152/594 (20.2/70.9)
$M_{age} = 44.83$ , $SD = 13.81$ , $Range = 16$ to $79$		In previous 2/3 years <sup>d</sup>	293/445 (39.0/59.3)
Licence type (motorcycle licence) <sup>b</sup>		Crash involvement (at fault or not) (Yes/No)	
Learners permit	10 (1.5)	In previous 12 months <sup>e</sup>	77/659 (10.3/87.7)
Probationary 1	5 (0.7)	In previous 2/3 years <sup>f</sup>	104/626 (13.8/83.4)
Probationary 2	23 (3.1)		
Full	711 (94.7)		

Note: <sup>a</sup> 3 participants did not indicate their gender. <sup>b</sup> Two participants did not specify a licence type. <sup>c</sup> 5 participants did not provide a response. <sup>d</sup> 13 participants did not provide a response. <sup>e</sup> 15 participants did not provide a response. <sup>f</sup> 21 participants did not provide a response.

### 2.2 Materials and procedure

<sup>1</sup> Three participants did not indicate their gender.

**2.2.1 Survey.** Initially, participants provided their responses to a range of socio-demographic items, including their definition of speeding. Specifically, participants were asked to indicate on two scales, for 60km/hr and 100km/hr (extending up to the final response option of 20km/hr or more above each respective speed limit), (1) “*the lowest speed above the [particular speed zone] that you would regard as speeding*” and, (2) the speed at which they “*...would be willing to drive and feel in full control of your vehicle*” (see Figure 1, for an example). These items were purpose-designed for the current study.

*“In a 60km/hr zone, what would you regard as speeding (please select the lowest speed above the 60km/hr limit that you would regard as speeding):”*

At or below 60km/hr	61 km/hr	62 km/hr	63 km/hr	64 km/hr	65 km/hr	66 km/hr	67 km/hr	68 km/hr	69 km/hr	70 km/hr	71 km/hr	72 km/hr	73 km/hr	74 km/hr	75 km/hr	76 km/hr	77 km/hr	78 km/hr	79 km/hr	80 km/hr	More than 80 km/hr
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Figure 1. An example of the definition of speeding measure for 60km/hr zones

Although there are various speed zones, selection of these two zones was considered a means of providing representation of an urban as well as an open-road/ highway speed limit while also not substantially lengthening the time taken for participation. Also of note, the question stem preceding these questions, (i.e., “*We know that some drivers do not always stick to the speed limit. We are interested to know what you would regard as speeding when driving in some different speed zones*”) was designed intentionally to avoid judgement and potential accusation and, ultimately, encourage more open and honest responses. Subsequent sections of the survey assessed various beliefs relating to speeding and, of relevance to this paper, were the items which examined the beliefs that individuals may experience if they were to be caught speeding (or had experienced if they had been caught speeding) and received an infringement. Specifically, on a Likert scale from 1 [*Definitely does not apply to me*] to 5 [*Definitely applies to me*], participants reported how applicable each of the beliefs (full list of items provided in the Results section in Table 3). Participants also reported the extent to which they would feel embarrassed telling people who matter to them about receiving a speeding ticket on a scale of 1 [*Not at all embarrassed*] to 5 [*Extremely embarrassed*]. All of these belief-based items were also purpose-designed for the current study.

### 3.0 Results

#### 3.1 Defining speeding: What speed constitutes speeding?

Table 2 reveals that there was considerable variability in the responses provided (speeds identified). The second last column in Table 2 shows that, for males, their responses often ranged the entire response set (i.e., At or below 60 to 81km/hr, At or below 100 to 121km/hr) whereas this tendency seemed less likely to occur with the responses provided by females. Thus, acknowledging this variability and in order to provide greater scrutiny of the data in terms of exactly where the differences may have been between the speeds identified by males and females, the response scales were further categorised into 5km/hr increments so that each scale had 6 categories (i.e., categories 1 and 6 comprised the end response options that were not ordinal in nature given that they encompassed an open-ended response description of “*at or below 60km/hr*” or “*more than 80km/hr*”). These 5km/hr speed increments acknowledge the importance of small changes in travel speed in terms of the crash frequency and severity. The speed categories are shown in the last column of Table 2.

**Table 2**

*Range of responses for the definition of speeding and the speed willing to drive and feel in control*

Item	Gender	n	Range of km/hr speeds identified (min to max)	Speed (km/hr) categories created
In a 60km/hr zone, what would you regard as speeding (please select the lowest speed above the	Male	577	At or below 60 – 80	Category 1 = At or below 60 Category 2 =

60km/hr limit that you would regard as speeding)	Female	169	At or below 60 -74	61-65 Category 3 = 66-70
In a 60km/hr zone, at what speed would you be willing to drive and feel in full control of your vehicle	Male	576	At or below 60 – More than 80	Category 4 = 71-75
	Female	168	At or below 60 - 80	Category 5 = 76-80 Category 6 = More than 80
In a 100km/hr zone, what would you regard as speeding (please select the lowest speed above the 100km/hr limit that you would regard as speeding)	Male	579	At or below 100 - 120	Category 1 = At or below 100
	Female	168	At or below 100 - 119	Category 2 = 101-105
In a 100km/hr zone, at what speed would you be willing to drive and feel in full control of your vehicle	Male	579	At or below 100 – More than 120	Category 3 = 106-110
	Female	168	At or below 100 – More than 120	Category 4 = 111-115 Category 5 = 116-120 Category 6 = More than 120

**Association between responses to defining speeding provided for the two speed zones.** Based on the overall sample and the 6 speed categories assigned, the results revealed that responses individuals provided in relation to the speed regarded as speeding in both the 60km/hr and 100km/hr zones were strongly, positively, and significantly correlated,  $r_s(746) = .73, p < .001$ . This finding suggests that individuals respond in somewhat consistent ways in that a higher (or lower) level of speed regarded as constituting speeding in one speed zone is positively associated with a higher (or lower) level of speed regarded as speeding in another speed zone; although speed levels reported were relative to the particular speed zone being considered.

**Association between defining speeding and speed willing to drive (and feel in control).** Based on the overall sample and the 6 categories of speed assigned, the results revealed that the speed level that individuals reported as constituting speeding and the speed at which they reported being willing to drive and still feel in control, were also positively and significantly correlated in both the 60km/hr ( $r_s(747) = .39, p < .001$ ) and 100km/hr zones ( $r_s(747) = .47, p < .001$ ). Such findings reflect a correspondence between one's speeding behaviour and related perceptions (i.e., report a willingness to drive at a higher speed and also report a higher level of speed as constituting speeding).

**Gender differences: 60km/hr zones.** Table 3 shows that no significant gender differences emerged in relation to the speed drivers identified as speeding nor the speed they were willing to drive and still feel in control in 60km/hr zones. Overall, the proportions presented in Table 3 reveal that the greatest proportion of both male and female drivers identified speeds within the second speed category of 61-65km/hr as speeding in a 60km/hr zone (i.e., 70.9% of males and 76.9% of females). In addition, very few male and females identified speeds from 71km/hr and above as speeding (i.e., <5 respondents in each category), with no respondents reporting more than 80km/hr as speeding. In terms of the speed willing to drive and still feel in control, compared with the definition of speeding in 60km/hr, there appeared to be more variability across the categories for the former item. While the highest proportion of respondents identified 61-65km/hr as the speed they were willing to drive, which is similar to the definition assigned to speeding in 60km/hr zones, the proportions of males (41.6%) and females (45.8%) are relatively lower than the proportions identified for the definition of speeding item. In addition, there were respondents, particularly males, who reported being willing to drive and still feel in control at speeds from 71km/hr and over (i.e., approximately 19.7% of males).

**Table 3**

*Chi-square results<sup>2</sup>: Male and female responses per speed category for 60km/hr and 100km/hr zones*

Items	Speed Category <sup>a</sup>	Gender % (n)		Significance level <sup>b</sup>
		Male	Female	
<b>In a 60km/hr zone, what would you regard as speeding...</b>				
	1	15.8 (91)	14.8 (25)	$\chi^2 (df2)=3.93,$ $p = .140$
	2	70.9 (409)	76.9 (130)	
	3	12.3 (71)	7.1 (12)	
	4†	0.5 (3)	1.2 (2)	
	5†	0.5 (3)	0	
	6‡	-	-	
	Total	(577)	(169)	
<b>In a 60km/hr zone, at what speed would you be willing to drive...</b>				
	1	38.0 (220)	34.5 (58)	$\chi^2 (df3)=1.56,$ $p = .668$
	2	41.6 (241)	45.8 (77)	
	3	15.7 (91)	16.7 (28)	
	4	2.1 (12)	1.8 (3)	
	5†	1.9 (11)	1.2 (2)	
	6†	0.7 (4)	0	
	Total	(579)	(168)	
<b>In a 100km/hr zone, what would you regard as speeding...</b>				
	1	14.2 (82)	14.9 (25)	$\chi^2 (df5)=8.49,$ $p = .075$
	2	52.1 (300)	62.5 (105)	
	3	26.4 (152)	16.1 (27)	
	4	5.2 (30)	4.8 (8)	
	5	2.1 (12)	1.8 (3)	
	6‡	-	-	
	Total	(576)	(168)	
<b>In a 100km/hr zone, at what speed would you be willing to drive...</b>				
	1	25.7 (149)	29.8 (50)	$\chi^2 (df5)=14.37,$ $p = .013$
	2	<b>27.3 (158)</b>	<b>38.1 (64)</b>	
	3	<b>30.4 (176)</b>	<b>20.8 (35)</b>	
	4	4.1 (24)	4.8 (8)	
	5	8.5 (49)	4.8 (8)	
	6	4.0 (23)	1.8 (3)	
	Total	(579)	(168)	

<sup>a</sup> Speed categories (in 60/100km/hr zones): 1 = At or below 60/100, 2 = 61-65/101-105, 3 = 66-70/106-110, 4 = 71-75/111-115, 5 = 76-80/116-120, 6 = More than 80/120. <sup>b</sup>The significant results and adjusted standardised residuals are bolded. † denotes speed categories excluded from analyses due to >20% of all cells having expected frequencies <5. ‡ denotes speed categories which SPSS did not generate output as zero cell counts.

**Gender differences: 100km/hr zones.** Table 3 shows that there was no significant gender difference in relation to the speed which drivers identified as speeding in 100km/hr zones. Overall, the proportions presented in Table 3 reveal that the 92.7% of the male respondents identified speeds in one of the first three categories (i.e., “at or below 100”, 101-105km/hr, 106-110km/hr) as the speed they regarded as speeding. Similarly, 93.5% of all female respondents identified speeds in these same three categories as speeding. A significant difference emerged, however, in relation to the speed male and females were willing to drive and still feel in control. Specifically, inspection of the proportion of male and females in each speed category shown in Table 3 reveal that the greatest proportion of males (30.4%) were more likely to identify speeds within the third speed category, 106-110km/hr as the

<sup>2</sup> Chi-square analyses were conducted to check for differences between younger ( $\leq 30$  years) and older (30+ years) drivers on each of the four speed-related measures. Only one significant difference was found in relation to the speed a driver was willing to drive and still feel in control in 100km/hr zones measure,  $\chi^2(df5)=16.47, p=.006$ . The results indicated that even though absolute numbers were low, proportionally, younger drivers were more likely to identify speeds in the higher speed categories (i.e., Category 4 = 111-115km/hr and Category 6 = More than 20km/hr over) as the speed they were willing to drive and still feel in control whereas, proportionally, more older drivers identified speeds within a lower speed category, Category 3 (106-110km/hr), as they speed they were willing to drive. This finding aligns with previous research (e.g., Fleiter & Watson, 2006).

speed they were willing to drive (and still feel in control) whereas, for females, the greatest proportion of respondents were more likely to identify lower speeds which feel within the second speed category, 101-105km/hr. Of note, approximately 25% of males and 30% of females identified “at or below 100km/hr” as the speed that they would be willing to drive and still feel in control. Of those respondents who did identify speeds in the higher speed categories (Category 4 onwards), Table 3 reveals that those respondents tended to be male with 16.6% of males identifying speeds 111km/hr and over whereas only approximately 9.5% of females’ responses fell within these categories.

### 3.2 Beliefs regarding being detected and apprehended for speeding

For responses to (beliefs about) being detected for and receiving a speeding infringement, a MANOVA was conducted on the 8 beliefs examined. Bonferroni adjustments were used to minimise the family wise error rate and the chance of type one errors, thus, the results were interpreted with an alpha rate of .006. An overall significant multivariate effect was found,  $\lambda = .96$ ,  $F(8,706) = 5.99$ ,  $p < .001$ ,  $\eta_p^2 = .41$ . As shown in Table 4, males were significantly more likely than females to report believing that they had still been driving safely. In contrast, females were significantly more likely than males to report believing that they should not have been speeding and that their speeding had been unsafe. In addition, males were significantly less likely than females to report that they would feel embarrassed to tell others about having received a speeding infringement ( $M_{\text{males}} = 2.88$ ,  $SD = 1.31$ ;  $M_{\text{females}} = 3.25$ ,  $SD = 1.35$ ),  $t(733) = -3.20$ ,  $p = .001$ .

**Table 4**

*MANOVA results for responses to receiving a speeding infringement*

Beliefs <sup>a</sup>	Males M (SD)	Females M (SD)	p value <sup>b</sup>
1. I was unlucky	2.90 (1.26)	2.81 (1.32)	$p = .454$
2. I've done it many times before and didn't get caught	2.44 (1.27)	2.17 (1.26)	$p = .018$
3. I was still driving safely	3.21 (1.25)	2.90 (1.37)	$p = .006^*$
4. I should not have been speeding	3.80 (1.18)	4.10 (1.15)	$p = .005^*$
5. My speeding was antisocial	2.66 (1.30)	2.79 (1.23)	$p = .273$
6. My speeding was unsafe	2.77 (1.32)	3.28 (1.37)	$p < .001^*$
7. My speeding doesn't make me a bad driver	3.03 (1.26)	2.99 (1.21)	$p = .699$
8. I should have taken a different route where speed cameras were less likely	2.11 (1.13)	1.93 (1.07)	$p = .074$

<sup>a</sup> A 1-5 scale with higher scores denoting more agreement that a belief was applicable. <sup>b</sup>  $p \leq .006$ .

## 4.0 Discussion

This study examined gender differences in drivers’ perceptions of two key issues relating to speeding with such issues representing important aspects of the potential content of anti-speeding messages. These issues related to personal definitions of speeding (Fleiter et al., 2007) as well as the beliefs that receiving a speeding infringement likely evokes (or has evoked). The definition of speeding is important to the extent that depicting a specific speed as speeding which is considered credible and relevant represents a key component of an anti-speeding message. A message depicting, for instance, a main character engaging in high range speeding in conjunction with one or more other reckless driving behaviours, is unlikely to be perceived as relevant and credible by the majority of the drivers who would consider themselves unlikely to engage in such depicted behaviours. For speeding infringements and the responses they evoke, given the important deterrent function that infringements are intended to have within current speed enforcement approaches, it is important to garner evidence relating to how individuals actually respond when receiving them. To the extent that males are more

likely to engage in risky driving behaviours and are over-represented in road trauma, relative to females, it is important to examine males' and females' responses to this issue. Such differences provide insight for of message content, in terms of ensuring those beliefs held by members of the target audience, such as male drivers, are appropriately identified and/or challenged.

### ***The association between defining speeding and the speed willing to drive and feel in control***

The strong, positive association between the items assessing the level of speed that represents speeding and the speed at which drivers would feel willing to drive and still feel in control does highlight evidence of consistency in drivers' perceptions and behaviour. This finding is in accordance with cognitive dissonance theory whereby drivers are avoiding any disconnect associated with their thoughts, beliefs, and perceptions not aligning with their behaviours (Festinger, 1957). Although it is acknowledged that the strong positive relationship found in the current study may be an artefact of the question order (and, in particular, the items' close proximity) in the survey, the findings may in part provide further insight into the existence of the speeding paradox (Fleiter & Watson, 2006). The speed paradox relates to drivers holding an attitude towards speeding that suggests they acknowledge that it is wrong and dangerous; however, speeding remains the most widespread traffic violation (Åberg et al., 1997). The findings suggests that, at lower range levels of speeding that drivers are willing to admit engaging in, they regard such speeds as also being the speed at which they consider able to remain in control. Perhaps where beliefs and behaviours are dissonant, it is instances where the level of speeding is not explicitly defined and therefore drivers may be basing their responses on more high range levels of speeding (and regarding such speeding more negatively). Their belief-based responses, therefore, appear dissonant when, in fact the speeding they may be admitting engaging in may not be of the same level that they are holding negative views of. The insight offered by the current findings suggests that there may be limited dissonance between beliefs and behaviours at lower levels of speeding where drivers are justifying that they are still in control of a vehicle. In this case, it would be important to challenge the perception that, as they themselves recognise, even when speeding at lower levels, it still constitutes speeding. In an applied manner, the findings provide further support for campaigns which raise awareness of low level speeding (e.g., 'driving just a few k's over') and the consequences of driving at such speeds as well as the potential value of challenging the perceived benefits associated with driving a few kilometres over the limit. The Transport Accident Commission's Wipe Off 5 campaign represents an example of such an approach which, in targeting lower range speeding, was likely to be relevant to the majority of the driving public (for further information, see <http://www.tacsafety.com.au/upload/TAC-Wipe-Off-5-Campaign.pdf>).

### ***Gender differences: Defining speeding and the speed willing to drive and feel in control***

Overall, the findings provided some support for the hypotheses with a greater proportion of males likely to report a willingness to travel at higher speeds (and still feel in control) in 100km/hr zones than females. Specifically, the greatest proportion of males were more likely to identify speeds within the third speed category, 106-110km/hr as the speed they were willing to drive (and still feel in control) whereas, for females, the greatest proportion of respondents were more likely to identify lower speeds which feel within the second speed category, 101-105km/hr. Of those respondents who did identify speeds in the higher speed categories (Category 4 onwards) as a speed they would be willing to travel, most tended to be male with 16.6% of males identifying speeds 111km/hr and over whereas only approximately 9.5% of females' responses fell within these categories. Such findings suggest that, if the intention was to target male drivers in a message, then a focus on speeds between 106-110km/hr would seem potentially relevant to most male drivers. That said however, it is important to note that no significant gender difference was found in relation to the defining speeding measure for 100km/zones, even though the overall correlation between these measures was found to be positive and significant based on the overall sample. Although not significant, inspection of the proportion of responses per speed category reveals that, once again, there may be value in focusing (in anti-speeding messages) on speeds between 100-110km/hr given that the majority of both male and female respondents identified speeds in the first three categories (i.e., "at or below 100", 101-105km/hr, 106-110km/hr) as the speed they regarded as speeding.



Inspection of the range of responses provided for these items (i.e., defining speeding and speed willing to drive at and feel in control) did reveal considerable variability, in particular, for males and in relation to the 100km/hr zones where their responses encompassed the entire range of possible response options. The existence of this variability highlights some of the challenges associated with identifying the most appropriate and relevant speed to depict within anti-speeding messages. The findings highlight the value of exploring drivers' self-reported speeds (and speeding behaviour) using measures similar to the purpose-designed measures used in the current study. These measures did reveal the variability in responses across the range of the scale. Furthermore, when the scale responses were collapsed into smaller, more specific categories of speed (and speeding), which in the current study were categories based on increments of 5km/hr each, the analyses were able to provide insight into what speeds may indeed be more relevant. This strength notwithstanding, the findings suggest that there is a need to be sensitive to such variability and future research should explore drivers' responses to these measures further. Potentially, one way of addressing this variability would be to ensure that the responses are derived from very specific demographic groups (in terms of gender and age, for instance) and that messages are subsequently devised for such specific demographic groups. This suggestion notwithstanding, the current results suggest that, proportionally, responses tend to fall within the first three speed categories (i.e., At or below 60 to 70km/hr and at or below 100 to 110km/hr) suggesting that if one intends to target a message at the majority of drivers, then devising messages in accordance with these lower levels of speed may seem a reasonable approach and one considered relevant (acknowledging, however, that such approaches would not be targeting and unlikely to be perceived as relevant by more high range speeding offenders).

#### ***Gender differences: Responses to receiving a speeding infringement***

For beliefs relating to the receipt of a speeding infringement, the hypotheses were more exploratory; however, it was anticipated that males would perceive fewer of the beliefs as disadvantageous and would rate such beliefs as significantly less relevant and/of concern to them, than females. Some support for these hypotheses was found. Overall, three significant gender differences were found: females were more likely than males to report a belief that their speeding had been unsafe and that they should not have been speeding; while males were more likely to significantly endorse the belief that their speeding had not been unsafe. Also, females were found to report feeling significantly more embarrassed at the prospect of telling important others that they had received a speeding infringement than males. Collectively, these findings suggest that males' responses to being caught for speeding are qualitatively different to females' responses; namely, males in this study appeared to be less likely to think or feel badly about their speeding, whereas females' responses highlighted more of a sense of feeling badly as well as embarrassed. This finding aligns with evidence provided by Fleiter et al. (2007) who compared the beliefs of individuals identifying themselves as regular or rare speeders, with the rare speeders more likely to feel badly about having sped. The current findings highlight that there may be potentially important differences in the manner in which males and females rationalise the receipt of a speeding infringement and which, in turn, could be addressed within future anti-speeding messages. For example, messages could challenge males' perceptions that speeding is acceptable. Given that males were less likely to see disadvantageous aspects of speeding, relative to females, recognising that they appear influenced by positive aspects of speeding, then potentially promoting positives in relation to *not* speeding may be of benefit. In other words, a message may highlight to males that they may still experience positive affect but, when they chose not to speed and received positive consequences for doing so (e.g., avoid a fine or receive approval from important others, such as girlfriends/spouses). In comparison, for females, it appears that messages which highlight the negative consequences of speeding may function to promote and/or reinforce beliefs that speeding is their responsibility and a behaviour that they would feel negatively about having engaged in. As suggestions for future anti-speeding message content, empirical evidence would need to confirm the persuasive effects of messages devised in accordance with these recommendations. However, previous evidence has found that females respond more favourably to traditional fear-based approaches than their male counterparts (Lewis et al., 2007) with such approaches often highlighting the negative, aversive consequences (crashes, death) that may result from speeding.

## 4.1 Concluding comments

Devising persuasive advertising countermeasures is a complex task. In the case of speeding, further complexity is added with the myriad of personal, social, legal, and situational factors underpinning the behaviour. When controlling for exposure, however, males are more likely to engage in speeding and be seriously injured or killed as a result. For messages to persuade, males' and females' responses to specific aspects of speeding behaviour and the consequences of speeding must be well understood.

## 5.0 References

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