



Personality predictors of speeding in young drivers: Anger vs. sensation seeking

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ABSTRACT

Among personality factors, sensation seeking and anger are the main predictors of voluntary risky behaviors. The studies that compare the impact of these factors show that anger is a greater predictor of voluntary risky driving behaviors than sensation seeking. However, these studies usually average data from several risky behaviors, and it is possible that analyzing data from individual risky behaviors would yield different results. Speeding in particular corresponds more closely to the definition of sensation seeking than anger, and should be influenced more strongly by sensation seeking than anger. To test this hypothesis we conducted two studies among French young drivers ($n_1 = 143$; $n_2 = 2038$), where we asked participants the speed they would drive at in a given situation or the likelihood they would commit speeding, and used scales specific to driving situations to measure anger and sensation seeking with. Both studies reveal that driving sensation seeking is a better predictor of speeding than driving anger or either of its factors. The implications of these results are discussed.

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1. Introduction

Crash risk incurred while driving is an important concern in modern societies, and represents a high cost in terms of public health and material damages. As a consequence, a lot of research investigate personal determinants of risky driving behavior (Rothengatter, 1997), such as attitudes, subjective norms, perceived behavioral control, past behavior (as in studies based on the theory of reasoned action (Ajzen & Fishbein, 1980), or the theory of planned behavior (Ajzen, 1991)), age, gender, driving experience, or personality traits, (Aberg, 1993; Blasco, 1994; Elliott, Armitage, & Baughan, 2005; Letirand & Delhomme, 2005). Concerning personality traits, current studies rely on constructs that are well documented in the literature, both general and driving-specific (Iversen & Rundmo, 2002; West & Hall, 1997). These studies either focus on one personality trait, or compare the relative impact of several personality traits on risky driving behaviors. The conclusions of such studies can be used to identify populations more likely to adopt risky road behaviors.

Indeed, in given situations, drivers can adopt driving behaviors that are not adapted to the situation, and that as such may increase the crash risk in the situation. This tendency toward risky ill-adapted behaviors varies depending on dimensions of their personality, such as sensation seeking orientation (Dahlen, Martin, Ragan, & Kuhlman, 2005; Dahlen & White, 2006), driving anger (Deffenbacher, 2008; Deffenbacher, Oetting, & Lynch, 1994; Delhomme & Villieux, 2005; Villieux & Delhomme, 2007), locus of control (Montag & Comrey, 1987; Warner, Özkán, & Lajunen, 2010), or impulsiveness (Burns & Wilde, 1995; Elander, West, & French, 1993). In particular, sensation seeking and anger have received a lot of attention, with several studies showing that high levels of either sensation seeking or anger increase the likelihood of several risky driving behaviors such as speeding, as well as the likelihood of crashes. The studies that compared the effects of sensation seeking and anger

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on risky driving behaviors (Dahlen, Martin, Ragan, & Kuhlman, 2005; Dahlen & White, 2006) reveal that the link between anger and risky driving behaviors is stronger than the link between sensation seeking and risky driving behaviors.

1.1. Sensation seeking

Sensation seeking is defined as the personality trait that refers to individual differences in optimal levels of arousal and stimulation (Zuckerman, 1994, 2007), or more precisely “the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences” (Zuckerman, Kolin, Price, & Zoob, 1964, p. 10). It is most often measured using the 40-item Sensation-Seeking Scale (SSS; Zuckerman, 1994; Zuckerman, Kolin, Price, & Zoob, 1964), which comprises four subscales: Thrill and Adventure Seeking, Experience Seeking, Disinhibition, and Boredom Susceptibility. Another commonly used scale is the 20-items Arnett Inventory of Sensation Seeking (AISS; Arnett, 1994).

Age and gender are among the strongest determinants of the motivation to seek sensations. More precisely, findings show a decline in sensation seeking with age (Giambra, Camp, & Grodsky, 1992): sensation seeking rises between ages 9 and 14, peaks around age 20 and declines steadily thereafter (Zuckerman, 1994). Concerning gender, men score higher than women (Zuckerman & Kuhlman, 2000).

A particular attention has also been paid to the impact of sensation seeking on risky driving behaviors. Indeed, higher sensation seekers are more likely than lower sensation seekers to adopt risky driving behaviors such as drunk driving, speeding, racing other drivers, passing in no-passing zones, and several other behaviors (Arnett, 1990; Arnett, Offer, & Fine, 1997; Burns & Wilde, 1995; Clément & Jonah, 1984; Furnham & Saïpe, 1993). Jonah (1997) reviewed 40 studies investigating risky driving behaviors and showed that sensation seeking accounted for 10–15% of the variance of risky road behaviors, and was also positively correlated to road crash involvement.

The tight relationship between sensation seeking, risky driving behavior and age led to a number of studies focusing on young drivers. Indeed, the high road crash and fatality rate for young drivers (they are twice as likely as older people to die in a fatal crash (ERSO, 2008; Jonah, 1986)) can be partially explained by their lack of driving experience (Borowsky, Oron-Gilad, & Parmet, 2009; Borowsky, Shinar, & Oron-Gilad, 2010), but also by their higher likelihood to seek sensations while driving (Arnett, 1990; Cestac, Paran, & Delhomme, 2011).

Most of the aforementioned studies on risky driving used Zuckerman's SSS (1994). However, SSS is a non domain specific scale. Given the greater validity of domain specific scales to assess personality traits when focusing on particular domains, Taubman, Mikulincer and Iram (1996; Yagil, 2001) developed a scale specific to the driving context, the Driving Related Sensation Seeking (DRSS). DRSS measures the sensation-seeking trait as defined by Zuckerman with a special focus on the “thrill and adventure seeking” subscale (1994; Zuckerman, Kolin, Price, & Zoob, 1964), expressed in the specific area of driving (adapted in French by Delhomme, 2002). As such, DRSS comprises items directly related to speeding and to other thrill-related driving behaviors. Like SSS, DRSS has been positively related to risky driving in general and speeding in particular, but is distinct from a mere intention to adopt risky behaviors (Delhomme, Verhac, & Martha, 2009; Yagil, 2001).

1.2. Anger

Anger as a personality trait is commonly defined as the tendency to experience anger and related states such as frustration and bitterness (Berkowitz, 1993; Clore, Ortony, Dienes, & Fujita, 1993; Russell & Fehr, 1994; Shaver, Schwartz, Kirson, & O'Connor, 1987), and is most commonly measured through anger scales such as the State-Trait Anger Expression Inventory-2 (Spielberger, 1999).

Moreover research on anger has distinguished trait anger, the general tendency to be angry, no matter the situation (Deffenbacher et al., 1996), and situational anger, the proneness to be angry in a given situation. Thus, several domain-specific anger conceptions have been developed, among which driving anger, defined as a situation-specific form of trait anger, related to driving (Deffenbacher, Oetting, & Lynch, 1994; Villieux & Delhomme, 2010). This concept is mainly measured through the 33-items Driving Anger Scale (DAS, Deffenbacher et al., 1994), consisting of six factors: “Illegal Driving”, “Traffic Obstructions”, “Hostile gestures”, “Progress impeded”, “Police Presence” and “Discourtesy”.

People high on driving anger – people who get angry more frequently and more strongly when driving – act more aggressive (Deffenbacher, 2008; Deffenbacher, Lynch, Filetti, Dahlen, & Oetting, 2003) and adopt more aggressive and risky behaviors (Deffenbacher, Huff, Lynch, Oetting, & Salvatore, 2000; Deffenbacher, Lynch, Oetting, & Yingling, 2001). In particular, they adopt more often behaviors listed in the Driving Anger Expression Inventory (DAX), and the Driving Survey (Deffenbacher, Deffenbacher, Lynch, & Richards, 2003; Deffenbacher, Lynch, Oetting, & Swaim, 2002; Deffenbacher, Lynch, et al., 2003), among which speeding. Moreover, people high on driving anger are also more often involved in minor road crashes (Deffenbacher, Huff, Lynch, Oetting, & Salvatore, 2000). The relationship between driving anger and risky behavior has been found in different countries such as France (Delhomme & Villieux, 2005; Villieux & Delhomme, 2007), the UK (Lajunen & Parker, 2001; Lajunen, Parker, & Stradling, 1998), or Norway (Iversen & Rundmo, 2002). This relationship can be interpreted in two ways. First, people with a “risky” driving style are more likely to be angered by situations that prevent them from adopting this style (such as the ones presented in items from the subfactors “Progress Impeded” or “Traffic obstructions”). Second, adopting risky driving behaviors can be a way to vent the anger felt toward driving situations. For example, concerning speeding, Björklund (2008) showed that the more frequently a driver committed speeding, the less this driver would be irritated by other drivers' reckless speeding.

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