



The bold and the fearless among us: Elevated psychopathic traits and levels of anxiety and fear are associated with specific aberrant driving behaviors



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ABSTRACT

In spite of the well-documented connection between personality traits like impulsivity, sensation seeking and fearlessness with aberrant driving behaviors, scarce research exists to examine the association between risky and aggressive driving and psychopathic characteristics, which encompass the above traits. The present investigation examines in two studies the association between specific subtypes of driving misconduct, i.e., unintentional mistakes and deliberate rule violations with psychopathic characteristics, with a focus on the role of levels of fear and anxiety in aberrant driving. Findings support the hypotheses that fearlessness, i.e., the bold, unemotional aspect of psychopathic traits, characterizes drivers who engage in frequent deliberate driving code violations, whereas the more impulsive/antisocial aspect of psychopathy, associated with higher levels of fear and anxiety, is more characteristic of drivers who engage in unintentional mistakes. Fearless features are also associated with higher self-reported driving misconduct and accidents. Study 2 conceptually replicated this finding by showing that mistakes are positively related to high sensitivity to punishment, while violations are negatively related to it. Findings are discussed in light of psychopathy theory and in relation to prevention and intervention.

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1. Introduction

Motor vehicle accidents are one of the main causes of death and disability, especially among young people around the world (Constantinou et al., 2011; Massie et al., 1995; Subramanian, 2012; WHO, 2004). Accidents are the outcome of multiple etiological factors operating in tandem, including road and environmental conditions, vehicle adequacy and human factors (Larsson and Tingvall, 2013). Drivers' behavior contributes to 90–95% of motor vehicle crashes (Evans, 1993) and includes failures in cognition, which result in driving errors, (e.g., inattention and lapses in memory), use of alcohol and drugs, failure to utilize protective measures such as seat-belts, and the tendency to drive in an aggressive or risky manner. The most frequently cited causes are high speed, driving under the influence of alcohol and other substances and dangerous and aggressive driving in general (e.g., Clarke et al., 2010; Siskind et al., 2011). Further examination of driver

characteristics that motivate engagement in aberrant driving is warranted, as is the purpose of the current investigation.

Factor analytic findings of driving behavior that violates the driving code and is associated with motor vehicle crashes has documented the existence of at least two broad categories of aberrant driving, unintentional mistakes and intentional violations. Research using the Driving Behavior Questionnaire (DBQ; Kontoyiannis et al., 2002; Lajunen et al., 2004; Reason et al., 1990) shows that driving misbehaviors can be divided into lapses, errors, aggressive violations and non-aggressive/ordinary violations. Errors are actions that fail to achieve the intended results (Reason et al., 1990) and pose some risk for drivers' safety. Lapses are failures in attention and memory, which are less likely to result in serious accidents, while violations are “deliberate deviations from the practices believed necessary to maintain the safe operation of a potentially hazardous system” and correlate strongly with traffic accidents (Reason et al., 1990, p.1316). Violations have been further divided into “aggressive”, which have an emotional/interpersonal component (e.g., sound the horn to indicate annoyance) and “ordinary” with no aggressive motive but still intentional (Kontoyiannis et al., 2002). Men typically report significantly more violations than women (Reason et al., 1990), while young

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people engage in more risky driving in all categories (Blockey and Hartley, 1995). Fatal crashes among individuals over 65 tend to be associated with errors and lapses, such as misjudgements and erroneous perceptions, rather than violations, showing that different patterns of behavior characterize specific subgroups of risky drivers (Clarke et al., 2010).

Specific driving behaviors have been related to particular personality traits: Increased trait anxiety has been shown in some cases to predict the commitment of driving errors (Shahar, 2009), in the same way that anxiety is related to poor performance outcomes in other domains (e.g., Berggren and Derakshan, 2013). High anxiety-related errors may characterize specific sub-groups of drivers, such as women (Miller and Taubman-Ben-Ari, 2010) and, in some categories of drivers, correlate with other high-risk personality characteristics for driver misconduct, such as sensation seeking (Ulleberg, 2002). Similarly, high impulsivity and low executive control of behavior may be related to frequent errors due to carelessness and loss of concentration (lapses) but also to the disregard of negative consequences in some cases.

Committing violations which are deliberate, risky and may result in negative and punitive consequences implies a level of fearlessness and low response to punishment. The study by Ulleberg (2002) indeed identified a sub-group of risky drivers, mostly men, characterized by low anxiety, low altruism and high levels of aggression and sensation seeking. These findings indicate that different levels of fear and anxiety may map differentially to specific types of driver misconduct and that both very low levels and very high levels of fear are detrimental to driving but through the operation of different motivational mechanisms (e.g., Olteal and Rundmo, 2006). Better delineation of the traits that predict particular types of driving misbehavior can increase our ability to target intervention efforts to specific groups of drivers, using consequences that may motivate safe driving behavior in each subgroup.

In addition to anxiety, other traits of drivers who engage in risky driving have been examined, especially in relation to deliberate violations (Fernandes et al., 2007; Tsuang et al., 1985; Ulleberg and Rundmo, 2003). Such traits include aggression, impulsivity and sensation-seeking (Constantinou et al., 2011; Rimmö and Åberg, 1999). Sensation seeking (Zuckerman, 1994) is a well-established predictor of risky, drunk and aggressive driving (Dahlen et al., 2005; Dahlen and White, 2006; Jonah et al., 2001). Similarly, Impulsivity, “the propensity to engage in behaviors without proper regard for consequences” (Whiteside and Lynam, 2003, p.211) has repeatedly been found to correlate with risky and aggressive driving and proneness to crashes (Dahlen et al., 2005; Furnham and Saipé, 1993; Renner and Anderle, 2000). Aggressiveness, as a personality characteristic, is also a predictor of drunk driving and speed, especially among young drivers (Begg and Langley, 2004; Gulliver and Begg, 2004). Fearlessness is another trait that appears particularly relevant to involvement in risky behaviors and to recidivism but has not been studied extensively (Constantinou et al., 2011; Fanti et al., 2015, in press). It describes individuals who do not learn from negative consequences and punishment and are therefore likely to repeat risky and socially undesirable behaviors.

Impulsivity, sensation-seeking, fearlessness and inconsideration of others, displayed when drivers engage in deliberate, self-serving rule violations and aggression, are reminiscent of the severe personality aberration found in psychopathic populations. Psychopathy is a psychopathological disturbance of personality typically involving significant deviant behavior and specific emotional and interpersonal deficits, (e.g., Patrick et al., 2009) such as distinctively low response to fear and punitive stimuli, lack of empathy and manipulation of others for one's own benefit (Patrick et al., 2009). It was traditionally considered to characterize violent, incarcerated offenders (Patrick et al., 2009), but it more

recently became apparent that psychopathic traits exist on a continuum in the general population (e.g., Fanti et al., in press; Farrington, 2006). Viewed in this way, psychopathic traits reflect what has been described as the “dark side” of personality (Harms et al., 2011), which encompasses traits, similar but less severe to clinical categories such as antisocial personality disorder, narcissistic personality disorder and others. The subclinical severity of these traits allows one to function appropriately and even highly in everyday life but may have severe consequences on specific tasks. “Dark side” personality traits have been found to predict poor outcomes in domains such as organizational behavior and have recently received more research attention (Spain et al., 2014).

Given the link between psychopathy and the personality traits that have so far been found to predict aberrant driving, it remains to be empirically documented if risky drivers and drivers who engage in frequent rule violations or who are implicated in motor vehicle crashes can be characterized to various degrees of severity by psychopathic personality features, especially the core features of fearlessness and lack of consideration of others. Although the association between psychopathic features and aberrant driving appears self-evident, surprisingly little research has documented it empirically, and other researchers (e.g., Fernandes et al., 2007) have suggested the need for additional research in this domain. As previous research has suggested, different sets of characteristics may be the best predictors for different types of behaviors (Fernandes et al., 2007), and so understanding which psychopathic traits are associated with which types of driving misconduct may be important. A link between psychopathy and behaviors such as repeated speed driving has been identified by others (Yannis et al., 2013) though no previous work appears to have linked psychopathy to intentional versus unintentional driving misconduct.

Documenting the link between psychopathy and driving behavior and how specific psychopathy characteristics relate to specific ways of driving is the purpose of the current investigation. Emphasis is given to the dimension of fearfulness/fearlessness since increased levels of fear and anxiety might relate, on the one hand, to errors due to loss of concentration and low confidence in one's driving ability (Shahar, 2009), but on the other hand, very low levels of fear may relate to severe and deliberate driving misconduct due to disregard for negative consequences and the rights of others. Fearless and reckless driving may index poor responding of the defensive/behavioral inhibition system, as often found among individuals high in psychopathy (Fowles and Dindo, 2009; Patrick et al., 2012). To the contrary, fearfulness and high anxiety have been empirically linked to impulsivity and low executive control (Fanti et al., in press), which may explain unintentional mistakes and lapses. Therefore, the main contribution of the present study is (a) the use of psychopathy and its core dimension of fearlessness as a theoretical framework that can help clarify the role of personality in driving behavior, and (b) the attempt to identify how specific dimensions of psychopathic characteristics map onto distinct patterns of driving behaviors. Although psychopathic traits may be at low levels in the general population, those who are high on the core characteristics of fearlessness and low consideration of others may demonstrate dangerous driving and may require special interventions, given the resistance of psychopathy to treatment.

Psychopathy, as measured by widely used and well-accepted instruments like the PCL-R (Hare, 2003) and the PPI-R (Lilienfeld and Widows, 2005), is not a unified construct but appears to incorporate various sub-dimensions (Hicks and Patrick, 2006; Verona et al., 2001). Both the PCL and PPI have been broken down into two main factors. On the PCL, factor 1 correlates with narcissism, low empathy, instrumental aggression, social dominance and low negative affect

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