



Aggression on the road: Relationships between dysfunctional impulsivity, forgiveness, negative emotions, and aggressive driving [☆]



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ABSTRACT

This paper presents an investigation into the relationships between two individual characteristics (dysfunctional impulsivity and forgiveness), negative emotions, and self-reported aggressive behaviors. Based on the general aggression model, it was hypothesized that negative emotions mediate the relationship between dysfunctional impulsivity and aggressive driving. In addition, potentially risk-reducing personality traits such as forgiveness may buffer against the effect of negative emotions on aggressive driving. Five hundred and seventy-eight drivers were asked to imagine two potentially aggression-eliciting driving scenarios and to indicate (a) the extent of hypothetically experienced negative emotions and (b) the likelihood of engaging in mild and extremely aggressive driving behaviors in the described situations. Participants also completed measures of impulsivity and trait forgiveness. The results indicated that self-reported mild and extremely aggressive forms of driving behavior were positively correlated with dysfunctional impulsivity and negatively with forgiveness. Negative affect, composed of four negative emotions (anger, hostility, nervousness, and upset), was associated with aggressive driving. An analysis of mediation revealed that negative affect partially mediated the relationship between dysfunctional impulsivity and self-reported mild aggressive acts (e.g., making a hand gesture). However, the direct effect between dysfunctional impulsivity and extremely aggressive behaviors (e.g., ramming a vehicle) in the situation of intense provocation remained statistically unchanged while accounting for negative affect. It was also found that forgiveness mitigated the influence of negative affect on aggressive behaviors, especially on extremely aggressive driving behaviors.

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1. Introduction

While aggression is a natural part of our behavior and may have some advantages in particular situations, it should be considered as inappropriate and deviant behavior on the road. Aggressive driving represents a serious problem in today's society with an increasing number of drivers identifying this issue as alarming (AAA, 2008). In a survey in Slovakia and

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the Czech Republic (Kováčová, 2013), 43% of 618 drivers reported that aggressive driving has increased compared with three years ago, 36% thought that it has stayed the same, and 7% of the drivers thought it had decreased (14% could not say). Stossel (2007) noted that the attention of media has exaggerated the extent and consequences of aggressive driving, but research has suggested that extremely aggressive behaviors such as physical attacks or vehicle damage are rare (Özkan, Lajunen, Parker, Sümer, & Summala, 2010).

1.1. Aggression on the road

Human aggression can be defined as “any form of behavior that is intended to injure someone physically or psychologically” (Baron & Richardson, 1994, p. 7; Berkowitz, 1993). Bushman and Anderson (2001, p. 274) added that “the perpetrator must believe that the behavior will harm the target and that the target is motivated to avoid the behavior”. Similarly, driver aggression can be defined as “any form of driving behavior that is intended to injure or harm other road users physically or psychologically” (Lajunen, Parker, & Stradling, 1998, p. 108). A long tradition of the scientific study of aggression indicates that it is often the result of a complex combination among person (e.g., traits) and situational factors (e.g., provocation), learning, affect, arousal, and biased information processing (Anderson & Bushman, 2002).

The various domains of research into aggressive behavior have given rise to a number of human aggression theories, and several of them have been applied to the understanding of aggressive driving. For those concerned with research examining aggressive driving behavior, the frustration–aggression hypothesis appears to be relevant (Dollard, Doob, Miller, Mowrer, & Sears, 1939). Dollard et al. (1939) conceptualized aggression as a consequence of frustration and noted that the existence of frustration always leads to aggression in some form. A frustration can be defined as “an unexpected blockage of an anticipated goal attainment” (Berkowitz, 1989, p. 59). Later, Berkowitz (1989, 1993) contributed to the reformulation of frustration–aggression hypothesis and formulated the cognitive neoassociation model of aggression. He emphasized that aversive events produce a negative affect which stimulates various memories, thoughts, expressive motor reactions, or psychological responses associated with both fight and flight tendencies.

In order to better explain aggressive behaviors, Anderson and Bushman (2002) integrated five ‘mini-theories’ of aggression (cognitive neoassociation theory, social learning theory, script theory, excitation transfer theory, and social interaction theory) into one comprehensive framework, called the general aggression model (GAM). The GAM focuses on the “person in a situation”, called an episodic process, and consists of (a) person and situation *inputs*, (b) affective, cognitive, and arousal *routes* through which the inputs have their impact, and (c) *outcomes* of the underlying appraisal and decision processes.

Whereas the frustration–aggression hypothesis identifies the person and situational factors that contribute to aggressive driving (Shinar, 1998), GAM provides a broader view on human aggression that encompasses emotional and cognitive aspects that mediate the effects of a person and situational variables on aggressive behavior (Anderson & Bushman, 2002). Recently, the GAM has been applied to the study of aggressive driving (e.g., Lin, 2009; O’Brien, 2011). These studies provided empirical support for the GAM by demonstrating that person and situational inputs interact to determine driver’s aggression on the road. Further, the GAM can be used as a framework to explain when the relationships between inputs and aggressive driving occur by examining the underlying processes (i.e., routes).

1.2. Emotions and aggressive driving

Viewed within the GAM, person and situational input variables influence aggressive behavior through the present internal state (affect, cognition, and arousal) that they create (Anderson & Bushman, 2002). Affect involves the current mood, emotions (not necessarily anger), and expressive motor responses. The current emotional state has the potential to prime a person for aggressive behavior (Berkowitz, 1989, 1993).

There are often situations when an individual could hardly tell which exact emotion he or she is experiencing other than the general description as “good” or “bad” (Hu, Xie, & Li, 2013). Qualitative analysis of the psychological characteristics of ten drivers revealed that half of the participants experienced difficulties when articulating their emotions (O’Brien, 2011). Previous studies on emotions in driving research focused mostly on anger (Hennessy, 2011), whereas only a few studies considered multiple emotions (e.g., Levelt, 2003; Mesken, Hagenzieker, Rothengatter, & De Waard, 2007; O’Brien, 2011). A study by Mesken et al. (2007) revealed that anger, anxiety, and happiness were related to road events. Focusing on negative emotions, anger was mostly associated with events that impeded progress, whereas anxiety occurred when the events affected safety (Mesken et al., 2007). Levelt (2003) showed in his study that negative emotions (anger, sorrow, and fear) occurred one and half time less often than positive ones while driving; of all reported emotions, 24% were anger, 8% were fear and 7% were sadness. Particularly during an aggressive driving incident, anger, annoyance, threat, shock, frustration, and excitement were the most often experienced emotions among drivers (O’Brien, 2011).

1.3. Person-related factors

1.3.1. Dysfunctional impulsivity

According to Dickman (1990, p. 95), impulsivity is “a tendency to deliberate less than most people of equal ability before taking action”. Dickman (1990) proposed two types of impulsivity: functional and dysfunctional. Whereas functional impulsivity is the tendency to act with short forethought when this strategy is appropriate to the situation, dysfunctional

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