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The slow and the furious: Anger, stress and risky passing in simulated traffic congestion

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ABSTRACT

112 college students participated in a study of simulated driving to investigate how trait driver aggression, state anger and coping predict risk-taking behaviors such as tailgating and frequency of passing. The simulation scenario, driving in slow traffic, elicited both anger and stress. However, consistent with the transactional model of driver stress, anger and distress were associated with different patterns of coping. Both anger and aggression were associated with dispositional confrontive coping. Drivers were afforded opportunities to pass other traffic, in risky circumstances. Dispositional coping factors, especially confrontive coping, predicted risk-taking behaviors, such as frequent passing and tailgating prior to the pass. However, trait aggression and anger did not predict risky behaviors. Confrontive drivers may have developed habitual behavioral styles that are expressed irrespective of current mood and coping strategy. The findings suggest that stress or anger management may be only a partial solution to dangerous driving in congested conditions. Further investigation of how drivers acquire confrontive behavioral styles is needed. The data also support multivariate approaches to selecting safe drivers in commercial and industrial contexts.

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1. Introduction

Anger is one of several driver stress responses to the challenges of driving (Matthews, 2002; Wickens, Wiesenthal, Hall, & Roseborough, 2013). It is considered a dangerous response that it is associated with an increased likelihood of aggressive behaviors that threaten safety (Deffenbacher, Lynch, Filetti, Dahlen, & Oetting, 2003), and hence a target for safety interventions (Wickens, Wiesenthal, et al., 2013). However, anger is a complex psychological phenomenon that may reflect the interaction of personality, social factors, and external stressors. The aim of the current study was to investigate the utility of the transactional model of stress (Lazarus, 1999) as a basis for differentiating the safety impacts of anger, aggressive personality and coping strategy.

Fig. 1 (upper panel) represents the trait-state model of anger that has shaped much research on its impacts on safety (Deffenbacher, Lynch, Oetting, & Yingling, 2001; Jovanović, Lipovac, Stanojević, & Stanojević, 2011). Personality traits, such as aggression and neuroticism, interact with external stressors such as traffic congestion to elicit a state of angry emotion,

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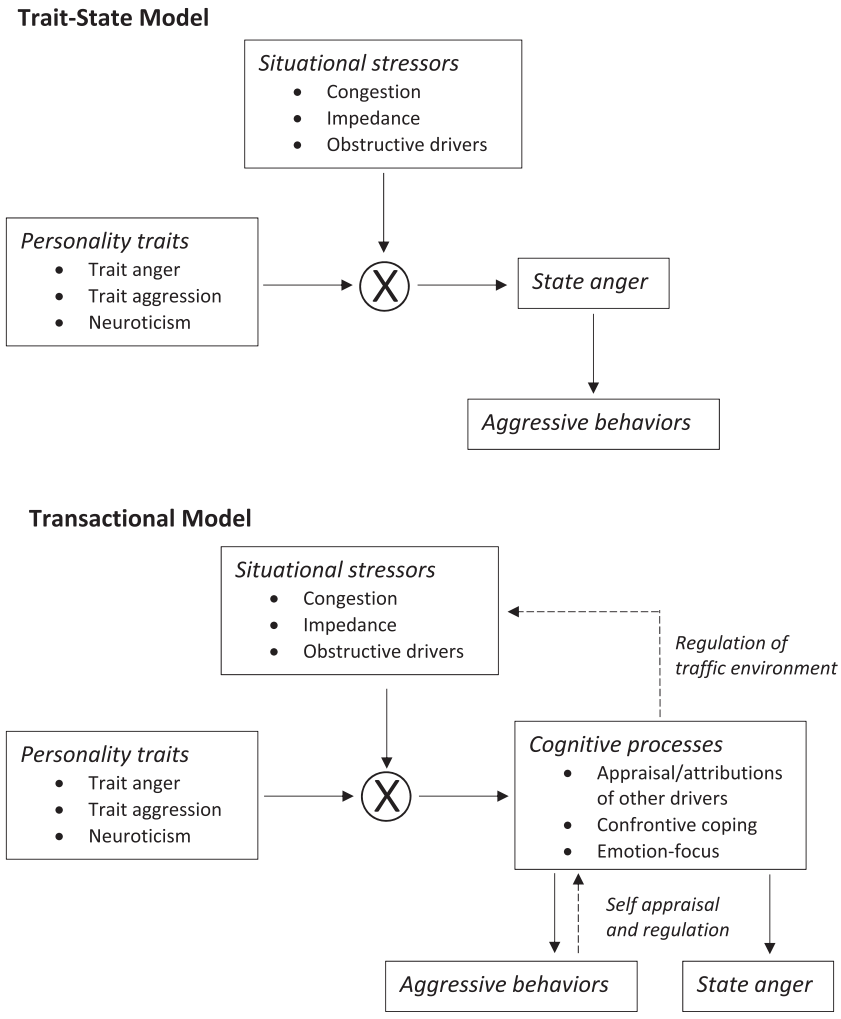

Fig. 1. Trait-state and transactional models of impacts of personality and stressors on state anger and aggressive behaviors.

which disrupts information-processing and leads to risky behavior and loss of safety. The trait-state model is a reasonable starting-point for research, but it has several limitations:

1. Research based on the trait-state model does not always separate the influence of anger on driving behavior from concomitants of anger such as aggressive personality, stress, and situational factors such as congestion. Psychometrically, anger is a facet of general negative affect that correlates quite substantially with other negative emotions such as fear and sadness (Watson & Clark, 1994). Driver stress is a known risk factor for crashes (Rowden, Matthews, Watson, & Briggs, 2011). Indeed, environmental stressors such as congestion may provoke stress, aggression and anger concurrently (e.g., Hennessy & Wiesenthal, 1999). Anger may impact unsafe behaviors directly (Deffenbacher et al., 2003). Alternatively, the stress factors that typically accompany anger that may be the causal influences on driver behavior. These include negative emotions, negative social perceptions, and maladaptive coping. Measurements of anger may serve as a proxy for these other influences rather than as direct indicators of unsafe behavior.
2. The nature of the mechanisms through which angry emotion disrupts information-processing is somewhat unclear. For example, the activation of inclinations to hurt others may be intrinsic to anger (Berkowitz, 2012): driver anger may be associated with motivations toward vengeance (Hennessy & Wiesenthal, 2005). Alternatively, anger may be a side-effect of social-cognitive processes that are more proximal influences on behavior, a perspective elaborated in the transactional model (Lazarus, 1999; Matthews, 2002). In support of this view, emotions may not be rigidly linked to response tendencies; their impact on action may depend on how they are interpreted within a given context (Kustubayeva, Matthews, & Panganiban, 2012; Martin, 2001). Depending on personal interpretation, a frustrated driver might either take her anger as a cue that aggressive behavior was an appropriate response or as a cue that she should make an effort to cool down and take care to drive safely.