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When What Happens at Work Impacts Behavior During the Commute: Understanding the Mechanisms that Link Workplace Attitudes and Experiences to Aggressive Driving Behaviors

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Aggressive driving behaviors have been gaining in notoriety in recent years, with U.S. drivers identifying aggressive driving as a serious problem. Researchers have called for understanding the contextual factors that contribute to drivers engaging in such behaviors. If individuals engage in aggressive- and potentially aggressive- driving behaviors during their work-to-home commutes, it is possible that some aspects of work may be influencing these behaviors. The present study examined the influence of employee's work attitudes and experiences on aggressive- and potentially aggressive- driving behaviors, and the mechanisms that might explain the nature of any spillover effects. Data were collected via a baseline survey and daily diaries administered over the course of one working week, from employees (N = 109) who worked full-time and commuted by private vehicle alone on a daily basis. Objective indicators of potentially aggressive driving behaviors were also collected using a mobile application from a subset of the sample (N = 31) during one working week. Daily diary surveys indicated that on days when employees experience job stress and incivility at work, they engage in aggressive driving behaviors during their work-to-home commutes, through the explanatory mechanisms of negative emotions while driving and perceived psychological contract violation during the commute. In addition, some convergent support was found for the hypothesized relationships using potentially aggressive driving behaviors as the outcome of interest in both the survey- and app-based samples. Overall, the present findings suggest that spillover effects due to employees experiencing job stress and workplace incivility have the potential to impact behaviors elicited during the commute, raising

the risk of detrimental consequences for both the employee and employer. Practical implications and future lines of research are discussed.

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I had the idea for this dissertation during my second year of graduate studies (I was well into my Master's thesis research), where I was sitting in traffic, attempting to commute through Hartford. During this commute, I experienced an intense emotional response to drivers attempting to "cut in line" by seemingly taking a left exit and then getting over at the last minute, forcing their way into the traffic queue. I met with Janet Barnes-Farrell the next day with the proclamation that I believed road rage to be a function of perceived psychological contract violation during the commute. Of course, over the years, this dissertation idea developed and took shape to become what it is today, and I would be remiss if I didn't thank and give proper due to those who helped me along the way.

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When What Happens at Work Impacts Behavior During the Commute: Understanding the Mechanisms that Link Workplace Attitudes and Experiences to Aggressive Driving Behaviors

Aggressive driving behaviors that result in road-rage incidents have been gaining in notoriety in recent years, especially with the proliferation of cell-phone use and their video-capturing capabilities. Research suggests that this media attention has exaggerated the extent of aggressive driving (Stossel, 2007). Nevertheless, drivers are identifying aggressive driving as a serious problem in the U.S. (AAA, 2008). Although environmental and social factors such as weather conditions and traffic congestion may precede aggressive driving, more and more research is focusing on the driver (Galovski, Blanchard, & Veazey, 2002). A AAA Foundation for Safety (2009) poll indicated that the majority of respondents believed that both roads and cars are safer today than in the past; the biggest danger on the roads is drivers themselves. Drivers have not changed their personalities and become more aggressive people, therefore a focus is needed on the conditions that elicit aggressive driving behaviors. Researchers have called for the need to focus on *why* people engage in aggressive- and potentially aggressive- driving behaviors, rather than focusing on *who* the aggressive drivers are (Shinar, 1998). Understanding what precedes and predisposes drivers to engage in aggressive- and potentially aggressive- driving behaviors is the necessary first step in combatting such behaviors.

One class of drivers that is understudied in aggressive driving research is employees commuting between work and home (and vice versa). If employees engage in aggressive- and potentially aggressive- driving behaviors during their work-to-home commute, it is logical to expect that what happens at work may influence these behaviors. Specifically, aggressive- and potentially aggressive- driving behaviors may be a response to thoughts and feelings that develop

during the course of the workday and spill over from the workplace to the period of time when employees are physically transitioning from work to home.

Commuting constitutes the physical, as well as the psychological transition between the work and home domains, and the time spent commuting doesn't necessarily belong to either of the domains that border this time. Although research has shown that work can spill over into the home and other non-work domains (e.g., Andreassen, Hetland, & Palleson, 2013; Carlson, Ferguson, Perrewé, & Whitten, 2011; Sonnentag & Binnewies, 2013), very little attention has been paid to the impact that work may have on the transition time between one's work and home domains. There is some limited research suggesting that work stressors, attitudes, and experiences impacts the commute through influencing risky commuting safety behaviors, defined as driving violations (e.g., speeding; Burch, 2015; Elfering, Grebner, & Haller, 2012; Turgeman-Lupo & Biron; 2017). Expanding on prior work, I believe that there is also a need to examine how work may impact aggressive- and potentially aggressive- driving behaviors during employees' commute time.

One such work attitude that can spill over into the commute is job stress. Prior research has established that job strain, of which job stress is a component, impacts safety behaviors while commuting (Burch, 2015). However, the role of job stress in influencing aggressive- and potentially aggressive- driving behaviors during employees' commute time has yet to be examined. Similarly, experiencing incivility at work may influence behaviors during the commute as well. In particular experiencing incivility in the workplace provides impetus for affect-driven behavioral outcomes. While job stress and experiencing incivility may exhibit direct effects with aggressive- and potentially aggressive- driving behaviors, indirect effects are possible too through the influence of workplace attitudes and experiences on the development of

negative emotions while driving. Moreover, situational factors that elicit affective responses, such as perceiving a psychological contract violation during the commute may also exhibit direct effects on aggressive- and potentially aggressive- driving behaviors, as well as serve as an explanatory mechanism through which negative emotions while driving influence aggressive- and potentially aggressive- driving behaviors.

Aggression is related to emotion, so factors that produce negative emotions during the commute (whether they emanate from workplace attitudes and experiences or are produced during the commute itself), may influence aggressive- and potentially aggressive- driving behaviors. With this in mind, I examined job stress, incivility, negative emotions while driving, and perceived psychological contract violation as influences on aggressive- and potentially aggressive- driving behaviors. Specifically, I examined the indirect effects of job stress and incivility on aggressive- and potentially aggressive- driving behaviors via negative emotions while driving and perceived psychological contract violation. Spillover theory, the stress-strain framework, the emotion-centered model of work behaviors, and psychological contract theory provide understanding in how workplace attitudes and experiences influence aggressive- and potentially aggressive- driving behaviors. The conceptual model that guides this research, which is elaborated on in the following sections, is summarized in Figure 1.

Aggressive Driving Behaviors

Nearly 56% of fatal automobile accidents result from aggressive- and potentially aggressive- driving behaviors (AAA Foundation for Safety, 2009). These estimates exclude non-fatal accidents, suggesting that the number of accidents attributable to aggressive- and potentially aggressive- driving behaviors is actually much higher. Furthermore, it’s been estimated that nearly 34% of drivers engage in aggressive driving behaviors (Galovski, Malta, & Blanchard,

2006). However, the available national data do not take into account driver intentions or motivations and are often calculated ad hoc using data gathered from police investigations on the behaviors that contributed to fatal crashes, leaving gaps in our understanding of causal factors. Therefore, national statistics on the prevalence of motor vehicle accidents attributed to aggressive driving behaviors are limited.

A AAA Foundation for Safety (2009) poll indicates that aggressive driving is a primary concern among U.S. citizens, and is often ranked as a leading traffic safety issue. However, reviews of the literature on aggressive driving, and its impact on traffic safety, are unclear due to a variety of conflating issues in the definition, measurement, and availability of adequate data. In a review and clarification on the aggressive driving literature, Tasca (2000) noted that many definitions provided by previous research conflate aggressive driving and road rage. Dula and Geller (2003) echoed this sentiment and went further to state that given the "definition ambiguity in the literature about aggressive driving, it is no wonder researchers and laypersons alike lack an understanding of its causes and maintenance factors" (p. 560). The National Highway Traffic Safety Administration (NHTSA, 1999) refers to aggressive driving behaviors as operating a "motor vehicle in a manner that endangers or is likely to endanger persons or property." This definition, along with the one provided by AAA (i.e., "operation of a motor vehicle without regard to others' safety;" Goehring, 2000) makes a conceptual distinction between aggressive driving behaviors and road rage, with road rage defined as a criminal act of assault where there is intent to do harm. What's more, some researchers indicate that aggressive driving behaviors involves intent (Ellison-Potter, Bell, & Deffenbacher, 2001), while others note that aggressive driving behaviors can be defined as being driven by hostile or instrumental behaviors, or a sense of time urgency (Deffenbacher, 1999). Finally, other researchers advocate that some drivers

behave aggressively, however they lack insight into how their driving affects others, indicating a complete lack of intent (Galovski et al., 2006).

Researchers support the notion that driver aggression is related to an individual's dispositional level of aggression (Dula & Ballard, 2003), but individuals who are not dispositionally aggressive people can behave aggressively while driving, given the right set of personal and situational factors during the commute.

Due to the lack of definitional clarity on what constitutes aggressive driving behaviors, I adopted a broad definition for this study. Specifically, I utilize the definition proposed by NHTSA (1999) to define aggressive driving behaviors as "the operation of a motor vehicle in a manner which endangers or is likely to endanger persons or property." Additionally, it should be noted that while aggressive driving behaviors and risky driving behaviors are related, they are conceptually distinct. Risky driving behaviors concern the behaviors individuals engage in that increases the risk of a motor-vehicle accident and are broad in scope. Aggressive driving behaviors are a specific class of risky driving behaviors that includes behaviors that are likely to endanger yourself and others. Furthermore, I utilize Neuman, Pfefer, Slack, Raub, Luke, and Wark's (2003) advice, which states that aggressive driving behaviors need to be considered within a contextual framework that takes into account both psychological and environmental factors.

Antecedents to aggressive driving behaviors. The literature regarding antecedents of aggressive driving behaviors has produced fairly consistent findings, however the focus has largely been on understanding the aggressive driver over understanding the personal and situational factors that contribute to aggressive driving behavior. Perhaps this is most evident when considering the influence of anger in propensity to engage in aggressive driving behaviors.

Results are inconsistent in their findings on the association of trait anger and driving anger with aggressive driving behaviors. Trait anger is characterized by more frequent and intense feelings of anger that extend for longer durations of time (Spielberger, 1988), and research supports that those higher in trait anger display more aggressive behaviors in everyday contexts (Veenstra, Bushman, & Koole, 2017). Driving anger extends this notion to the driving context and has been defined as the propensity to experience anger while driving (Dahlen & Ragan, 2004). Some research suggests that both trait anger and driving anger exhibit weak correlations with aggressive driving behaviors (Deffenbacher, Alcazar-Olan, Kocur, & Richards, 2014; Sullman, Stephens, & Kuzu, 2013). Other research suggests that both trait anger and driving anger exhibit moderate (Bumgarner, Webb, & Dula, 2016; Herrero-Fernández, 2013; Suhr & Nesbit, 2013) or strong (Edwards, Warren, Tubré, Zyphur, & Hoffner-Prillaman, 2013) associations with aggressive driving behaviors. Meta-analytic evidence suggests that while both trait anger and driving anger are positively associated with aggressive driving behaviors, the association is stronger for trait anger (Bogdan, Măirean, & Havârneanu, 2016). What's more, the association between anger and aggressive driving behaviors is dependent on a number of factors, including the form of aggressive driving behaviors exhibited, gender, age, driving experience, and the geolocation of the study conducted (Bogdan et al., 2016).

Other individual difference variables exhibiting positive associations with aggressive driving behaviors include hostility (Harris & Houston, 2010; Roškova & Kováscová, 2012; Kováscová, Roškova, & Lajunen, 2014); dysfunctional impulsivity (i.e., speedy and inaccurate performance when deliberating on taking an action; Kováscová, Lajunen, & Roškova, 2016); negative affect (Kováscová et al., 2016); the likelihood of forgiving others' indiscretions while driving (Bumgarner et al., 2016; Kováscová et al., 2014; Moore & Dahlen, 2008); sensation

seeking (Dahlen, Martin, Ragan, & Kuhlman, 2005; Harris & Houston, 2010); and competitiveness (Harris & Houston, 2010). Research also suggests that males and younger individuals are more likely to engage in aggressive driving behaviors (Haje & Symbaluk, 2014; Sullman, Stephens, & Yong, 2014; Sullman et al., 2013; Wickens, Mann, Stoduto, Lalomiteanu, & Smart, 2011). However, there are inconsistencies in the research on demographic characteristics as they relate to aggressive driving. For example, some research suggests that there are no age and sex differences in the propensity to engage in aggressive driving (Deffenbacher, Kemper, & Richards, 2007; Moore & Dahlen, 2008). Furthermore, while research is fairly consistent in surmising that men exhibit more overt aggressive behaviors than females (Archer, 2004), research in aggressive driving behaviors may differ based on the expression and type of aggressive behavior. For example, research supports that females are more likely to engage in verbal aggressive expression (Dahlen & Ragan, 2014), while men are more likely to utilize the vehicle (e.g., tailgating) in their expression of aggressive behavior (Sullman, 2015).

Behaviors that constitute aggressive driving. Lists of aggressive driving behaviors vary substantially, with many behaviors listed serving as both aggressive- and potentially aggressive-driving behaviors, depending on the context with which the behavior is enacted (e.g., intending to behave aggressively, retaliation for perceived action against the driver). To that end, many common driving behaviors, such as speeding, tailgating, gesturing, and failure to observe road signs are indicative of potentially aggressive driving behaviors that may lead to aggressive driving behaviors. Not only that, aggressive driving behaviors have been conceptualized as a health risk behavior (Bumgarner et al., 2016), due to the notion that aggressive- and potentially aggressive- driving behaviors are overt, observable behaviors, which have detrimental impacts

for individuals' health and safety (Deffenbacher, Lynch, Filetti, Dahlen, & Oetting, 2003; Dula & Ballard, 2003). Aggressive driving behavior as a health-risk is further supported by research indicating that aggressive driving is a risk factor for major accidents (Stephens & Sullman, 2014). Furthermore, aggressive driving behaviors can incite a retaliatory process, influencing other drivers to behave aggressively, which can exacerbate the risk of accidents (Clapp et al., 2011).

Advancing the measurement of aggressive driving behaviors. What is needed in the aggressive driving literature is an understanding of contextual factors (i.e. psychological and situational) that may influence aggressive driving behaviors. As previously mentioned, much of the literature has focused on stable individual difference and demographic characteristics that may engender an individual to engage in aggressive behaviors while driving (e.g., trait anger, driving anger, hostility, age, gender). However, research suggests that the propensity to engage in aggressive driving behaviors is greater when there is heavy traffic and when individuals report more time pressure (Harris & Houston, 2010). This evidence would suggest then, that the propensity to engage in aggressive driving is greater when individuals are commuting between work and home, as the commute often occurs for employees during rush hour times (i.e., between the hours of 6-9 am and 4-7 pm). If employees are engaging in aggressive driving behaviors during their commute time between work and home, these behaviors may be predicated by work-related (i.e., contextual) circumstances more so than stable individual and demographic characteristics of the commuters. Thus, understanding the work-related factors that influence aggressive driving behaviors is needed.

Methodologically, researchers have called for more precision in aggressive driving behavior research (Galovski et al., 2006). Indeed, it has been noted that research should make

use of direct observation and validated self-report instrumentation in the study of aggressive driving behaviors. Furthermore, Galovski et al. (2006) called for the sampling of different driving time periods, noting a lack of research examining daily aggressive driving behaviors. Aggressive driving behaviors are likely to fluctuate on a daily basis and may change due to environmental and contextual circumstances. Therefore, the examination of aggressive driving behaviors is needed that uses methods that: (a) include direct observation in addition to self-report, and (b) are appropriate to capture the dynamic nature of aggressive driving behaviors.

In this study, I build on workplace and organizational stress theories to identify work- and non-work- related circumstances that influence daily aggressive driving behaviors for employees commuting between work and home. Furthermore, I use self-report of aggressive- and potentially aggressive- driving behaviors and direct observation of potentially aggressive driving behaviors in order to more fully and accurately assess this class of behaviors.

Spillover of Job Stress

The spillover-leisure hypothesis states that attitudes and behaviors developed in one life domain can spill over into other life domains (Wilensky, 1960). Typically, spillover is discussed in terms of work and family; what happens in the work domain can "spill over" into the family domain and vice-versa because one's behaviors and attitudes aren't necessarily bounded, and can transfer as a result (Champoux, 1978; Zedeck, 1992). There is a significant body of work demonstrating that attitudes and behaviors developed in the work domain can spillover into non-work domains (e.g., Andreassen et al., 2013; Carlson et al., 2011; Cho & Tay, 2016; Sonnentag & Binnewies, 2013). Meta-analytic evidence suggests that job and family stress have the strongest effects on cross-domain satisfaction over other work- and family- domain specific

variables (Ford, Heinen, & Langkamer, 2007). This suggests that when examining impacts on attitudes and behaviors in non-work domains, job stress may elicit particularly salient effects.

Job stress refers to the discomfort one experiences when the relationship between the person and the environment is appraised as taxing and/or exceeding his or her resources (Jex & Beehr, 1991; Lazarus & Folkman, 1984). According to the stressor-stress-strain model, job stress is the result of job stressors (demands), which in turn can be associated with physiological, psychological, and/or behavioral strain outcomes. Lazarus and Folkman (1984) note that perceived (subjective) stress can create psychological and behavioral reactions that may be counterproductive. Meta-analytic evidence supports the link between hindrance stressors (job demands) and safety behaviors on the job (Bronkhorst, 2015), and subsequently workplace accidents and injuries (Clarke, 2012). Furthermore, research suggests that (subjective) job stress(ors) impacts job-related safety behaviors (Lu & Kuo, 2016), aggressive behaviors in the workplace (Vigoda, 2002), as well as counterproductive workplace behaviors (Balducci, Schaufeli, & Fraccaroli, 2011; Fida, Paciello, Barbaranelli, Tramontano, & Fontaine, 2014; Penney & Spector, 2005).

Turning to the commuting environment, it is logical to expect that unrelieved job stress may also spill over to impact behaviors during the commute. Research suggests that work-related stress, daily hassles, and general mental health influence driving lapses and violations in employees who utilize government vehicles for transportation during work time (Rowden, Mathews, Watson, & Biggs, 2011). For employees commuting between work and home, Burch (2015) found that job strain (conceptualized as subjective job stress, emotional strain, and cognitive strain) was significantly associated with riskier commuting safety behaviors (conceptualized as violations), and that experiencing affective, work-related rumination during

the commute partially mediated this relationship. Furthermore, Turgeman-Lupo and Biron (2017) recently reported that psychological workplace stressors (experiencing abusive supervision and perceived work-family conflict) were significantly associated with riskier commuting safety behaviors (conceptualized as violations, such as speeding and running through an intersection on a yellow or red light).

In a similar fashion, prior research supports the notion that work can influence driving anger, which can precede aggressive- and potentially aggressive- driving behaviors. Job stress may influence driving anger partially through job motivational processes (i.e., emotional exhaustion, work engagement; Li, Wang, Li, & Zhou, 2017), and partially through general anger and over-commitment (Hoggan & Dollard, 2007; McLinton & Dollard, 2010). Utilizing both the spillover and stressor-stress-strain models and extrapolating the aforementioned research, aggressive- and potentially aggressive- driving behaviors can be viewed as a behavioral strain response to the experience of unrelieved job stress.

Additionally, utilizing a cybernetic approach to job stress suggests that short-term dynamics operate within longer-term dynamics (Edwards, 1992; Griffin & Clarke, 2011). Short-term dynamics refer to processes that develop within a workday. Stress experienced throughout the workday may lead to immediate physiological, psychological, and behavioral strain reactions (Ilies, Dimotakis, & De Pater, 2010; Rodell & Judge, 2009); and these strain responses may remain at the end of the workday (Ganster, Fox, & Dwyer, 2001; Ilies et al., 2010). Considering that job stress fluctuates on a daily basis (Sonnentag & Fritz, 2015), and the call to examine aggressive driving behaviors at the daily level (Galovski et al., 2006) to examine daily fluctuation, ignoring the dynamics of these variables may lead to erroneous conclusions

regarding the relationship between these variables. Therefore, studying these variables at the daily level is needed in order to capture the dynamics of these processes.

Based on the spillover model, the stressor-stress-strain framework, and previous work demonstrating the spillover of job stress as a predictor of commuting safety behaviors, I hypothesize that:

Hypothesis 1a: Daily job stress will be positively associated with daily aggressive driving behaviors.

Hypothesis 1b: Daily job stress will be positively associated with daily potentially aggressive driving behaviors.

Spillover of Workplace Incivility

Workplace incivility is considered the most prevalent form of workplace aggression and is defined as deviant acts that are low in intensity and directed toward another organizational member with ambiguous intent to harm (Andersson & Pearson, 1999). Experiencing workplace incivility has been shown to be related to a host of negative affective, attitudinal, cognitive and behavioral outcomes for employees. For example, past research suggests that experiencing incivility is associated with: heightened emotionality (Bunk & Magley, 2013); negative emotions (Kim & Shapiro, 2008; Sakurai & Jex, 2012); depression (Lim & Lee, 2011; Miner, Settles, Pratt-Hyatt, & Brady, 2012); increased negative affect and lower levels of energy (Giumetti, Hatfield, Scisco, Schroeder, Muth, & Kowalski, 2013); decreased job satisfaction (Cortina, Magley, Williams, & Langhout, 2001; Lim & Lee, 2011), organizational commitment (Lim & Teo, 2009), and work motivation (Sakurai & Jex, 2012); lower perceived fairness (Lim & Lee, 2011); issues with task-related memory recall (Porath & Erez, 2007); intent to turnover (Griffin, 2010; Lim, Cortina, & Magley, 2008; Miner-Rubino & Reed, 2010; Wilson & Holmvall, 2013);

counterproductive workplace behaviors (CWBs; Penney & Spector, 2005); absenteeism (Sliter, Sliter, & Jex, 2012) and decreased job performance (Sakurai & Jex, 2012; Sliter et al., 2012).

More recent research suggests that experiencing incivility in the workplace may also impact employees' non-work lives, suggesting that experienced incivility influences attitudinal and behavioral outcomes in non-work domains. For example, research is consistent in supporting the notion that experiencing incivility at work impacts employees' well-being in general (Cortina et al., 2001; Lim & Cortina, 2005; Lim et al., 2008). Research also suggests that experiencing incivility impacts marital satisfaction (Ferguson, 2012), and leads to increased levels of work-to-family conflict (Ferguson, 2012; Lim & Lee, 2011). Ferguson (2012) found in a matched sample of targets of incivility and their partners that targets' incivility spilled over into the family domain through transmission of the stressful experience, which influenced both target and partner perceptions of marital satisfaction and influenced partner perceptions of work-to-family conflict.

If experienced incivility can spill over into non-work domains (i.e., family), then it follows that experienced incivility can spill over into the more proximal domain of the commute, influencing behavioral outcomes while commuting such as engaging in aggressive- and potentially aggressive- driving behaviors. The emotion-centered model of work behaviors provides a theoretical basis for this claim. The emotion-centered model of work behaviors (Spector & Fox, 2002, Spector & Fox, 2005) suggests that people experience emotional and behavioral responses to events that occur in the workplace. Specifically, when individuals appraise an event as negative, this induces emotion, which increases the likelihood of adverse behavioral responses. Research has shown that mistreatment in the workplace leads to expressions of frustration (Barclay, Skarlicki, & Pugh, 2005), and that experiencing workplace

incivility can incite targets to reciprocate (Bunk & Magley, 2013) and engage in retaliatory (Kim & Shapiro, 2008) behaviors. Furthermore, Andersson and Pearson (1999) speculated that workplace incivility, as a relatively low intensity form of workplace aggression (e.g., bullying), has the potential to escalate into more intense aggressive retaliatory workplace behaviors.

Extending the spillover model and the emotion-centered model of work behaviors to the commute, it is reasonable to expect that employees who experience incivility may engage in aggressive- and potentially aggressive- driving behaviors as a behavioral response during the commute. Indeed, it could be that engaging in such behaviors during the commute is seen as a more appropriate behavioral outlet than the workplace. Additionally, like job stress, experiences in workplace incivility can fluctuate on a daily basis (Zhou, Yan, Che, & Meier, 2015), which may elicit daily behavioral responses to these workplace events. As such, I hypothesize that:

Hypothesis 2a: Daily experienced workplace incivility will be positively associated with daily aggressive driving behaviors.

Hypothesis 2b: Daily experienced workplace incivility will be positively associated with daily potentially aggressive driving behaviors.

Negative Emotions while Driving

A potential mechanism by which job stress and experienced workplace incivility may affect aggressive- and potentially aggressive- driving behaviors is by influencing the negative emotions that employees bring into the commute. Emotion refers to response tendencies that can be both behavioral and physiological, that are brought on by significant situations (Gross, 1998). Lazarus (1993) argues that negative emotions can occur if an individual perceives a situation as threatening to his or her well-being. The emotion-centered model of work behaviors (Spector & Fox202; Spector & Fox, 2005) provides a theoretical framework for understanding how job

stress and experienced incivility in the workplace lead to negative emotions for individuals, which can result in behavioral responses. The emotion-centered model states that behavioral responses occur due to individuals seeking to reduce unpleasant emotional conditions that result from stressors that interfere with goals, activities, or performance. Research supports that negative emotional states result from both job stress (e.g., Fida et al., 2014; Greenridge & Coyne, 2014; Klumb, Voelkle, & Siegler, 2017) and experienced incivility (e.g., Ferguson, 2012; Kabat-Farr, Cortina, & Machiondo, 2016; Pearson, Andersson, & Wegner, 2001).

Indeed, the negative emotional states that result from job stress and incivility may spill over into other domains. Roberts and Levenson (2001) found in a sample of police couples that experienced job stress resulted in negative emotional states that carried over into the home domain to impact marital interactions. Klumb, Voelkle, and Siegler (2017) found that negative social interaction at work led to negative emotional states that spilled over into individuals' home life. Furthermore, Zhou, Yan, Che, and Meier (2015) found that experiencing workplace incivility was positively associated with after-work negative emotional states. Given prior evidence that negative emotions carry over from the workplace into non-work domains, it is logical to expect that individuals who experience job stress and incivility during the workday carry negative emotions resulting from these attitudes and experiences into their commute. Therefore, I hypothesize that:

Hypothesis 3a: Daily job stress will be positively associated with negative emotions while driving.

Hypothesis 3b: Daily experienced workplace incivility will be positively associated with negative emotions while driving.

As mentioned, experiencing negative emotions can lead to behavioral responses as a means to cope with those negative emotions. Spector and Fox (2002) argue that emotions can lead to action tendencies and intentions to reduce negative states, with negative emotions likely to lead to counterproductive behaviors in order to cope with the effects of the emotion. Fida, Paciello, Tramontano, Fontaine, Barbaranelli, and Farnese (2015) found that negative emotions resulting from job stress(ors) led to individual- and organizational- level counterproductive workplace behaviors. While Greenridge and Coyne's (2014) results suggest that positive and negative emotional states mediate the relationship between job stress and organizational citizenship behaviors, only negative emotions mediate the relationship between job stress and counterproductive workplace behaviors. Moreover, Kabat-Farr, Cortina, and Marchiondo (2016) found that negative emotions resulting from experienced incivility were associated with employee personal and professional outcomes, including reduced empowerment and self-esteem, greater work withdrawal and decreased job performance. Finally, Chi, Tsai, and Tseng (2013) found that negative emotional states mediated the relationship between experienced customer incivility and negative behavioral responses (i.e., sabotaging service).

I argue that individuals who experience unrelieved job stress and experienced incivility during the workday develop negative emotions that carry into the commute, and these negative emotions likely lead individuals to engage in aggressive- and potentially aggressive driving behaviors as a behavioral response. As such, I hypothesize that:

Hypothesis 4a: Negative emotions while driving will mediate the relationship between daily job stress and daily aggressive driving behaviors.

Hypothesis 4b: Negative emotions while driving will mediate the relationship between daily job stress and daily potentially aggressive driving behaviors.

Hypothesis 5a: Negative emotions while driving will mediate the relationship between daily experienced incivility and daily aggressive driving behaviors.

Hypothesis 5b: Negative emotions while driving will mediate the relationship between daily experienced incivility and daily potentially aggressive driving behaviors.

Psychological Contract Violation

Psychological contracts are often referred to in the organizational literature as foundational to employment relationships (Schein, 1965), and embedded within social exchange theory as this explicates the individual-organizational exchange relationship. Social exchange theory (Blau, 1964) suggests that individuals enter into relationships where there is a mutual expectation that behaviors will be reciprocated. If the behaviors exhibited by an individual are beneficial, then beneficial behaviors will be reciprocated by others. If the behaviors exhibited by an individual are detrimental, then detrimental behaviors are likely to be reciprocated by others. A psychological contract refers to an individual's system of beliefs, based on either expressed or implied commitments, regarding an exchange agreement with another individual (Rousseau, 1989). Extending this definition to the commute, a psychological contract while commuting involves the understanding between individuals that each party (i.e., driver) will follow the traffic rules and respect the other party.

Psychological contract theory suggests that the relationship between the employee and the organization is subjective. Medin, Ross, and Markman (2005) note that perceptions of psychological contracts are inherently dynamic and sensitive to context, indicating fluctuation. A breach of the psychological contract occurs when one party falls short in fulfilling their (perceived) promised obligations (Robinson & Rousseau, 1994). For the commute, a psychological contract breach occurs when an individual is perceived to violate the traffic rules

or disrespects the other party via actions such as tail-gating or not using a turn signal, for example.

Perceptions of psychological contract breach have been found to be related to a number of attitudinal and behavioral outcomes in the organizational literature. For example, perceptions of psychological contract breach are significantly, negatively associated with: job satisfaction (Robinson & Rousseau, 1994), organizational citizenship behaviors (OCBs; Restubog, Bordia, & Tang, 2006; Robinson & Morrison, 1995), and employee performance (Restubog et al., 2006). Moreover, perceptions of psychological contract breach have been shown to have significant, positive associations with CWBs (Johnson & O'Leary-Kelly, 2003), absenteeism (Deery, Iverson, & Walsh, 2006; Johnson & O'Leary-Kelly, 2003), and intentions to turnover (Robinson & Rousseau, 1994).

According to Morrison and Robinson (1997), perceived psychological contract breach is comprised of two root causes: reneging and incongruence. Reneging occurs when an individual knows an obligation exists between two (or more) parties, but knowingly fails to meet that obligation; while incongruence occurs when two (or more) individuals have a different understanding about the existence and nature of an obligation (Morrison & Robinson, 1997). Reneging is said to occur when an individual is either unable or unwilling to fulfill promised obligations; while incongruence occurs when individuals have differing schemas about the assumptions and interpretations of the obligations between them (Morrison & Robinson, 1997). Applying these concepts to the commuting context, reneging may occur when individuals believe that there is a known obligation that exists between drivers (i.e., perception of a psychological contract between drivers), and there is the perception that another party (i.e., driver) is unable or unwilling to fulfill their obligation that they will be courteous to other drivers

and follow the traffic rules. Incongruence may occur when individuals assume or interpret a broken obligation during the commuting experience as the result of a misunderstanding.

Psychological contract breach involves a cognitive appraisal process, as an individual seeks to understand and make sense of a felt discrepancy between an obligation and what was actually delivered. When that felt discrepancy involves an affective or emotional state following the perception of a contract breach, a perceived violation in the psychological contract has occurred (Morrison & Robinson, 1997). Specifically, perceived psychological contract violation refers to the intense feelings of anger and betrayal following the perception of a contract breach (Morrison & Robinson, 1997). Following a contract breach, there is an interpretation process, where individuals engage in attempting to understand what happened and attach meaning to the event (Wong & Weiner, 1981). Morrison and Robinson (1997) posit that it is the interpretation process by individuals that determines the intensity of the negative emotions that individuals will experience, and whether or not they will feel that a contract violation has occurred. When individuals perceive a breach in the psychological contract that they attribute to reneging, they experience stronger affective responses that influence attitudinal and behavioral outcomes. For example, Robinson and Morrison (2000) found that employees experienced more intense feelings of violation when perceived breach in the psychological contract was attributed to reneging. Furthermore, Chao, Cheung, and Wu (2011) found that when perceptions of psychological contract breach were attributed to reneging, there was a stronger, positive relationship with CWBs than when the perception of breach was attributed to incongruence. Extending this research to the commute context, it is logical to expect that employees who perceive a psychological contract breach attributed to reneging during the commute are more likely to feel that a contract violation has occurred. Indeed, research has shown that drivers who

attribute negative on-road events to others being incompetent or dangerous drivers have significantly more negative emotional responses (i.e., feeling a violation in the psychological contract has occurred) than those drivers who attribute others' behavior to mistakes (Lennon & Watson, 2015).

When one breaches a psychological contract and feels that a violation in the contract has occurred, this can lead to emotion-based behavioral responses, such as revenge-seeking. Revenge can be used as a means to restore equity or remedy perceived wrong (Aquino, Tripp, & Bies, 2001). For instance, Bordia, Restubog, and Tang (2008) found that perceptions of psychological contract violation mediated the relationship between breach and revenge motives, which in turn predicted workplace deviance (i.e., maladaptive workplace behaviors). Furthermore, Suazo (2009) found that psychological contract violation mediated the relationship between psychological contract breach and work-related behavioral outcomes. Seeking revenge during the commute when one has perceived a psychological contract violation may involve behavioral retaliation against another driver through engaging in aggressive- and potentially aggressive-driving behaviors. The person-specificity characteristic states that it is the individual's perceptions that will influence their subsequent attitudes and behaviors.

The frustration-aggression model (Dollard, Doob, Mowrer, Miller, & Sears, 1939) states that aggressive behaviors are triggered by frustrating behaviors, situations, or events, and that the aggressive behavior displayed will vary depending on these three factors. In the context of aggressive driving behaviors, drivers vary in how much frustration they tolerate in any given driving context. Furthermore, whether or not aggressive behavior is displayed while driving will be dependent on the perceived consequences of engaging in such behaviors. Research suggests that perceived anonymity while driving influences individual's propensity to engage in risky or

aggressive driving behaviors (Aronson, 1999; Ellison-Potter, Bell, & Deffenbacher, 2001; Green, 1994). Lastly, aggressive driving behaviors are more likely when the frustration experienced while driving is perceived as unfair or inappropriate. Lennon and Watson (2015) found that drivers who attributed others' driving actions as incompetent or dangerous endorsed more aggressive driving behavioral responses over those drivers who attributed others driving actions to mistakes. Extending this notion to the proposed research suggests that non-beneficial behaviors (i.e., aggressive- and potentially aggressive- driving behaviors) will be exhibited when individuals perceive a contract violation following a psychological contract breach during the commute. Thus, I hypothesize the following:

Hypothesis 6a: Perceived psychological contract violation during the commute will be positively associated with daily aggressive driving behaviors.

Hypothesis 6b: Perceived psychological contract violation during the commute will be positively associated with daily potentially aggressive driving behaviors.

The mediating role of perceived psychological contract violation. Furthermore, perceiving a psychological contract violation may be more likely if individuals are already in a heightened negative emotional state while driving. As stated, psychological contract violation is a highly emotional response to the feeling of contract breach which effects behavioral outcomes. Individuals experiencing negative emotional states are more likely to interpret stimuli more pessimistically and negatively (Watson & Clark, 1984). Negative emotional states have a priming effect, in that they influence individual's cognitions and the way they interpret events (Broadbent, 1971; Easterbrook, 1959; Eysenck, 1976). This suggests that individuals who are already in a negative emotional state while driving (i.e., as a result of unresolved job stress and experienced incivility) should be more likely to interpret that violations in the psychological

contract during their commutes have occurred. Negative emotions prime negative interpretations of events (i.e., violations in the psychological contract during the commute) thus eliciting detrimental behavioral responses (i.e., aggressive- and potentially aggressive- driving behaviors). As such, I hypothesize that:

> *Hypothesis 7a:* Perceived psychological contract violation during the commute will partially mediate the relationship between negative emotions while driving and daily aggressive driving behaviors.
>
> *Hypothesis 7b:* Perceived psychological contract violation during the commute will partially mediate the relationship between negative emotions while driving and daily potentially aggressive driving behaviors.

Methodology for Studying Daily Fluctuations

Much of the previous research regarding aggressive driving behaviors has relied on cross-sectional or multi-wave designs (approximately 2 or 3 time points), however the propensity to engage in aggressive driving behaviors may change on a day-to-day basis depending on the contextual factors described (i.e., daily job stress, experienced incivility, negative emotions, and perceptions of psychological contract violation). Given the dynamic nature of aggressive driving behaviors and the work- and non-work- related risk factors in the propensity to engage in such behaviors, there is a need to examine these variables at the daily level.

Researchers who study dynamic events advocate for the need to study such events at the level of the phenomenon. Dynamic psychological phenomena that can fluctuate on a daily basis should be examined via the use of daily diary methodology in order to appropriately capture the variance inherent in experiences that fluctuate on a daily basis. Furthermore, the use of daily diary methodology reduces bias and error that is characteristic in retrospective reporting of

experiences. Daily diary methods involve end-of-day sampling of participants for a predetermined time (e.g., five days). Thus, for the present study, the commute from work to home will be selected for examination using daily diary methodology.

Method

Participants

I recruited participants via Amazon's Mechanical Turk (MTurk). MTurk contains a repository of "workers" who complete Human Intelligence Tasks (HITs) for compensation. Evidence suggests that the nature of the sample supplied from MTurk is better and more representative of the population at large over convenience samples or those recruited from university participant pools (Paolacci, Chandler, & Ipeirotis, 2010). Only U.S. citizens with a 90% approval rate (meaning out of 100 HITs completed, they were compensated for at least 90), who had previously completed 100 or more tasks, were invited to take the screening survey. In addition, only respondents who were employed full-time (i.e., 35 or more hours per week) and commuted to work via private vehicle alone (i.e., they drove themselves to and from work) were eligible to participate in the current study. Two validation questions were embedded into each survey to ensure effortful responding. No participants failed to respond correctly to both of the validation questions. In all, 608 participants completed a screening survey, of which 153 met the study criteria for eligibility.

Survey response rates and demographics. Of the 153 participants who were sent a baseline survey, 140 participants completed it (response rate = 92%). Of the 140 participants who completed the baseline survey, 115 completed three or more daily surveys (response rate = 82%), and 96 completed all five daily surveys (response rate = 69%). Of the 115 participants who completed three or more daily surveys, six participants were excluded for indicating that

they worked less than 35 or more hours per week (as their response indicated on the baseline survey). Thus, of the 140 participants who completed the baseline survey, 109 were included in the survey analyses (response rate = 78%).

The majority of participants were white (74%), male (58%), and educated with at least a 4-year college degree (56%). The mean age was 35.6 years, with approximately 54% of participants married or living with a partner. Approximately 62% of participants reported having no children and 60% reported an income of at least $50,000. Participants were employed in a variety of occupations, including: management/business/financial (19%), professional (18%), and office administrative (18%). The average time employed with their company was 5.6 years, with 16% of participants reporting a tenure of 10 to 22 years.

App response rates and demographics. All participants who completed the baseline survey were also invited to participate in an additional, optional data collection that involved downloading a driving app (Life360) on their personal smart phone to passively collect objective indicators of several kinds of potentially aggressive driving behaviors. Of the 140 participants who completed the baseline survey, 72 left phone numbers indicating their willingness to participate in the app-based data collection (response rate = 51%). However, of the 72 participants who indicated their willingness to participate, only 39 participants downloaded the app (response rate = 54%). Of the 39 participants who downloaded the app, 31 submitted three or more days of daily data (response rate = 82%), and 23 participants submitted five days of daily data (response rate = 59%).

The majority of participants who participated in the app-based data collection were white (81%), female (52%), and educated with at least a 4-year college degree (68%). The mean age was 35.8 years, with approximately 61% of participants married or living with a partner.

Participants were employed in a variety of occupations, including: office administrative (32%), professional (19%), and management/business/financial (16%). The average time employed with their company was 5.9 years with 17% of participants reporting a tenure of 11 to 22 years.

Measures

Baseline survey. The baseline survey provided information needed to more fully describe the sample, as well as collect information on stable characteristics of participants and planned statistical control variables.

A priori control variables. Negative affect, driving anger, and trait anger were utilized as control variables. Both driving anger and trait anger are associated with aggressive driving behaviors, while negative affect may influence perceptions of job stress and experienced incivility due to the likelihood of being predisposed to a negative disposition.

Negative affect was assessed using five items from the 10-item short form of the Positive and Negative Affect Schedule (PANAS; Thompson, 2007). Items included the stem, "Indicate to what extent you generally feel on average…". An example item is "Nervous." Items were assessed along a 5-point frequency scale ranging from *1* (never) to *5* (very often). Items were coded such that higher scores indicated a greater degree of negative affect. Reliability was assessed via Cronbach's alpha (.83).

Driving anger was assessed with the 14-item short-form of the Driving Anger Scale (DAS; Deffenbacher, Oetting, & Lynch, 1994). The DAS assesses trait-like driving anger in response to situations that represent six dimensions: hostile gestures, illegal driving, police pressure, slow driving, discourtesy, and traffic obstructions. Items included the stem "Imagine that each of the situations described is actually happening to you. Please rate the amount of anger you feel as provoked by each of the following situations." An example item is "You are stuck in

a traffic jam." Items were assessed along a 5-point response scale ranging from *1* (not at all) to *5* (very much). Items were coded such that higher scores indicated a greater degree of driving anger. Reliability was assessed via Cronbach's alpha (.92).

Trait anger was assessed with the 10-item trait anger subscale of the State-Trait Anger Scale (STAS; Spielberger, Jacobs, Russell, & Crane, 1983). Items included the stem "Please respond to the following items as they relate to how you generally feel you are." An example item is "I am quick-tempered." Items were assessed along a 5-point frequency scale ranging from *1* (almost never) to *5* (almost always). Items were coded such that higher scores indicated a greater degree of trait anger. Reliability was assessed via Cronbach's alpha (.91).

Personal and Job Demographics. Personal demographics included: age, gender, marital status, number of children, primary childcare/dependent-care responsibilities, highest level of education completed, and five-digit home zip-code.

Job demographics included: job title, supervisory status, tenure in organization, opportunity for flextime, opportunity for telework, job status (e.g., full-time), working hours, and five-digit zip-code of work location.

Daily survey. All measures used were originally developed for cross-sectional research and thus, here, were adapted and piloted for daily diary use. Please see the Appendix for a list of measures and items that were included in the daily diary surveys.

Aggressive Driving Behaviors was assessed using an adapted version of the aggressive driving behaviors subscale of the Dula Dangerous Driving Index (DDDI; Dula & Ballard, 2003). The DDDI assesses aggressive, negative emotional, and risky driving behaviors. The aggressive driving behaviors subscale of the DDDI consists of six items. I altered the items to be past tense, as well as adapted the stem. An example, adapted item is "I flashed my headlights when I was

annoyed by another driver." Items included the stem, "Today during my commute from work to home…". Responses were assessed via a 5-point frequency format ranging from *1* (never) to *5* (very often). Items were coded such that higher scores indicated a greater degree of aggressive driving behaviors on the daily commute from work to home. Reliabilities were assessed via Cronbach's alpha and ranged from .76 - .90 across the five days of data collection.

Potentially Aggressive Driving Behaviors was assessed using 10 items from an adapted version of the 12-item risky driving behaviors subscale of the DDDI (Dula & Ballard, 2003). Item 5 (*I drove when I was mildly intoxicated or buzzed*) and item 10 (*I drove when I was drunk*) captured negligent rather than potentially aggressive driving behaviors, so they were not utilized as indicators of potentially aggressive driving behaviors. I altered the items to be past tense, as well as adapted the stem. An example, adapted item for potentially aggressive driving behaviors is "I weaved in an out of slower traffic." Items included the stem, "Today during my commute from work to home…". Responses were assessed via a 5-point frequency format ranging from *1* (never) to *5* (very often). Items were coded such that higher scores indicated a greater degree of potentially aggressive driving behaviors on the daily commute from work to home. Reliabilities were assessed via Cronbach's alpha and ranged from .82 - .92 across the five days of data collection.

Job stress was assessed using 14 items from an adapted version of the 15-item Job Stress in General Scale (Stanton, Balzer, Smith, Parra, & Ironson, 2001). Items contained the adapted stem, "Today, work felt…". An example item is "demanding". Items were assessed using an adapted four-point, Likert-type forced-choice response format ranging from *1* (strongly disagree) to *4* (strongly agree) and were reverse-coded such that higher scores indicated greater

perceptions of daily job stress. Reliabilities were assessed via Cronbach's alpha and ranged from .95 - .97 across the five days of data collection.

Experienced incivility was assessed using an adapted version of the six-item Workplace Incivility Scale (WIS; Cortina, Magley, Williams, & Langhout, 2001). Items were adapted to include first-person statements and contained the adapted stem, "Today, at work, a colleague or supervisor…". An example, adapted item is, "Put me down or was condescending to me." Items were assessed using an adapted, four-point, Likert-type forced-choice response format ranging from *1* (strongly disagree) to *4* (strongly agree). Items were coded such that higher scores indicated a greater degree of incivility experienced during the workday. Reliabilities were assessed via Cronbach's alpha and ranged from .91 - .95 across the five days of data collection.

Negative emotions while driving was assessed using seven items from an adapted version of the negative emotions while driving subscale of the DDDI (Dula & Ballard, 2003). The negative emotions while driving subscale of the DDDI consists of eight items. I altered the items to be past tense, as well as adapted the stem. An example item is "I drove when I was angry or upset." Items included the stem, "Today during my commute from work to home…". Responses were assessed via a 5-point frequency format ranging from *1* (never) to *5* (very often). Items were coded such that higher scores indicated a greater degree of negative emotions while driving on the daily commute from work to home. Reliabilities were assessed via Cronbach's alpha and ranged from .85 - .92 across the five days of data collection.

Psychological contract violation during the commute was assessed via an adapted version of the four-item violation subscale developed for use by Robinson and Morrison (2000). The stem and items were adapted to fit a daily commuting context. Items contained the adapted stem, "Today, during my commute from work to home…". An example, adapted item is "I felt

extremely frustrated by how I was treated by other drivers." Items were assessed using an adapted four-point, Likert-type forced-choice response format ranging from *1* (strongly disagree) to *4* (strongly agree). Items were coded such that higher scores indicated a greater degree of perceived psychological contract violation during the daily commute from work to home. Reliabilities were assessed via Cronbach's alpha and ranged from .87 - .94 across the five days of data collection.

Commuting demographics for the daily survey included travel speed disruptions, time spent commuting, and distance travelled. Travel speed disruptions were assessed via five items with an adapted stem for daily diary use from Novaco, Stokols, and Milanesi (1990). Participants were asked to indicate whether they experienced disruptions such as heavy traffic by responding either yes or no. Time spent commuting and distance traveled were open-ended response questions.

Objective driving behaviors. Objective driving behavior (i.e., objective indicators of potentially aggressive driving behaviors) data was collected via Life360 Driver Protect, an app-based platform that operates on both the Android and iOS systems (i.e., iPhone). Life360 Driver Protect is a location-based application that records trips and objective driving behavior indicators, such as high-speed instances, rapid acceleration, hard-braking, cell-phone use, and collisions.

High speed is tracked when the vehicle exceeded 75 mph. Over 75mph is considered a high-risk speed. High speed is recorded when it is measured for at least 30 seconds, so short bursts of speed were not recorded in the Life360 app. At the time of this study, the high-speed detection did not take into account the speed limit on the road that the vehicle was on at the time.

Rapid acceleration was identified when there was a sudden burst of speed in a short amount of time. The Life360 app uses a machine learning algorithm to rate a variety of accelerations as subjectively rapid depending on things like initial speed.

Hard braking was shown when the vehicle came to an abrupt stop or when the brakes were hit aggressively. In terms of speed, this is roughly equal to braking hard enough to slow the vehicle by 7 mph or more in one second.

Phone usage was detected by movement of the phone. Phone usage was not detected when the vehicle was stopped or if it was used with a hands-free device. The Life360 app does not detect actual calls or text messages. Phone usage represents negligent driving more so than aggressive- or potentially aggressive- driving behaviors, and as such, was not utilized as a variable of interest in the current study.

Procedure

Participants recruited from MTurk were screened in order to ensure they fit the study criteria for participating. All participants who completed the screening survey for participation in the study were given $0.25 and those who met eligibility criteria were invited to take a baseline survey. Email invitations to complete the baseline survey were sent to eligible participants following the screening process with an online link to the baseline survey embedded. The baseline survey was used to collect information on control variables, as well as participant personal, job-related, and commuting-related demographics, and took approximately 30 minutes to complete. Surveys were linked via participants' MTurk employee ID number, which was requested on all surveys. In addition, during the baseline survey, participants were asked to leave a personal cell phone number if they wished to concurrently participant in the optional, app-

based data collection portion of the study. For completing the baseline survey, participants were paid $10.

Participants who completed the baseline survey were invited to participate in the daily diary study, and those participants who left a cell phone number were invited to download the Life360 app in order to take part in the app-based data collection. Daily surveys and app-based data were collected for one working week (Monday through Friday).

Approximately one week after completing the baseline survey, participants began filling out once-daily surveys after arriving home from their evening commute from work. Presentation of items and measures were randomized each day, such that no one measure preceded another measure across the five days of study. Those participants who downloaded the Life360 app also began submitting their app-based data. Email reminders containing links to the surveys were sent to participants twice a day (one sent at 6pm Eastern Standard Time to remind participants of their needed survey responses and one sent between 9pm and 10pm Eastern Standard Time to remind participants who hadn't filled out the daily survey to please do so). Participants were paid $5 per daily survey, and those participants who participated in app-based data collection were paid $5 per day for successfully contributing to data collection. Participants who completed all five daily surveys were paid a $10 bonus. In addition, participants who successfully contributed to five days of app-based data collection were paid a $10 bonus.

Total possible compensation for survey-only participation in this study was $45.25. Total possible compensation for survey-and-app participation in this study was $80.25.

Results

Prior to conducting substantive analyses, preliminary analyses were conducted in order to examine the data for any patterns of missingness as well as examine the appropriateness of

including additional control variables. No patterns of missing data were noted and the data were assumed to be missing at random (MAR). Further, t-tests were conducted in order to determine if significant differences existed between those participants who completed fewer than three daily surveys and those who completed all five daily surveys. Results indicated no significant differences for participants on: age, race, education, marital status, occupation, or the study variables of interest.

Participant personal and commuting demographic variables (e.g., schedule control, age, gender, travel speed disruptions) were examined for their use as covariates in the survey- and app- based data models. Zero-order correlational analyses indicated that age should be included in the survey data models as covariates at level 2 due to significant correlations with the study outcomes of interest (i.e., aggressive- and potentially aggressive- driving behaviors) across the five days of daily diaries. Additionally, prior research (Burch, 2015) supported the potential use of travel speed disruptions as a covariate at level 1 (within-person). Zero-order correlational analyses indicated that travel speed disruptions should be included in the survey data models as a level 1 control due to a pattern of significant correlations with the research variables of interest across the five days of daily diaries. In addition to a priori specified controls at level 2 (i.e., driving anger, negative affect, and trait anger), the aggregate means for all level 1 substantive variables and age were modeled as controls on the between person level.

Examination of zero-order correlations for the app data indicated no patterns of significant correlations with the study outcome of interest (i.e., objective potentially aggressive driving behaviors). Therefore, for the models examined utilizing app-based data, no controls were utilized at level 1 and only the aggregate means for level 1 substantive variables were modeled as controls at level 2.

Exploratory Factor Analyses

Utilizing SPSS version 24.0 (IBM Corp., 2016), I examined the factor structure of potentially aggressive driving behaviors. I conducted an exploratory factor analysis (EFA) utilizing principal axis factoring with oblique rotation with the first day of daily diary data. I entered ten items from the risky driving subscale of the DDDI (Dula & Ballard, 2003) which yielded a two-factor solution, with items 1, 2, and 4 loading on one factor and items 3, 6, 8, 9, and 11 loading onto a second factor. Item 7 (*I felt it was my right to get where I needed to go as quickly as possible*) didn't load sufficiently (>.40) on either factor, and item 12 (*I felt that most traffic "laws" could be considered suggestions*) loaded equally on both factors. Both item 7 and item 12 were dropped from substantive analyses.

Confirmatory Factor Analyses

I conducted confirmatory factory analyses (CFA) on all substantive study variables of interest using the first day of daily diary data. All study variables were assessed via continuous scales and have been validated in previous research with the exception of potentially aggressive driving behaviors.

First, I examined the factor structure of potentially aggressive driving behaviors yielded by the EFA. The two-factor model fit the data adequately [χ^2 (19) = 50.61, $p < .001$; CFI = .93; TLI = .90; SRMR = .06]. When the degrees of freedom (df) for the model are small in conjunction with the small sample size, the RMSEA is not reported because it frequently points to a poor fitting model when indeed the model is properly specified (Kenny, Kaniskan, & McCoach, 2014).

Next, I examined the factor structure of aggressive driving behaviors, loading six items onto a latent aggressive driving variable. This model yielded a solution with poor fit [χ^2 (9) =

53.58, $p < .001$; CFI = .88; TLI = .81; SRMR = .08]. Factor loadings on the aggressive driving variable were sufficient (i.e., all items loaded >.55), however examination of the modification indices indicated that model fit would be greatly improved by correlating item four (*I deliberately used my car/truck to block drivers who tailgated me*) and item six (*I punished someone who cut me off*). Both item four and item six appeared to capture a deliberate punishment component, therefore it was logical to correlate these two items. Indeed, correlating the aforementioned items improved model fit [χ^2 (8) = 12.67, $p = .12$; CFI = .98; TLI = .98; SRMR = .03].

Furthermore, I confirmed the factor structure of negative emotional driving, loading seven items onto a latent negative emotional driving variable. This model yielded adequate fit [χ^2 (14) = 39.08, $p < .001$; CFI = .93; TLI = .89; SRMR = .06]. I also confirmed the factor structure of perceived psychological contract violation, incivility, and job stress. The CFA for perceived psychological contract violation yielded a solution with good fit [χ^2 (2) = 2.09, $p = .35$; CFI = 1.00; TLI = .99; SRMR = .02]. The CFA for incivility yielded a solution with adequate fit [χ^2 (9) = 24.68, $p = .003$; CFI = .96; TLI = .93; SRMR = .03]. Finally, I fit a two-factor structure for job stress with seven items loading onto the pressure subscale and seven items loading onto the threat subscale, which yielded a solution with poor fit [χ^2 (76) = 279.26, $p < .001$; CFI = .84; TLI = .81; SRMR = .07]. Examination of the modification indices indicated that fit would be improved by correlating item 4 (*calm*) and item 5 (*relaxed*) of the pressure subscale, which was reasonable given these two items were positively worded compared to the other five items of the job stress pressure subscale which were negatively worded. The resulting model yielded improved fit [χ^2 (75) = 223.23, $p < .001$; CFI = .89; TLI = .86; SRMR = .06].

Longitudinal Invariance Testing

I conducted longitudinal invariance testing to determine that the study constructs of interest were invariant over time, given that they were measured each day for five days. Each construct of interest (i.e., job stress, negative emotions while driving, and perceived psychological construct violation) was examined for configural invariance. Configural invariance estimates whether measures taken at different time points represent the same underlying construct (Ployhart & Vandenburg, 2010). Five days of data are unwieldy for most computer programs, MPlus included, therefore I chose three time-points representing the beginning, middle, and end of daily observations (days one, three, and five) to carry out the invariance testing over time, as recommended by Múthen (2011).

Prior to testing for configural invariance, parcels were created for constructs composed of more than four items to ensure that the models generated were identified given that models were produced from the level 2 (between person) sample size (i.e., $N = 109$). Therefore, incivility and negative emotions while driving were each comprised of three parcels. To examine configural invariance for job stress across timepoints, the composite scores for the two job stress subscales (i.e., pressure and threat) were utilized as indicators across each timepoint. To test for configural invariance for all study constructs of interest, the intercepts, factor loadings, and residual variances were free to vary, with the factor means fixed at zero for each time point. Standards to determine good model fit were used when appropriate (e.g., a non-significant χ^2, RMSEA <.05, CFI and TLI >.95, SRMR <.05).

For job stress, perceived psychological contract breach, and incivility, the initial configural invariance models fit well. The initial model for negative emotions while driving fit poorly. However, examination of the modification indices indicated that correlating parcel three across timepoints for negative emotions while driving would improve model fit. Parcel three was

composed of item 3 (*I considered the actions of other drivers to be inappropriate or "stupid"*) and item 6 (*I felt that passive drivers should learn how to drive or stay home*) which both contained an underlying cognitive appraisal component (i.e., other drivers actions were stupid and indicate they shouldn't be driving). Results for configural invariance testing are reported in Table 1.

Descriptive Analyses

Survey data. All descriptive analyses were conducted in SPSS version 24.0 (IBM Corp., 2016). The means, standard deviations, and correlations for all constructs of interest for each day are reported in Tables 2 – 6. Correlations are based on composite scores calculated for each construct. As can be seen by reviewing the tables, the daily study constructs of interest correlated significantly with the outcomes of interest (i.e., aggressive- and potentially aggressive- driving behaviors) across the four days of data collection. Interestingly, neither time nor distance travelled correlated significantly with outcomes of interest across the five days of data collection. Furthermore, the a priori statistical control variables (i.e., driving anger, negative affect, and trait anger) showed a somewhat consistent pattern of significant correlations with the study outcomes of interest, with the exception of day four.

App data. All descriptive analyses were conducted in SPSS version 24.0 (IBM Corp., 2016). The means, standard deviations, and correlations for all constructs of interest for each day are reported in Tables 7 – 11. Correlations are based on composite scores calculated for each construct. For objective indicators of potentially aggressive driving behaviors, the composite score was created by summing instances of hard braking, rapid acceleration, and speed to create an additive index. Higher values for objective indicators of potentially aggressive driving behaviors indicate greater degree of recorded potentially aggressive driving behaviors.

As can be seen by examining the correlation tables for the app dataset, daily study variables of interest did not show a consistent pattern of significant correlations with objective indicators of potentially aggressive driving behaviors. Of note, a priori specified control variables (i.e., driving anger, negative affect, and trait anger) exhibited small, non-significant negative correlations with objective indicators of potentially aggressive driving behaviors.

Tests of Hypotheses

Multilevel random coefficient modeling (MRCM) was utilized to test hypotheses due to the hierarchical nature of the data. Daily observations were nested within people for both the survey-based (level 1 N = 545; level 2 N = 109) and app-based (level 1 N = 155; level 2 N = 31) data. Variables included in the models were modeled as fixed effects. To examine Hypotheses four, five, and seven, Preacher, Zhang, and Zyphur's (2011) approach was utilized to estimate 1-1-1 mediations in multilevel modeling which reduces the bias that results from conflation of between- and within- person effects and produces better confidence interval coverage. Because indirect effects are often not normally distributed, it is suggested that they be examined via Bayes Credibility Intervals (Bayes CI) when conducting multilevel modeling (Bauer, Preacher, & Gil, 2006).

Prior to conducting analyses utilizing the computer program MPlus 7.3.1 (Muthén & Muthén, 1998-2012), unconditional models (intercepts only) were estimated for aggressive- and potentially aggressive- driving behaviors so that partitions of the total variance into variability at level 1 (day level) and level 2 (person-level) could be assessed.

In order to examine hypotheses, separate multilevel regression and mediation analyses were conducted in MPlus, with all variables treated as continuous. The control variable (i.e., travel speed disruptions) and the substantive predictor/mediator variables (i.e., job stress,

incivility, negative emotions while driving, and perceived psychological contract violation) at level 1 were person-mean centered. When variables are person-mean centered, the variance in the intercept term represents the within person variance in the outcome variable. In other words, person-mean centering reflects within-person variability only (Hofmann & Gavin, 1998). For example, within-person centered job stress scores indicate whether individuals feel more or less job stress than what they feel on average, representing daily fluctuations for that individual over time. The aggregate means for all level 1 substantive variables were modeled on the between-person level, or level 2. Doing this allows the within- and between- person variances to be partitioned cleanly and allows for the examination of the effects of daily fluctuations controlling for average experiences across individuals. The models tested were conditional, or random-intercepts models. Random-intercepts models indicate that there are mean-level differences between level 2 units (i.e., individuals) among the variables of interest.

As a reminder, for all models assessed utilizing survey data only, level 1 (within-person) controls consisted of travel speed disruptions, while level 2 (between-person) controls consisted of driving anger, negative affect, trait anger, age, and the aggregate means of the variables of interest. For models assessed with the app-based data, no controls were utilized at level 1, and only the aggregate means of the variables of interest were utilized as controls at level 2.

Survey data. The unconditional model for aggressive driving behaviors yielded significant ICC(1) = .53 and ICC(2) = .85 values at $p < .001$, indicating that observations within subjects are not independent and warrant the utilization of MRCM. Additionally, partitioning of the variance into variability at level 1 (46%) and level 2 (54%) was done. This indicates that there is sufficient variability from both the within- and between- parts of the model to warrant examination of substantive predictors. Likewise, the unconditional model for potentially

aggressive driving behaviors yielded significant ICC(1) = .57 and ICC(2) = .87 values at $p <$ .001, indicating that observations within subjects are not independent and warrant the utilization of MRCM. Partitioning of the variance into variability at level 1 (42%) and level 2 (58%) was also done, with results indicating that that there is sufficient variability from both the within- and between- parts of the model to warrant examination of substantive predictors.

Moreover, because mediation is hypothesized, following recommendations put forth by Mathieu and Taylor (2007), the ICC(1) and ICC(2) values were examined for the mediator variables (negative emotions while driving and perceived psychological contract violation). Negative emotions while driving exhibited sufficient between (54%) and within (46%) person variance. Additionally, the ICC(1) = .52 and ICC(2) = .84 values were significant ($p < .001$), again indicating that observations within subjects are not independent and thus warrant MRCM. The results were similar for perceived psychological contract violation, which exhibited sufficient between (46%) and within (54%) person variance [ICC(1) = .46 and ICC(2) = .81 values were significant ($p < .001$)], again indicating that observations within subjects are not independent and thus warrant MRCM.

App data. The unconditional model for objective indicators of potentially aggressive driving behaviors yielded significant ICC(1) = .44 and ICC(2) = .80 values at $p < .001$, indicating that observations within subjects are not independent and warrant the utilization of MRCM. Partitioning of the variance into variability at level 1 (44%) and level 2 (56%) was also done, with results indicating that that there is sufficient variability from both the within- and between- parts of the model to warrant examination of substantive predictors. Furthermore, negative emotions while driving exhibited sufficient between (63%) and within (38%) person variance. Additionally, the ICC(1) = .60 and ICC(2) = .88 values were significant ($p < .001$),

again indicating that observations within subjects are not independent and thus warrant MRCM. The results were similar for perceived psychological contract violation, which exhibited sufficient between (66%) and within (34%) person variance [ICC(1) = .33 and ICC(2) = .71 values were significant ($p < .001$)], again indicating that observations within subjects are not independent and thus warrant MRCM.

Survey results. Hypothesis 1 stated that daily job stress would be positively associated with daily (1a) aggressive- and (1b) potentially aggressive- driving behaviors. Results indicated support for hypothesis 1a ($\beta = .06$, $p = .006$), however hypothesis 1b was not supported ($\beta = .03$, $p = .109$). On days when employees experienced more job stress, they engaged in more aggressive driving behaviors during their work-to-home commutes. Approximately 3% of the variance in daily aggressive driving behaviors was explained by daily job stress; while approximately 2% of the variance in daily potentially aggressive driving behaviors was explained by daily job stress. Multilevel regression estimates for hypotheses 1a and 1b are reported in Table 12.

Hypothesis 2 stated that daily experienced workplace incivility would be positively associated with daily (2a) aggressive- and (2b) potentially aggressive- driving behaviors. Results indicated support for hypothesis 2a ($\beta = .14$, $p = .003$) and hypothesis 2b ($\beta = .18$, $p < .001$). On days when employees experienced more workplace incivility, they engaged in more aggressive- and potentially aggressive- driving behaviors during their work-to-home commutes. Approximately 5% of the variance in daily aggressive driving behaviors was explained by daily experienced workplace incivility; while approximately 5% of the variance in daily potentially aggressive driving behaviors was explained by daily experienced workplace incivility. Multilevel regression estimates for hypotheses 2a and 2b are reported in Table 13.

Hypothesis 3 stated that daily (3a) job stress and daily (3b) experienced workplace incivility would be positively associated with negative emotions while driving. Results indicated support for hypothesis 3a ($\beta = .11$, $p < .001$) and hypothesis 3b ($\beta = .13$, $p < .001$). On days when employees experienced more job stress, they experienced more negative emotions while driving. Additionally, on days when employees experienced more workplace incivility, they experienced more negative emotions while driving. Approximately 10% of the variance in daily negative emotions while driving was explained by daily job stress; while approximately 11% of the variance in daily negative emotions while driving was explained by daily experienced workplace incivility. Multilevel regression estimates for hypotheses 3a and 3b are reported in Table 14.

Hypothesis 4 stated that negative emotions while driving would mediate the relationship between daily job stress and (4a) aggressive- and (4b) potentially aggressive- driving behaviors. Hypothesis 4a was supported. Daily job stress significantly predicted negative emotions while driving ($\beta = .28$, $p < .001$), and daily negative emotions while driving significantly predicted daily aggressive driving behaviors ($\beta = .34$, $p < .001$). On days when employees experienced more job stress, they engaged in negative emotions while driving and subsequently engaged in aggressive driving behaviors. Approximately 12% of the variance in daily aggressive driving behaviors was accounted for by daily job stress and negative emotions while driving, while approximately 8% of the variance in daily negative emotions while driving was accounted for by daily job stress.

The indirect effect of daily job stress on daily aggressive driving behaviors through daily negative emotions while driving ($ab = .12$, $p < .001$) was examined via the calculation of confidence intervals. The indirect effect is considered significant if the confidence interval does not contain a zero-value. The raw intervals calculated did not contain a zero-value [CI(90)= .06,

.18] indicating the indirect effect is significant, supporting mediation. Bayes CI at the 5th and 95th percentile indicated (.08, .16) further support for the significance of the indirect effect, indicating that the data support the role of daily negative emotions while driving as a level 1 mediator between daily job stress and daily aggressive driving behaviors. Please see Table 15 for multilevel mediation estimates for hypothesis 4a.

Hypothesis 4b was not supported. While daily job stress significantly predicted negative emotions while driving ($\beta = .28$, $p < .001$), and daily negative emotions while driving significantly predicted daily potentially aggressive driving behaviors ($\beta = .34$, $p < .001$), no direct effect was found between daily job stress and daily potentially aggressive driving behaviors (see Hypothesis 1b results). While negative emotions while driving did not mediate the relationship between daily job stress and daily potentially aggressive driving behaviors, there was a significant indirect effect ($ab = .11$, $p = .001$). On days when employees experienced more job stress, they engaged in negative emotions while driving and having more negative emotions while driving was significantly associated with more potentially aggressive driving behaviors. Approximately 11% of the variance in daily potentially aggressive driving behaviors was accounted for by daily job stress and negative emotions while driving, while approximately 8% of the variance in daily negative emotions while driving was accounted for by daily job stress.

The raw confidence intervals around the indirect effect did not contain a zero-value [CI(90)= .06, .17] indicating the indirect effect is significant. The Bayes CI was also calculated; Bayes CI at the 5th and 95th percentile indicated (.07, .16) further support for the significance of the indirect effect. In summary, the data supports an indirect effect of daily job stress on potentially aggressive driving behaviors. Please see Table 16 for multilevel mediation estimates for hypothesis 4b.

Hypothesis 5 stated that negative emotions while driving would mediate the relationship between daily experienced workplace incivility and (5a) aggressive- and (5b) potentially aggressive- driving behaviors. Hypothesis 5a was supported. Daily workplace incivility significantly predicted negative emotions while driving ($\beta = .27$, $p < .001$), and negative emotions while driving significantly predicted daily aggressive driving behaviors ($\beta = .32$, $p < .001$). On days when employees experienced more workplace incivility, they engaged in negative emotions while driving and subsequently engaged in aggressive driving behaviors. Approximately 12% of the variance in daily aggressive driving behaviors was accounted for by daily experienced workplace incivility and negative emotions while driving, while approximately 7% of the variance in negative emotions while driving was accounted for by daily experienced workplace incivility.

The indirect effect of daily workplace incivility on daily aggressive driving behaviors through daily negative emotions while driving ($ab = .12$, $p = .001$) was examined via the calculation of confidence intervals. The raw intervals calculated did not contain a zero-value [CI(90)= .06, .17] indicating the indirect effect is significant, supporting mediation. Bayes CI at the 5^{th} and 95^{th} percentile indicated (.08, .16) further support for the significance of the indirect effect, indicating that the data support the role of daily negative emotions while driving as a level 1 mediator between daily experienced workplace incivility and daily aggressive driving behaviors. Please see Table 17 for multilevel mediation estimates for hypothesis 5a.

Likewise, hypothesis 5b was supported. Daily experienced workplace incivility significantly predicted negative emotions while driving ($\beta = .27$, $p < .001$), and negative emotions while driving significantly predicted daily potentially aggressive driving behaviors ($\beta = .30$, $p < .001$). On days when employees experienced more workplace incivility, they engaged in

negative emotions while driving and subsequently engaged in potentially aggressive driving behaviors. Approximately 12% of the variance in daily potentially aggressive driving behaviors was accounted for by daily experienced workplace incivility and negative emotions while driving, while approximately 7% of the variance in negative emotions while driving was accounted for by daily experienced workplace incivility.

The procedure for examining the indirect effects was repeated for hypothesis 5b. The indirect effect of daily experienced workplace incivility on daily potentially aggressive driving behaviors through negative emotions while driving (ab = .10, p = .003) was examined via the calculation of confidence intervals. The raw intervals calculated did not contain a zero-value [CI(90)= .05, .16] indicating the indirect effect is significant, supporting mediation. The Bayes CI was also calculated; Bayes CI at the 5^{th} and 95^{th} percentile indicated (.07, .14) further support for the significance of the indirect effect. In summary, the data provide empirical support for the role of negative emotions while driving as a partial level 1 mediator between daily experienced workplace incivility and daily potentially aggressive driving behaviors. Please see Table 18 for multilevel mediation estimates for hypothesis 5b.

Hypothesis 6 stated that perceived psychological contract violation during the commute would be positively associated with daily (6a) aggressive- and (6b) potentially aggressive-driving behaviors. Results indicated support for hypothesis 6a (β = .23, p <.001) and hypothesis 6b (β = .16, p <.001). On days when employees perceived a psychological contract violation during their work-to-home commutes, they engaged in more aggressive- and potentially aggressive- driving behaviors. Approximately 8% of the variance in daily aggressive driving behaviors was explained by perceived psychological contract violation during the commute; while approximately 4% of the variance in daily potentially aggressive driving behaviors was

explained by perceived psychological contract violation during the commute. Multilevel regression estimates for hypotheses 6a and 6b are reported in Table 19.

Hypothesis 7 stated that perceived psychological contract violation during the commute would mediate the relationship between negative emotions while driving and daily (7a) aggressive- and (7b) potentially aggressive- driving behaviors. Hypothesis 7a was supported. Negative emotions while driving significantly predicted perceived psychological contract violation during the commute ($\beta = .48$, $p < .001$), and perceived psychological contract violation during the commute significantly predicted daily aggressive driving behaviors ($\beta = .13$, $p = .001$). On days when employees experienced negative emotions while driving, they perceived psychological contract violations during their commutes and subsequently engaged in more aggressive driving behaviors. Approximately 13% of the variance in daily aggressive driving behaviors was accounted for by negative emotions while driving and perceived psychological contract violation during the commute, while approximately 23% of the variance in perceived psychological contract violation during the commute was accounted for by negative emotions while driving.

The indirect effect of negative emotions while driving on daily aggressive driving behaviors through perceived psychological contract violation during the commute ($ab = .06$, $p = .001$) was examined via the calculation of confidence intervals. The raw intervals calculated did not contain a zero-value [CI(90)= .03, .10] indicating the indirect effect is significant, supporting mediation. Bayes CI at the 5^{th} and 95^{th} percentile (.02, .10) indicated further support for the significance of the indirect effect, indicating that the data support the role of perceived psychological contract violation during the commute as a level 1 mediator between negative

emotions while driving and daily aggressive driving behaviors. Please see Table 20 for multilevel mediation estimates for hypothesis 7a.

On the other hand, hypothesis 7b was not supported. Negative emotions while driving significantly predicted perceived psychological contract violation during the commute (β = .48, *p* <.001), however perceived psychological contract violation during the commute did not subsequently predict daily potentially aggressive driving behaviors (β = .05, *p* =.220). Furthermore, the indirect effect of negative emotions while driving on daily potentially aggressive driving behaviors through perceived psychological contract violation during the commute was not significant (*ab* = .02, *p* = .184). The raw intervals calculated contained a zero-value [CI(90)= -0.01, .05], and the Bayes CI at the 5th and 95th percentile (-0.02, .06) indicated no support for the significance of the indirect effect. Approximately 11% of the variance in daily potentially aggressive driving behaviors was accounted for by negative emotions while driving and perceived psychological contract violation during the commute, while approximately 23% of the variance in perceived psychological contract violation during the commute was accounted for by negative emotions while driving. Please see Table 21 for multilevel mediation estimates for hypothesis 7b.

App results. Results utilizing objective indicators of potentially aggressive driving behaviors are reported in Tables 22 – 28. Two of the seven hypothesized relationships were supported, and one was partially supported. Hypotheses 1b, 2b, and 3a were not supported. There was no direct effect of daily job stress (1b; β = .10, *p* =.347) or experienced incivility (2b; β = .10, *p* =.344) on objective indicators of potentially aggressive driving behaviors. Likewise, there was no direct effect of daily job stress on negative emotions while driving (3a; β = .03, *p* =.614). However, hypothesis 3b (β = .12, *p* =.037) was supported. Results indicated that on days when

employees experience more workplace incivility they engage in objectively-assessed potentially aggressive driving behaviors. Approximately 2% of the variance in objective indicators of potentially aggressive driving behaviors was explained by daily experienced workplace incivility. For multilevel regression estimates for hypothesis 3b (app data), please see Table 24.

Furthermore, hypotheses 4b and 5b were not supported. Negative emotions while driving did not significantly mediate the relationship between daily job stress (4b; (*ab* = -0.003, *p* = .616) and objective indicators of potentially aggressive driving behaviors. Similarly, negative emotions while driving did not significantly mediate the relationship between daily experienced incivility (5b; *ab* = .01, *p* = .416) and objective indicators of potentially aggressive driving behaviors.

On the other hand, both hypotheses 6b and 7b were supported. On days when employees perceived a psychological contract violation during their work-to-home commutes, they engaged in more objective indicators of potentially aggressive driving behaviors (β = .24, *p* =.019). Approximately 6% of the variance in objectively-assessed potentially aggressive driving behaviors was accounted for by perceived psychological contract violation during the commute. Multilevel regression estimates for hypothesis 6b (app data) is reported in Table 27. Furthermore, results indicate that negative emotions while driving significantly predicted perceived psychological contract violation during the commute (β = .52, *p* <.001), and perceived psychological contract violation during the commute significantly predicted objective indicators of potentially aggressive driving behaviors (β = .27, *p* =.014), supporting Hypothesis 7b. On days when employees experienced negative emotions while driving, they perceived psychological contract violations during their commutes and subsequently engaged in objective indicators of potentially aggressive driving behaviors. Approximately 6% of the variance in objective potentially aggressive driving behaviors was accounted for by negative emotions while driving

and perceived psychological contract violation during the commute, while approximately 28% of the variance in perceived psychological contract violation during the commute was accounted for by negative emotions while driving.

The indirect effect of negative emotions while driving on daily objective indicators of potentially aggressive driving behaviors through perceived psychological contract violation during the commute (*ab* = .38, *p* =.002) was examined via the calculation of confidence intervals. The raw intervals calculated did not contain a zero-value [CI(90)= .18, .59] indicating the indirect effect is significant, supporting mediation. Bayes CI at the 5^{th} and 95^{th} percentile indicated (.16, .64) further support for the significance of the indirect effect, indicating that the data support the role of perceived psychological contract violation during the commute as a level 1 mediator between negative emotions while driving and objective indicators of potentially aggressive driving behaviors. Please see Table 28 for multilevel mediation estimates for hypothesis 7b (app data).

Supplemental Analyses

Several supplemental analyses were conducted with the survey-only data set. Given power restrictions due to sample size, these analyses were not conducted with the app-based data set.

Full path model. Although not hypothesized, I tested a full path model based on the conceptual model in Figure 1, with aggressive driving behaviors serving as the outcome of interest. Tests of hypotheses indicated no direct effect of daily job stress on daily potentially aggressive driving behaviors (hypothesis 1b). Additionally, there was no mediation of daily job stress on daily potentially aggressive driving behaviors via negative emotions while driving (hypothesis 4b); nor was there a mediation of negative emotions while driving on daily

potentially aggressive driving behaviors via perceived psychological contract violation during the commute (hypothesis 7b). As such, I did not utilize potentially aggressive driving behaviors as an outcome in analysis of the full path model.

All level 1 variables were person-mean centered so as to reflect only daily fluctuations within individuals. The aggregate means of the variables of interest, along with age, driving anger, negative affect, and trait anger were utilized as controls at level 2, with travel speed disruptions utilized as a control at level 1.

Results indicated that daily job stress ($\beta = .25$, $p < .001$) and experienced workplace incivility ($\beta = .23$, $p < .001$) significantly predicted negative emotions while driving, and negative emotions while driving, in turn, significantly predicted daily aggressive driving behaviors ($\beta = .28$, $p < .001$). The indirect effect of job stress and experienced incivility on aggressive driving behaviors through negative emotions while driving was significant ($ab = .09$, $p = .001$). Finally, negative emotions while driving significantly predicted perceived psychological contract violation during the commute ($\beta = .48$, $p < .001$), and perceived psychological contract violation during the commute significantly predicted daily aggressive driving behaviors ($\beta = .13$, $p = .001$). The direct effect of negative emotions while driving on daily aggressive driving behaviors remained significant with the inclusion of perceived psychological contract violation during the commute in the model, indicating partial mediation on the second leg. In addition, the indirect effect of negative emotions while driving on daily aggressive driving behaviors through perceived psychological contract violation during the commute was significant ($cd = .06$, $p = .001$).

The raw confidence intervals did not contain a zero value for either indirect effect [$CI_{ab}(90) = .05, .13$; $CI_{cd}(90) = .03, .09$], supporting the mediations. Bayes CI at the 5^{th} and 95^{th}

percentile ($Bayes_{ab}$ = .06, .12; $Bayes_{cd}$ = .02, .10) indicated further support for the significance of the indirect effects, indicating that the data support the roles of negative emotions while driving and perceived psychological contract violation during the commute as level 1 mediators between daily job stress and experienced incivility and daily aggressive driving behaviors. Please see Figure 2 for results.

The fit of the full model was somewhat poor. However, it should be noted that parsing out model fit at both the within- and between- levels is problematic, as the model fit of level 2 (the between level) is largely driven by the sample size and fit at level 1. As such, the fit of the model examined may not accurately reflect the model specified.

Direct effects at level 2. Prior research has found that males are significantly more likely to engage in aggressive- and potentially aggressive- driving behaviors (e.g., Haje & Symbaluk, 2014; Sullman et al., 2014; Sullman et al., 2013). Therefore, I sought to examine the effects of gender on aggressive- and potentially aggressive- driving behaviors during employees' work-to-home commutes. Prior to conducting analyses, I dummy-coded gender so that males had a value of "1" and females a value of "0." Controlling for age, driving anger, negative affect, and trait anger at level 2 and travel speed disruptions at level 1, results indicated that males are not more likely to engage in aggressive- (β = .11, p =.07) and potentially aggressive- (β = .13, p =.057) driving behaviors.

Furthermore, vehicles can also be used as symbols of power and status. There is a popular stereotype that individuals who drive vehicles associated with power and status (e.g., Infiniti, Mercedes, BMW) are more likely to engage in aggressive- and potentially aggressive-driving behaviors. Therefore, I coded participants' responses to the make and model of the vehicle they drove and utilized that data to investigate whether employees who drove typical

power-and-status symbol vehicles engaged in significantly more aggressive- and potentially aggressive- driving behaviors. Controlling for driving anger, negative affect, trait anger, and age at level 2 and travel speed disruptions at level 1, results indicate that employees who drive "power and status" vehicles do not engage in significantly more aggressive- ($\beta = .05$, $p = .544$) or potentially aggressive- ($\beta = .001$, $p = .981$) driving behaviors. For results of supplemental analyses examining direct effects, please see Table 29.

Interaction effects. Finally, I investigated whether perceived psychological contract violation during the commute moderated the relationship between negative emotions while driving and daily aggressive- and potentially aggressive- driving behaviors. Prior to examining the moderating effects, variables at level 1 were person-mean centered and interaction terms were created. In addition, level 1 controls (i.e., travel speed disruptions) were person-mean centered and level 2 controls (i.e., driving anger, negative affect, trait anger, aggregate means of substantive variables) were grand-mean centered, with the exception of age. I conducted two multilevel regressions, one with daily aggressive driving behaviors serving as the outcome of interest, and one with daily potentially aggressive driving behaviors serving as the outcome of interest. First, control variables were regressed onto aggressive- and potentially aggressive-driving behaviors at level 1 and level 2, then negative emotions while driving, perceived psychological contract violation during the commute, and their interaction term was also regressed on aggressive- and potentially aggressive- driving behaviors at level 1. Results indicate support for the interaction on daily aggressive driving behaviors ($\beta = .15$, $p = .002$). However, the interaction on daily potentially aggressive driving behaviors ($\beta = .16$, $p = .06$) was not significant. Please see Table 30 for results.

In order to understand the nature of the interaction, I utilized Preacher, Curran, & Bauer's (2006) tool for calculating the simple slopes for 2-way interactions with multilevel modeling. Results indicate that the slopes are significant at both the lower bound (t = -2.23, p < .05), and upper bound (t = 2.22, p <.05). Figure 3 displays a plot of the interaction for aggressive driving behaviors.

Discussion

This study sought to examine the influence of work on employees' daily aggressive- and potentially aggressive- driving behaviors, as well as understand the mechanisms that transmit the spillover of workplace attitudes and experiences into the commute to impact employees' driving behaviors. I accomplished this through the use of daily diary methodology to understand the dynamics of these relationships. I explored the impact that daily job stress and experienced workplace incivility can have on employee's aggressive- and potentially aggressive- driving behaviors during the work-to-home commute via the explanatory mechanisms of negative emotions while driving and perceived psychological contract violation during the commute. While past research has examined factors that influence aggressive driving behaviors, much of this past research has focused on *who* the driver is rather than on *why* people engage in aggressive driving behaviors (e.g., Shinar, 1998). Furthermore, as stated, employees as a class of drivers commuting between work and home are an ignored population in the aggressive driving literature.

I obtained data from full-time employees commuting to and from work via a private vehicle alone through two mediums, daily diary survey methodology and through the Life360 mobile application to capture objective indicators of potentially aggressive driving behaviors. There were large sample size differences in the survey- (i.e., 545 observations nested in 109

individuals) and app-based- (i.e., 155 observations nested in 31 individuals) samples and therefore, a different pattern of results emerged for each sample. As such, I will discuss results obtained from each sample in turn. Please see Table 31 for a recap of supported hypotheses obtained from the survey-only, and app-based, datasets.

Survey Results

I found nearly full support for all hypotheses based on analyses of the survey data. Results indicate that on days when employees experience more job stress and incivility in the workplace, they engage in more aggressive driving behaviors during their work-to-home commutes. Results also support that on days when employees experience more workplace incivility they engage in more potentially aggressive driving behaviors, however there was no support for a similar direct relationship between daily job stress and daily potentially aggressive driving behaviors. Instead, the direct effects of daily job stress and experienced incivility on daily aggressive driving behaviors were fully mediated by negative emotions while driving. In addition, negative emotions while driving partially mediated the relationship between experienced workplace incivility and potentially aggressive driving behaviors. On the other hand, negative emotions while driving did not mediate the relationship between daily job stress and daily potentially aggressive driving behaviors. Interestingly, there was an indirect effect between daily job stress and daily potentially aggressive driving behaviors. Results further indicated that perceived psychological contract violation during the commute exhibits direct effects with both aggressive- and potentially aggressive- driving behaviors. However, perceived psychological contract violation during the commute was found to partially mediate the relationship between negative emotions while driving and daily aggressive driving behaviors, but

it was not found to mediate the relationship between negative emotions while driving and daily potentially aggressive driving behaviors.

In sum, the bulk of hypothesized relationships were supported. Of note is that the most consistent set of results were supported utilizing daily aggressive driving behaviors as the outcome variable of interest, less so with daily potentially aggressive driving behaviors. This could be due to the fact that potentially aggressive driving behaviors encompass a more diverse set of behaviors, and therefore are likely associated with many other precipitating factors, while aggressive driving behaviors are more distinct.

Although not hypothesized, I also examined the full path model utilizing aggressive driving behaviors as the outcome of interest and found full support at the daily level (level 1) for the conceptual model presented in Figure 1. I conducted a number of additional supplemental analyses and found some interesting results. First, results did not support the notion that men engage in significantly more aggressive- and potentially aggressive- driving behaviors during their work-to-home commutes, contradicting past research that found gender effects (Haje & Symbaluk, 2014; Sullman et al., 2013; Sullman et al., 2014; Wickens et al., 2011). Having a vehicle associated with power and status was also not associated with more aggressive- and potentially aggressive- driving behaviors.

Moreover, results of supplemental analyses indicate that perceived psychological contract violation during the commute exacerbates the effect of negative emotions while driving on daily aggressive driving behaviors. Put another way, the propensity to engage in more aggressive driving behaviors during the work-to-home commute is greater on days when employees experience negative emotions while driving and also perceive a psychological contract violation during their commute. This could indicate that employees are more likely to retaliate (i.e.,

engage in aggressive driving behaviors) when they perceive a violation in the psychological contract has been committed during the commute and they are already in a heightened negative emotional state. If one perceives a psychological contract violation during the commute has occurred, then they are more likely to act on negative emotions that spill over from work, and engage in aggressive driving behaviors.

App Results

Utilizing the truncated survey- and app-based- sample, I found less support for my hypothesized relationships. Results indicated that on days when employees experience workplace incivility, they engage in more negative emotions while driving. Results also indicate that on days when employees perceive a psychological contract violation during the commute, they engage in objectively assessed indicators of daily potentially aggressive driving behaviors, and that perceived psychological contract violation during the commute fully mediates the relationship between negative emotions while driving and objectively assessed indicators of daily potentially aggressive driving behaviors. However, no other significant relationships were found among the study variables of interest. This is likely due to a number of factors, including reduced power at level 1 and level 2 compared with the survey-only sample, as well as the fact that the outcome indicators assessed via the app captured somewhat different behaviors than what was captured by the potentially aggressive driving behaviors survey measure.

Theoretical Implications

Utilizing spillover theory and affective- and emotion- focused theoretical frameworks, my results support the influence of work attitudes and experiences on employees' aggressive- and potentially aggressive- driving behaviors during the work-to-home commute. Rather than focus on the *who* of aggressive driving behaviors, this study was a response to researchers who

have called for a focus on the *why* and *when*, specifically, a focus on the contextual factors that predisposes a class of drivers (i.e., employees) to engage in aggressive- and potentially aggressive- driving behaviors. Moreover, this study supports the notion that spillover of attitudes and behaviors not only occurs between work and home, but also impacts the *transition* between the work and non-work domains. In other words, this research contributes to a small, but growing body of evidence that work influences employees' behavior ***outside*** the workplace, specifically during the commute (i.e., Burch, 2015; Turgeman-Lupo & Biron, 2017). Not only that, this study expands the emotion-centered model of work behaviors to include the extension of emotions into the commute, as well as counterproductive behaviors outside the workplace (i.e., aggressive- and potentially aggressive- driving behaviors). While the commute may be a more appropriate outlet for negative emotions and counterproductive behaviors, the spillover of workplace attitudes and experiences into the commute has the potential to be disastrous if it contributes to vehicular accidents.

Furthermore, the present research builds on psychological contract theory through the application and extension of psychological contracts to employees' commutes. Psychological contracts have been primarily discussed in the employment literature for decades, however the concept of the psychological contract is rooted in the notion of social exchange relationships, which aren't unique to the employment situation (Cullinane & Dunden, 2006). Cullinane and Dunden (2006) note that the concept of the psychological contract has the potential to shed light on neglected micro and socio-cognitive processes that take place between individuals. Researchers (Galovski et al., 2006) have noted that individuals engage in aggressive- and potentially aggressive- driving behaviors even though they may lack the dispositional characteristics (i.e., driving anger, trait anger) that have been traditionally focused on in the

aggressive driving literature. As such, the extension of psychological contract theory in the present study to the commute has the potential to influence researchers in thinking about the mechanisms that may predispose an individual to engage in aggressive- and potentially aggressive- driving behaviors.

Strengths and Limitations

The current study has a number of important strengths, including the examination of an overlooked aspect in the work-life and aggressive driving literatures, namely that work influences aggressive- and potentially aggressive- driving behaviors. The collection of data on variables of interest on the same days they occur minimizes retrospective bias and error that can occur at the interindividual level and also allows for the modeling of dynamic psychological phenomena. Moreover, common method effects are reduced due to the collection of data via survey-based methods and the collection of objective driving indicators via a mobile application (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Finally, Feldman and Lynch, Jr. (1998) notes that the content of preceding questions on surveys and their ordering can affect observed relationships among measured constructs of interest. Given this knowledge, I randomized the order of questions and items on each daily survey so that no one construct preceded another across all five days of measurement, limiting order effects in the relationships of interest. Last, in response to the call to researchers (Galovski et al., 2006) for more precision in assessing aggressive (and potentially aggressive) driving behaviors, I utilized adapted, previously validated self-report instruments, incorporated the use of observational methods in assessing aggressive (and potentially aggressive) driving behaviors, and sampled over a different driving time period (i.e., daily).

Despite the strengths in the current study, there are limitations. First, I did not assess other potential influences on aggressive- and potentially aggressive- driving behaviors (e.g., hostility, dysfunctional impulsivity, sensation-seeking) which may or may not influence hypothesized relationships. Furthermore, all constructs (i.e., antecedents, mediators, and outcomes) were measured each day during each survey and app collection time, making the ability to support causal inference difficult due to the lack of temporal separation. Temporal separation of constructs is necessary for determining the directionality of the relationships hypothesized. Along the same vein, this study was carried out with intensive longitudinal methods based on correlational data, so the lagged relationships are potentially reflective of Granger causality, where the within-person predictive relationships examined may or may not represent a causal mechanism (Eichler, 2012; Hamaker & Wichers, 2017). The bulk of the data is self-report, so there is the potential that participants were not entirely truthful in their responding, potentially impacting the validity of the study. Moreover, my sample lacked diversity [e.g., ethnic, working status (part-time, gig economy)], which is not representative of the U.S. commuting population at large.

Furthermore, there is the possibility of a "lag problem" between the relationships of interest. In other words, the lagged relationships between job stress and negative emotions while driving, for example, is dependent on the interval used to assess these constructs (Hamaker & Wichers, 2017). Just because I measured each construct every day does not mean that the variables exert an influence on each other only at this interval. For example, if employees do not engage in recovery in-between work periods, job stress has the potential to keep building, with the possibility of exerting a cumulative and non-linear effect on negative emotions if that job stress is unrelieved via recovery mechanisms. On the other hand, my focus was more on the

immediate effects of emotions on in-the-moment behaviors (i.e., aggressive- and potentially aggressive- driving behaviors).

Finally, there was a lack of support for hypotheses utilizing the objective indicators of potentially aggressive driving behaviors. The sample size for the app-based data was significantly smaller than the larger, survey-based sample thus limiting the power to detect the same patterns of significance found with the survey-based data. What's more, there is a paucity of mobile applications available for use in research, therefore I was limited in my choice of mobile application for the present study to an app marketed for family purposes (i.e., parents monitoring the driving behaviors of their young family members).

Future Research

Given the limitations of the current study, future research could benefit from determining the temporal ordering of constructs in order to better determine directionality. This could be accomplished through the utilization of a lagged design, whereby information about the mediating relationships is collected in a temporal sequence. For example, work-related attitudes and experiences could be collected at work, prior to commuting home, skin conductance could be utilized to assess emotion (heightened negative emotional states are associated with greater conductance), while objective indicators of driving behaviors could be assessed via a mobile application. This would represent an essential step in moving from prediction and description to a causal interpretation of within-person relationships. In addition, the development of a mobile application to better assess objective driving indicators for use in research aimed at commuters' behaviors is needed.

Given the lack of definitional clarity on what constitutes aggressive driving behaviors, future research should seek to more fully understand and develop this construct. This can be

accomplished through the use of daily diary or episodic sampling methodology whereby aggressive- and potentially aggressive- driving behaviors are assessed via objective- and survey-based methods that also includes a line of questioning that taps into the motivation to engage in such behaviors. Importantly, do people who engage in aggressive- and potentially aggressive-driving behaviors *intend* to do so? Is there prior cognition to support the intention in the choice of behaviors?

While my research supports an understanding of contextual factors that influence aggressive- and potentially aggressive- driving behaviors in employees commuting from work-to-home, there are likely other variables that influence the spillover of work into the commute. For example, abusive supervision may influence aggressive- and potentially aggressive- driving behaviors in employees commuting between work and home. Prior research supports the influence of abusive supervision on employees' commuting safety behaviors (Turgeman-Lupo & Biron, 2017). Indeed, given the evidence that experienced workplace incivility influences aggressive- and potentially aggressive- driving behaviors, it is logical to expect that experiencing abusive supervision in the workplace may elicit a similar pattern of effects. Unfortunately, the incivility measure used in the present study did not differentiate incivility based on source. Another workplace-originating attitude that likely spills over to impact behaviors during the commute is emotional strain. Future research should seek to understand other workplace attitudes and experiences that elicit effects on the behaviors employees engage in during the commute.

Furthermore, there are other possible mechanisms that could facilitate the spillover of work into the commute to impact behaviors. For example, if employees are experiencing job stress and incivility during the workday, it could be that these experiences influence the

propensity to engage in work-related rumination. Engaging in work-related rumination that originates from attitudes and experiences in the workplace may facilitate the spillover of emotions into the commute, thus impacting subsequent behavioral responses. Future research could benefit from exploring other mechanisms that facilitate spillover into employees' commutes.

Similarly, it could be that perceiving a psychological contract violation during the commute influences rumination during the commute. As stated, psychological contract violation is an intense emotional response to the perception that a psychological contract has been breached (Morrison & Robinson, 1997). If one perceives that a psychological contract violation has occurred during the commute, they may be more likely to ruminate about the experience after arriving home, potentially impacting one's at-home mood and ability to engage in recovery processes.

Moreover, I only examined one direction of the commute for employees, the work-to-home commute. However, similar patterns of relationships may be evident for employees engaging in the home-to-work commute. It is likely that home-based attitudes and experiences spillover into the home-to-work commute for employees impacting aggressive- and potentially aggressive- driving behaviors, and subsequent workplace attitudes and experiences. Prior research has found that strain experienced during the morning commute has a negative impact on employees' self-regulation at work, and that family strain exacerbated this effect (Zhou, Wang, Chang, Liu, Zhan, & Shi, 2017). Therefore, it is logical to expect that family strain may spillover to impact aggressive- and potentially- aggressive driving behaviors during the home-to-work commute, which may further elicit effects during the workday. This and other research questions should be explored in more detail.

Practical Implications

This study points to the impact that daily job attitudes and experiences can have on one's behaviors during the commute, with the potential for detrimental consequences. Indeed, employees engaging in aggressive- and potentially aggressive- driving behaviors during their commutes are at an increased risk of accidents, which may result in injury, or worse, fatality. Thus, engaging in aggressive- and potentially aggressive- driving behaviors may not only impact employees and their families, but also impact their organizations, which could see an increase in healthcare costs as well as lost productivity and absenteeism. It has been noted that occupational stress is reaching an epidemic in the modern workplace (Weinberg & Cooper, 2012); and despite government legislation and organizational policies to promote respectful workplaces, incivility remains a frequent occurrence in the workplace. Thus, organizations should seek to limit job stress for employees and tolerance of uncivil behaviors. There are a number of ways to accomplish the aforementioned.

Organizations should seek to understand and ameliorate the factors that contribute to employees' job stress. Surveying one's employee population and requesting feedback on such factors (e.g., resource depletion) is the first step to addressing and combatting job stress in the workplace. One common contributor to stress in any occupation is time-pressure. Therefore, organizations should let their employees engage in job crafting, where employees create processes that limit the build-up of stress in their daily work routines. Organizations should also seek to increase the time-management skills of employees through employee workshops and skills-training. In addition, research suggests that social support in the workplace may buffer the impact of job stress on negative employee and health outcomes (e.g., Balducci et al., 2011). As

such, supporting relationship-building within the workplace may be effective in limiting the build-up of stress on the job throughout the workday.

Research suggests that an environment that emphasizes positive norms for civility is associated with lower supervisor- and coworker- enacted incivility four months later (Walsh, Magley, Reeves, Davies-Schrils, Marmet, & Gallus, 2012). Furthermore, perceptions of emotional and organizational job support buffer the effect of incivility on mental and physical health outcomes (Miner et al., 2012). Therefore, creating an environment that emphasizes intolerance of uncivil behaviors is necessary to any organization's health and employee functioning.

The determination that job stress and experienced workplace incivility spills over into the commute to impact employees' aggressive- and potentially aggressive- driving behaviors is the first step in designing interventions efforts aimed at reducing this spillover. Meta-analytic evidence suggests that mindfulness-based stress reduction (MBSR) shows promise as a stress-reductive technique that is relatively cost-effective (Chiesa & Serretti, 2009; Grossman, Neimann, Schmidt, & Walach, 2004). MBSR is a group-intervention program that focuses on the acquisition of mindful awareness that includes awareness of physical sensations, perceptions, affective states, thoughts, and imagery in reducing stressful states, with the potential for long-term health benefits. Other interventions include those based on skills programs and those based on cognitive-behavioral techniques. Meta-analytic evidence suggests that interventions based on skills programs and cognitive-behavioral techniques in the manufacturing industry leads to improvement in psychological well-being and general health, and decreases in stress reactivity (Riva & Chinyio, 2018). Another intervention technique that shows promise is in building positive resources of employees. Research supports that engaging in positive reflection of daily

experiences at work leads to reduced stress and improved health of employees (Bono, Glomb, Shen, Kim, & Kloch, 2013). If employees were given the opportunity to positively reflect on their workday prior to leaving their places of employment, this could lead to a reduction in the likelihood of carrying negative emotions originating from job stress and uncivil workplace experiences into the commute.

Indeed, research suggests that team-based interventions reduce supervisor-perpetrated incivility, improving work outcomes for employees (Leiter, Laschinger, Day, & Oore, 2011; Leiter, Day, Oore, & Laschinger, 2012; Spence Laschinger, Leiter, Day, Gilin-Oore, & Mackinnon, 2012). The Civility, Respect, and Engagement in the Workforce (CREW) intervention technique is aimed at increasing civility in the workplace through employee-participatory approaches in identifying strengths and weaknesses regarding civil workplace behaviors and designing and implementing intervention efforts to curb uncivil behaviors (Osatuke, Moore, Ward, Dyrenforth, & Belton, 2009). The CREW technique shows promise in helping organizations to create norms around civility and improve the culture around civility in the workplace.

Conclusion

Research in the work-life interface has largely ignored the potential spillover of work- and home- based attitudes and experiences into the transition time between the work and non-work domains, which for many constitutes the commute. However, there is a small, but growing body of evidence that emphasizes this transition time should not be neglected, and that indeed work impacts behaviors of employees during the commute, often in detrimental ways, and through a variety of pathways. It has been noted that job stress accounts for most of the psycho-emotional disorders causing absence and inability to work (Tetrick & Winslow, 2015), and is an

important component in the etiology and prognosis of a number of diseases (Cooper & Marshall, 2013). Moreover, incivility has been postulated to cost $14,000 per employee annually due to impacts on project delays and cognitive distraction, with at least 50% of employees experiencing incivility at least weekly (Porath & Pearson, 2013). Given this information, and the evidence produced by the present study, aggressive driving behaviors should be classified as a risk factor associated with daily job stress and experienced incivility in the workplace due to their impact on negative emotions while driving and how that accentuates the perception of violations in the psychological contract during the commute.

In utilizing a daily diary approach with the convergent support of objective indicators of driving behaviors, this dissertation research shed light on workplace factors that spillover to impact aggressive- and potentially aggressive- driving behaviors during the commute and highlighted the emotion- and affective- driven mechanisms that transmit this spillover. In general, the nature of how work attitudes, behaviors, and experiences can impact employees both in and outside the workplace appears to be crucial to our understanding of how to assist organizations interested in helping their employees lead healthier, safer lives.

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Table 1. Final Configural Invariance Model Fit for Constructs

Model	χ^2	df	*p*-value	CFI	TLI	RMSEA	CI(90)	SRMR
PCV	75.68	51	0.01	0.97	0.96	xxx	xxx	0.04
INC	96.41	24	<.001	0.93	0.89	xxx	xxx	0.05
JS	38.35	6	<.001	0.95	0.89	xxx	xxx	0.02
NED	67.77	21	<.001	0.92	0.86	xxx	xxx	0.06

Note: PCV = perceived psychological contract violation; INC = incivility; JS = job stress; NED = negative emotions while driving.

Table 2. Means, Standard Deviations, and Correlations, Day One (Survey data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Age	35.52	9.17	1.00														
2	Gender	---	---	0.14	1.00													
3	Driving Anger	3.01	0.79	-0.13	0.08	1.00												
4	Negative Affect	1.61	0.58	-0.06	-0.05	0.16	1.00											
5	Trait Anger	1.63	0.57	**0.21**	0.02	**0.54**	**0.42**	1.00										
6	Schedule Control	2.38	0.95	-0.01	-0.05	-0.09	-0.07	-0.08	1.00									
7	ADB	1.20	0.47	**-0.25**	-0.06	**0.24**	**0.20**	**0.53**	-0.10	1.00								
8	PADB	1.21	0.41	**-0.25**	-0.10	0.18	**0.25**	**0.45**	-0.03	**0.72**	1.00							
9	NED	1.56	0.69	-0.18	0.13	**0.30**	**0.30**	**0.56**	-0.03	**0.55**	**0.59**	1.00						
10	PCV	1.43	0.61	-0.14	-0.03	**0.22**	**0.20**	**0.38**	-0.19	**0.41**	**0.36**	**0.45**	1.00					
11	INC	1.40	0.53	-0.13	-0.15	0.14	0.17	**0.28**	**-0.20**	**0.40**	**0.41**	**0.31**	**0.48**	1.00				
12	JS	2.17	0.70	0.02	0.09	0.12	**0.29**	0.20	**-0.28**	0.13	0.19	**0.44**	**0.41**	**0.35**	1.00			
13	TSD	1.33	1.25	-0.17	0.13	**0.20**	0.17	**0.22**	-0.07	0.18	**0.25**	**0.51**	**0.33**	**0.24**	**0.45**	1.00		
14	Time (minutes)	24.27	13.91	-0.07	0.07	0.15	0.02	0.14	0.05	0.10	0.06	0.07	0.19	-0.05	0.00	0.13	1.00	
15	Distance (miles)	12.73	9.72	0.11	0.06	0.07	0.11	0.03	0.04	-0.08	-0.01	0.00	-0.04	-0.11	-0.03	0.02	**0.73**	1.00

Note: ADB = aggressive driving behaviors; PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 3. Means, Standard Deviations, and Correlations, Day Two (Survey Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Age	35.52	9.17	1.00														
2	Gender	---	---	0.14	1.00													
3	Driving Anger	3.01	0.79	-0.13	0.08	1.00												
4	Negative Affect	1.61	0.58	-0.06	-0.05	0.16	1.00											
5	Trait Anger	1.63	0.57	**0.21**	0.02	**0.54**	**0.42**	1.00										
6	Schedule Control	2.38	0.95	-0.01	-0.05	-0.09	-0.07	-0.08	1.00									
7	ADB	1.19	0.43	**-0.23**	-0.05	**0.21**	**0.20**	**0.47**	-0.05	1.00								
8	PADB	1.18	0.35	**-0.23**	-0.15	0.12	**0.24**	**0.41**	-0.09	**0.71**	1.00							
9	NED	1.49	0.66	-0.17	0.06	**0.23**	0.18	**0.32**	-0.04	**0.67**	**0.52**	1.00						
10	PCV	1.50	0.70	-0.13	0.09	**0.25**	**0.21**	**0.34**	**-0.26**	**0.67**	**0.34**	**0.64**	1.00					
11	INC	1.35	0.54	**-0.20**	**-0.22**	0.06	**0.32**	**0.34**	-0.09	**0.33**	**0.36**	**0.26**	**0.29**	1.00				
12	JS	2.17	0.67	0.04	0.07	0.19	**0.20**	0.15	**-0.21**	**0.25**	0.12	**0.41**	**0.43**	**0.26**	1.00			
13	TSD	1.27	1.22	-0.05	0.01	**0.22**	**0.22**	0.15	-0.01	**0.53**	**0.38**	**0.68**	**0.55**	**0.20**	**0.37**	1.00		
14	Time (minutes)	28.05	20.74	-0.04	0.03	0.08	0.12	0.05	0.01	0.19	0.14	**0.25**	**0.32**	0.07	**0.20**	**0.42**	1.00	
15	Distance (miles)	13.37	10.51	0.14	0.03	0.03	0.14	0.05	-0.04	0.06	0.04	0.06	0.16	0.04	0.14	0.15	**0.73**	1.00

Note: ADB = aggressive driving behaviors; PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 4. Means, Standard Deviations, and Correlations, Day Three (Survey Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Age	35.52	9.17	1.00														
2	Gender	---	---	0.14	1.00													
3	Driving Anger	3.01	0.79	-0.13	0.08	1.00												
4	Negative Affect	1.61	0.58	-0.06	-0.05	0.16	1.00											
5	Trait Anger	1.63	0.57	**0.21**	0.02	**0.54**	**0.42**	1.00										
6	Schedule Control	2.38	0.95	-0.01	-0.05	-0.09	-0.07	-0.08	1.00									
7	ADB	1.22	0.46	**-0.23**	-0.19	0.15	**0.27**	**0.51**	-0.01	1.00								
8	PADB	1.22	0.44	-0.22	**-0.19**	0.14	**0.28**	**0.48**	0.01	**0.82**	1.00							
9	NED	1.60	0.77	-0.11	-0.03	**0.22**	0.18	**0.46**	-0.08	**0.63**	**0.68**	1.00						
10	PCV	1.55	0.67	-0.04	-0.14	0.14	0.09	**0.32**	-0.10	**0.65**	**0.60**	**0.72**	1.00					
11	INC	1.44	0.63	-0.11	-0.17	0.12	**0.18**	**0.32**	-0.12	**0.62**	**0.60**	**0.59**	**0.74**	1.00				
12	JS	2.38	0.36	-0.06	-0.14	**0.22**	**0.21**	**0.28**	-0.10	**0.36**	**0.41**	**0.51**	**0.43**	**0.50**	1.00			
13	TSD	1.34	1.33	-0.17	-0.04	**0.20**	**0.20**	**0.30**	-0.01	**0.54**	**0.52**	**0.69**	**0.64**	**0.53**	**0.41**	1.00		
14	Time (minutes)	27.13	16.60	0.00	-0.03	0.03	0.02	0.04	0.02	0.07	0.09	**0.14**	0.17	0.11	0.05	**0.31**	1.00	
15	Distance (miles)	13.44	9.69	0.15	-0.02	-0.06	0.16	-0.02	-0.03	-0.08	-0.06	0.00	-0.04	-0.04	-0.04	0.12	**0.74**	1.00

Note: ADB = aggressive driving behaviors; PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 5. Means, Standard Deviations, and Correlations, Day Four (Survey Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Age	35.52	9.17	1.00														
2	Gender	---	---	0.14	1.00													
3	Driving Anger	3.01	0.79	-0.13	0.08	1.00												
4	Negative Affect	1.61	0.58	-0.06	-0.05	0.16	1.00											
5	Trait Anger	1.63	0.57	**0.21**	0.02	**0.54**	**0.42**	1.00										
6	Schedule Control	2.38	0.95	-0.01	-0.05	-0.09	-0.07	-0.08	1.00									
7	ADB	1.14	0.43	-0.15	-0.14	0.19	0.00	**0.28**	-0.01	1.00								
8	PADB	1.15	0.43	-0.11	-0.09	0.17	0.00	0.19	0.01	**0.81**	1.00							
9	NED	1.35	0.62	0.00	0.04	**0.25**	0.00	0.18	-0.03	**0.62**	**0.72**	1.00						
10	PCV	1.55	0.65	0.06	0.11	0.17	0.17	**0.24**	-0.10	**0.44**	**0.48**	**0.63**	1.00					
11	INC	1.36	0.54	-0.06	-0.12	0.05	0.16	**0.22**	-0.19	**0.41**	**0.42**	**0.43**	**0.56**	1.00				
12	JS	2.36	0.31	-0.12	-0.16	0.15	**0.21**	0.18	-0.10	0.15	**0.20**	**0.28**	**0.31**	**0.43**	1.00			
13	TSD	1.16	1.23	0.09	**0.21**	**0.20**	0.02	0.11	-0.08	**0.25**	**0.33**	**0.60**	**0.44**	**0.25**	**0.19**	1.00		
14	Time (minutes)	26.90	17.63	0.09	-0.06	0.07	-0.08	0.01	0.11	0.17	0.17	0.18	**0.25**	0.01	0.00	**0.38**	1.00	
15	Distance (miles)	14.95	12.36	**0.20**	-0.08	0.00	0.03	-0.04	0.13	0.06	0.01	0.06	0.17	0.02	-0.06	0.19	**0.79**	1.00

Note: ADB = aggressive driving behaviors; PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 6. Means, Standard Deviations, and Correlations, Day Five (Survey Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Age	35.52	9.17	1.00														
2	Gender	---	---	0.14	1.00													
3	Driving Anger	3.01	0.79	-0.13	0.08	1.00												
4	Negative Affect	1.61	0.58	-0.06	-0.05	0.16	1.00											
5	Trait Anger	1.63	0.57	**0.21**	0.02	**0.54**	0.42	1.00										
6	Schedule Control	2.38	0.95	-0.01	-0.05	-0.09	-0.07	-0.08	1.00									
7	ADB	1.11	0.26	**-0.19**	-0.15	0.10	**0.22**	**0.36**	-0.08	1.00								
8	PADB	1.16	0.34	-0.10	-0.12	0.15	0.13	**0.22**	-0.12	**0.55**	1.00							
9	NED	1.45	0.64	-0.06	0.08	**0.22**	0.12	**0.32**	-0.11	**0.44**	**0.69**	1.00						
10	PCV	1.54	0.64	-0.04	-0.02	0.19	0.11	0.18	**-0.25**	**0.43**	**0.46**	**0.60**	1.00					
11	INC	1.32	0.53	0.00	**-0.20**	0.05	0.11	0.11	-0.19	**0.34**	**0.48**	**0.44**	**0.58**	1.00				
12	JS	2.26	0.31	-0.04	-0.08	0.09	0.04	0.12	**-0.30**	0.18	**0.26**	**0.41**	**0.39**	**0.41**	1.00			
13	TSD	1.30	1.42	0.02	0.12	0.14	0.06	0.17	-0.17	**0.32**	**0.38**	**0.63**	**0.52**	**0.39**	**0.39**	1.00		
14	Time (minutes)	26.93	15.93	0.04	-0.03	0.05	0.02	0.07	0.05	0.12	0.14	0.14	0.16	0.06	0.07	**0.32**	1.00	
15	Distance (miles)	13.99	10.99	0.16	-0.09	0.01	0.19	0.04	0.05	0.04	0.10	0.05	0.02	0.05	-0.04	0.18	**0.77**	1.00

Note: ADB = aggressive driving behaviors; PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **$p < .05$**

Table 7. Means, Standard Deviations, and Correlations, Day One (App Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age	35.94	9.24	1.00												
2	Gender	---	---	0.14	1.00											
3	Driving Anger	3.13	0.72	-0.13	0.08	1.00										
4	Negative Affect	1.77	0.66	-0.08	-0.05	0.16	1.00									
5	Trait Anger	1.64	0.54	**-0.23**	0.03	**0.53**	**0.44**	1.00								
6	App PADB	1.28	2.10	-0.28	-0.21	-0.08	-0.15	-0.05	1.00							
7	NED	1.49	0.87	-0.19	0.14	**0.30**	**0.31**	**0.47**	-0.07	1.00						
8	PCV	1.41	0.63	-0.16	-0.03	**0.23**	**0.22**	**0.39**	0.05	**0.46**	1.00					
9	INC	1.17	0.33	-0.14	-0.14	0.14	0.18	**0.29**	0.03	**0.32**	**0.48**	1.00				
10	JS	1.98	0.71	0.00	0.09	0.14	**0.28**	**0.21**	-0.12	**0.44**	**0.41**	**0.35**	1.00			
11	TSD	0.96	1.26	-0.18	0.14	**0.20**	0.18	**0.23**	-0.03	**0.51**	**0.34**	**0.24**	**0.45**	1.00		
12	Time (minutes)	25.96	19.92	-0.06	0.08	0.16	0.03	0.15	**0.41**	0.08	0.19	-0.04	0.01	0.12	1.00	
13	Distance (miles)	13.38	12.74	0.14	0.07	0.08	0.09	0.02	0.05	-0.01	-0.04	-0.11	-0.02	0.00	**0.74**	1.00

Note: App PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 8. Means, Standard Deviations, and Correlations, Day Two (App Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age	35.94	9.24	1.00												
2	Gender	---	---	0.14	1.00											
3	Driving Anger	3.13	0.72	-0.13	0.08	1.00										
4	Negative Affect	1.77	0.66	-0.08	-0.05	0.16	1.00									
5	Trait Anger	1.64	0.54	**-0.23**	0.03	**0.53**	**0.44**	1.00								
6	App PADB	1.04	1.30	0.11	0.07	-0.05	-0.03	-0.14	1.00							
7	NED	1.41	0.57	-0.18	0.08	**0.23**	**0.20**	**0.33**	0.03	1.00						
8	PCV	1.50	0.60	-0.15	0.10	**0.24**	**0.23**	**0.35**	0.14	**0.64**	1.00					
9	INC	1.40	0.63	**-0.22**	**0.20**	0.06	**0.32**	**0.35**	0.06	**0.27**	**0.30**	1.00				
10	JS	2.00	0.64	0.04	0.05	**0.20**	0.18	0.14	-0.07	**0.37**	**0.40**	**0.24**	1.00			
11	TSD	1.00	1.05	-0.06	0.01	**0.21**	**0.24**	0.16	0.19	**0.68**	**0.55**	**0.21**	**0.36**	1.00		
12	Time (minutes)	29.68	30.69	-0.03	0.05	0.09	0.12	0.06	0.11	**0.25**	**0.32**	0.07	0.19	**0.41**	1.00	
13	Distance (miles)	12.76	13.13	0.16	0.05	0.03	0.13	0.05	0.10	0.07	0.19	0.03	0.11	0.12	**0.73**	1.00

Note: App PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 9. Means, Standard Deviations, and Correlations, Day Three (App Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age	35.94	9.24	1.00												
2	Gender	---	---	0.14	1.00											
3	Driving Anger	3.13	0.72	-0.13	0.08	1.00										
4	Negative Affect	1.77	0.66	-0.08	-0.05	0.16	1.00									
5	Trait Anger	1.64	0.54	**-0.23**	0.03	**0.53**	**0.44**	1.00								
6	App PADB	1.57	2.23	0.09	0.00	-0.16	-0.34	-0.30	1.00							
7	NED	1.40	0.54	-0.12	-0.01	**0.22**	**0.19**	**0.46**	0.20	1.00						
8	PCV	1.37	0.51	-0.02	-0.13	0.15	0.10	**0.32**	0.10	**0.72**	1.00					
9	INC	1.31	0.54	-0.12	-0.15	0.12	0.19	**0.32**	-0.19	**0.59**	**0.72**	1.00				
10	JS	2.25	0.30	-0.06	-0.14	**0.22**	**0.22**	**0.28**	-0.11	**0.51**	**0.43**	**0.50**	1.00			
11	TSD	0.93	1.08	-0.17	-0.02	**0.20**	**0.19**	**0.29**	0.01	**0.69**	**0.62**	**0.54**	**0.41**	1.00		
12	Time (minutes)	29.60	22.69	0.01	-0.01	0.03	0.03	0.05	0.35	0.14	0.17	0.11	0.06	**0.30**	1.00	
13	Distance (miles)	14.32	11.86	0.18	0.01	-0.06	0.15	-0.02	0.21	-0.01	-0.05	-0.04	-0.03	0.11	**0.74**	1.00

Note: App PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 10. Means, Standard Deviations, and Correlations, Day Four (App Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age	35.94	9.24	1.00												
2	Gender	---	---	0.14	1.00											
3	Driving Anger	3.13	0.72	-0.13	0.08	1.00										
4	Negative Affect	1.77	0.66	-0.08	-0.05	0.16	1.00									
5	Trait Anger	1.64	0.54	**-0.23**	0.03	**0.53**	**0.44**	1.00								
6	App PADB	1.66	2.64	-0.08	0.04	0.03	-0.29	-0.20	1.00							
7	NED	1.20	0.33	-0.01	0.04	**0.25**	0.01	0.18	0.14	1.00						
8	PCV	1.48	0.60	0.04	0.10	0.17	0.19	**0.26**	0.23	**0.64**	1.00					
9	INC	1.33	0.52	-0.09	-0.11	0.05	0.14	**0.23**	-0.12	**0.43**	**0.57**	1.00				
10	JS	2.29	0.27	-0.10	-0.16	0.16	**0.22**	**0.19**	-0.12	**0.27**	**0.31**	**0.42**	1.00			
11	TSD	0.67	0.92	0.08	**0.20**	**0.20**	0.03	0.12	0.02	**0.61**	**0.45**	**0.25**	**0.19**	1.00		
12	Time (minutes)	29.93	23.40	0.10	-0.04	0.08	-0.07	0.03	**0.49**	**0.19**	**0.26**	0.02	0.01	**0.37**	1.00	
13	Distance (miles)	17.78	16.89	**0.21**	-0.05	0.00	0.04	-0.04	**0.58**	0.06	0.15	0.02	-0.05	0.17	**0.78**	1.00

Note: App PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 11. Means, Standard Deviations, and Correlations, Day Five (App Data)

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age	35.94	9.24	1.00												
2	Gender	---	---	0.14	1.00											
3	Driving Anger	3.13	0.72	-0.13	0.08	1.00										
4	Negative Affect	1.77	0.66	-0.08	-0.05	0.16	1.00									
5	Trait Anger	1.64	0.54	**-0.23**	0.03	**0.53**	**0.44**	1.00								
6	App PADB	1.20	2.38	0.06	0.13	0.21	-0.06	0.01	1.00							
7	NED	1.34	0.59	-0.05	0.10	**0.23**	0.13	**0.32**	0.04	1.00						
8	PCV	1.46	0.60	-0.03	0.01	**0.19**	0.12	0.19	0.01	**0.60**	1.00					
9	INC	1.19	0.39	0.00	-0.16	0.06	0.11	0.11	-0.23	**0.44**	**0.59**	1.00				
10	JS	2.20	0.25	-0.03	-0.08	0.10	0.04	0.12	0.03	**0.40**	**0.39**	**0.40**	1.00			
11	TSD	0.79	0.99	0.01	0.14	0.14	0.07	0.17	-0.06	**0.63**	**0.52**	**0.41**	**0.37**	1.00		
12	Time (minutes)	28.00	21.60	0.05	0.00	0.06	0.02	0.07	0.12	0.15	0.17	0.07	0.08	**0.32**	1.00	
13	Distance (miles)	15.20	14.71	0.17	-0.07	0.02	0.09	0.03	0.05	0.06	0.03	0.06	-0.03	0.17	**0.77**	1.00

Note: App PADB = potentially aggressive driving behaviors; NED = negative emotions while driving; PCV = perceived psychological contract violation; INC = incivility; JS = job stress; TSD = travel speed disruptions; Time = time travelled; Distance = distance travelled. **p < .05**

Table 12. Standardized regression weights for Hypothesis 1

		Aggressive Driving Behaviors					Potentially Aggressive Driving Behaviors				
Models	Variables	β		SE	R2		β		SE	R2	
Level 1 Direct Effects	Job Stress	0.06	**	0.02			0.03		0.02		
Controls	TSD	0.16	***	0.04			0.14	***	0.04		
					0.034	*				0.022	
Level 2 Controls	Driving Anger	-0.11		0.08			-0.08		0.08		
	Negative Affect	-0.03		0.10			0.03		0.09		
	Trait Anger	0.54	***	0.10			0.39	**	0.11		
	Age	-0.16	**	0.05			-0.14	*	0.06		
	Job Stress (M)	0.12		0.07			0.18	*	0.08		
					0.328	***				0.245	**

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions.

Table 13. Standardized regression weights for Hypothesis 2

		Aggressive Driving Behaviors					Potentially Aggressive Driving Behaviors				
Models	Variables	β		SE	R2		β		SE	R2	
Level 1 Direct Effects	Incivility	0.14	**	0.05			0.18	***	0.05		
Controls	TSD	0.16	***	0.04			0.13	***	0.04		
					0.049	**				0.051	*
Level 2 Controls	Driving Anger	-0.08		0.08			-0.03		0.07		
	Negative Affect	-0.06		0.09			0.01		0.08		
	Trait Anger	0.47	***	0.10			0.31	**	0.10		
	Age	-0.14	**	0.05			-0.12	*	0.06		
	Incivility (M)	0.38	***	0.09			0.42	***	0.08		
					0.443	***				0.376	***

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions.

Table 14. Standardized regression weights for Hypothesis 3

			Negative Emotions while Driving				
	Models	Variables	β		SE	R2	
1	Level 1						
	Direct Effects	Job Stress	0.11	***	0.02		
	Controls	TSD	0.27	***	0.04		
						0.100	***
	Level 2						
	Controls	Driving Anger	0.05		0.09		
		Negative Affect	-0.02		0.10		
		Trait Anger	0.33	**	0.13		
		Age	-0.05		0.07		
		Job Stress (M)	0.36	***	0.08		
						0.330	***
2	Level 1						
	Direct Effects	Incivility	0.13	***	0.03		
	Controls	TSD	0.28	***	0.04		
						0.106	***
	Level 2						
	Controls	Driving Anger	0.12		0.09		
		Negative Affect	0.01		0.10		
		Trait Anger	0.27		0.14		
		Age	-0.02		0.06		
		Incivility (M)	0.39	**	0.13		
						0.354	***

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions.

Table 15. Standardized regression weights for Hypothesis 4a

		Aggressive Driving Behaviors				Negative Emotions While Driving				Indirect Effect		
Models	Variables	β		SE	R2	β		SE	R2	Est.	SE	90% Bayes CI
Level 1												
Direct Effects	Job Stress	0.00		0.02		0.28	***	0.04				
	NED	0.34	***	0.06								
Controls	TSD	0.01		0.03								
					0.117 **				0.079 **			
Indirect Effect										0.12	0.03	.08, .16
Level 2												
Controls	Driving Anger	-0.14		0.08								
	Negative Affect	-0.03		0.10								
	Trait Anger	0.42	**	0.14								
	Age	-0.16	**	0.05								
	Job Stress (M)	-0.05		0.07		0.45	***	0.06				
	NED (M)	0.49	***	0.12								
					0.385 ***				0.200 **			
Indirect Effect										0.18	0.07	.11, .29

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; NED = negative emotions while driving.

Table 16. Standardized regression weights for Hypothesis 4b

		Potentially Aggressive Driving Behaviors				Negative Emotions While Driving				Indirect Effect		
Models	Variables	β		SE	R2	β		SE	R2	Est.	SE	90% Bayes CI
Level 1												
Direct Effects	Job Stress	-0.03		0.02		0.28	***	0.04				
	NED	0.34	***	0.07								
Controls	TSD	-0.01		0.04								
					0.108 *				0.079 **			
Indirect Effect										0.11	0.03	.07, .16
Level 2												
Controls	Driving Anger	-0.12		0.06								
	Negative Affect	0.04		0.07								
	Trait Anger	0.18		0.12								
	Age	-0.12	*	0.05								
	Job Stress (M)	-0.06		0.06		0.45	***	0.07				
	NED (M)	0.69	***	0.07								
					0.492 ***				0.200 **			
Indirect Effect										0.26	0.07	.18, .39

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; NED = negative emotions while driving.

Table 17. Standardized regression weights for Hypothesis 5a

		Aggressive Driving Behaviors				Negative Emotions While Driving				Indirect Effect		
Models	Variables	β		SE	R2	β		SE	R2	Est.	SE	90% Bayes CI
Level 1												
Direct Effects	Incivility	0.07		0.04		0.27	***	0.06				
	NED	0.32	***	0.06								
Controls	TSD	0.01		0.03								
					0.121 **				0.072 *			
Indirect Effect										0.12	0.04	.08, .16
Level 2												
Controls	Driving Anger	-0.12		0.08								
	Negative Affect	-0.06		0.09								
	Trait Anger	0.41		0.13								
	Age	-0.15		0.05								
	Incivility (M)	0.27	**	0.10		0.48	***	0.11				
	NED (M)	0.34	**	0.11								
					0.433 ***				0.233 *			
Indirect Effect										0.11	0.05	.06, .18

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; NED = negative emotions while driving.

Table 18. Standardized regression weights for Hypothesis 5b

		Potentially Aggressive Driving Behaviors				Negative Emotions While Driving				Indirect Effect		
Models	Variables	β		SE	R2	β		SE	R2	Est.	SE	90% Bayes CI
Level 1												
Direct Effects	Incivility	0.11	**	0.04		0.27	***	0.06				
	NED	0.30	***	0.06								
Controls	TSD	-0.01		0.04								
					0.118 **				0.072 *			
Indirect Effect										0.10	0.03	.07, .14
Level 2												
Controls	Driving Anger	-0.10		0.06								
	Negative Affect	0.01		0.06								
	Trait Anger	0.17		0.11								
	Age	-0.12		0.05								
	Incivility (M)	0.22	**	0.06		0.48	***	0.11				
	NED (M)	0.57	**	0.08								
					0.525 ***				0.233 *			
Indirect Effect										0.18	0.05	.12, .27

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; NED = negative emotions while driving.

Table 19. Standardized regression weights for Hypothesis 6

		Aggressive Driving Behaviors					Potentially Aggressive Driving Behaviors				
Models	Variables	β		SE	R2		β		SE	R2	
Level 1 Direct Effects	PCV	0.23	***	0.04			0.16	***	0.04		
Controls	TSD	0.08	*	0.04			0.08	*	0.03		
					0.075	***				0.041	*
Level 2 Controls	Driving Anger	-0.13		0.07			-0.09		0.07		
	Negative Affect	-0.04		0.09			0.03		0.08		
	Trait Anger	0.43	***	0.11			0.29	**	0.11		
	Age	-0.17	***	0.05			-0.15	*	0.06		
	PCV (M)	0.43	***	0.08			0.43	***	0.08		
					0.476	***				0.373	***

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; PCV = perceived psychological contract violation.

Table 20. Standardized regression weights for Hypothesis 7a

		Aggressive Driving Behaviors					Perceived Psychological Contract Violation					Indirect Effect		
Models	Variables	β		SE	R2		β		SE	R2		Est.	SE	90% Bayes CI
Level 1														
Direct Effects	NED	0.29	***	0.06			0.48	***	0.07					
	PCV	0.13	**	0.04										
Controls	TSD	-0.02		0.03										
					0.132	***				0.234	***			
Indirect Effect												0.06	0.02	.02, .10
Level 2														
Controls	Driving Anger	-0.16	*	0.08										
	Negative Affect	-0.05		0.09										
	Trait Anger	0.40	**	0.13										
	Age	-0.17	*	0.05										
	NED (M)	0.27	**	0.10			0.66	***	0.09					
	PCV (M)	0.31	**	0.10										
					0.439	***				0.436	***			
Indirect Effect												0.11	0.04	.04, .17

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; NED = negative emotions while driving; PCV = perceived psychological contract violation

Table 21. Standardized regression weights for Hypothesis 7b

		Potentially Aggressive Driving Behaviors					Perceived Psychological Contract Violation					Indirect Effect		
Models	Variables	β		SE	R2		β		SE	R2		Est.	SE	90% Bayes CI
Level 1														
Direct Effects	NED	0.31	***	0.07			0.48	***	0.07					
	PCV	0.05		0.04										
Controls	TSD	-0.03		0.04										
					0.110	**				0.234	***			
Indirect Effect												0.02	0.02	-.02, .06
Level 2														
Controls	Driving Anger	-0.12	*	0.06										
	Negative Affect	0.03		0.06										
	Trait Anger	0.18		0.11										
	Age	-0.13	*	0.05										
	NED (M)	0.60	***	0.07			0.66	***	0.09					
	PCV (M)	0.11		0.07										
					0.499	***				0.436	***			
Indirect Effect												0.04	0.03	-.04, .08

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; NED = negative emotions while driving; PCV = perceived psychological contract violation

Table 22. Standardized regression weights for Hypothesis 1b (app data)

		Potentially Aggressive Driving Behaviors				
Models	Variables	β		SE	R2	
Level 1						
Direct Effects	Job Stress	0.11		0.12		
					0.012	
Level 2						
Controls	Job Stress (M)	0.77	***	0.12		
					0.569	**

Note: $p < .05$*; $p < .01$**; $p < .001$***.

Table 23. Standardized regression weights for Hypothesis 2b (app data)

		Potentially Aggressive Driving Behaviors		
Models	Variables	β	SE	R2
Level 1				
Direct Effects	Incivility	0.10	0.11	
				0.010
Level 2				
Controls	Incivility (M)	0.22	0.16	
				0.048

Note: $p < .05$*; $p < .01$**; $p < .001$***.

Table 24. Standardized regression weights for Hypothesis 3 (app data)

			Negative Emotions while Driving			
1	Models	Variables	β		SE	R2
	Level 1					
	Direct Effects	Job Stress	0.03		0.06	
						0.001
	Level 2					
	Controls	Job Stress (M)	0.00		0.00	
						0.087
2	Models	Variables				
	Level 1					
	Direct Effects	Incivility	0.12	*	0.06	
						0.015
	Level 2					
	Controls	Incivility (M)	0.07		0.17	
						0.004

Note: $p < .05$*; $p < .01$**; $p < .001$***.

Table 25. Standardized regression weights for Hypothesis 4b (app data)

		Potentially Aggressive Driving Behaviors				Negative Emotions while Driving			Indirect Effect		
Models	Variables	β		SE	R2	β	SE	R2	Est.	SE	90% Bayes CI
Level 1											
Direct Effects	Job Stress	0.11		0.12		0.06	0.12				
	NED	-0.06		0.07							
					0.015			0.004			
Indirect Effect									0.00	0.01	-.06, .03
Level 2											
	Job Stress (M)	0.83	***	0.07		0.29	0.26				
	NED (M)	-0.20		0.22							
					0.632 ***			0.087			
Indirect Effect									-0.16	0.30	-.67, .17

Note: $p < .05$*; $p < .01$**; $p < .001$***; NED = negative emotions while driving.

Table 26. Standardized regression weights for Hypothesis 5b (app data)

		Potentially Aggressive Driving Behaviors			Negative Emotions while Driving			Indirect Effect		
Models	Variables	β	SE	R2	β	SE	R2	Est.	SE	90% Bayes CI
Level 1										
Direct Effects	Incivility	0.09	0.11		0.22 *	0.10				
	NED	0.07	0.07							
				0.014			0.048			
Indirect Effect								0.01	0.02	-.06, .03
Level 2										
	Incivility (M)	0.22	0.15		0.07	0.17				
	NED (M)	0.03	0.10							
				0.049			0.004			
Indirect Effect								0.02	0.07	-.67, .17

Note: $p < .05$*; $p < .01$**; $p < .001$***; NED = negative emotions while driving.

Table 27. Standardized regression weights for Hypothesis 6b (app data)

		Potentially Aggressive Driving Behaviors			
Models	Variables	β		SE	R2
Level 1					
Direct Effects	PCV	0.24	*	0.10	
					0.057
Level 2					
Controls	PCV (M)	0.12		0.12	
					0.015

Note: $p < .05$*; $p < .01$**; $p < .001$***; PCV = perceived psychological contract violation

Table 28. Standardized regression weights for Hypothesis 7b (app data)

		Potentially Aggressive Driving Behaviors				Perceived Psychological Contract Violation				Indirect Effect		
Models	Variables	β		SE	R2	β		SE	R2	Est.	SE	90% Bayes CI
Level 1												
Direct Effects	NED	-0.06		0.08		0.52	***	0.10				
	PCV	0.27	*	0.11								
					0.059				0.275			
Indirect Effect										0.38	0.13	.16, .64
Level 2												
	NED (M)	-0.11		0.21		0.74	***	0.17				
	PCV (M)	0.20		0.15								
					0.020				0.546			
Indirect Effect										1.81	1.37	-3.66, 7.49

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; NED = negative emotions while driving; PCV = perceived psychological contract violation

Table 29. Standardized regression weights for Gender and Power (supplemental)

			Aggressive Driving Behaviors			Potentially Aggressive Driving Behaviors		
Models		Variables	β	SE	R2	β	SE	R2
1	Level 1							
	Direct Effects							
	Controls	TSD	0.17 ***	0.04		0.14 ***	0.04	
					0.030 *			0.021 *
	Level 2							
	Controls	Driving Anger	-0.08	0.08		-0.04	0.09	
		Negative Affect	-0.01	0.10		0.06	0.09	
		Trait Anger	0.56 ***	0.09		0.41 ***	0.10	
		Age	-0.14 **	0.05		-0.12	0.06	
		Male	0.11	0.06		0.13	0.07	
					0.327 ***			0.233 ***
2	Level 1							
	Direct Effects							
	Controls	TSD	0.17 ***	0.04		0.14 ***	0.04	
					0.030 *			0.021
	Level 2							
	Controls	Driving Anger	-0.09	0.08		-0.05	0.09	
		Negative Affect	0.01	0.10		0.07	0.09	
		Trait Anger	0.55 ***	0.09		0.41 ***	0.11	
		Age	-0.16 **	0.05		-0.14 *	0.06	
		Power	0.05	0.08		0.00	0.06	
					0.317 ***			0.216 **

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions.

Table 30. Standardized regression weights for Interaction (supplemental)

		Aggressive Driving Behaviors					Potentially Aggressive Driving Behaviors				
Models	Variables	β		SE	R2		β		SE	R2	
Level 1											
			**					**			
Direct Effects	NED	0.27	*	0.06			0.29	*	0.07		
	PCV	0.10	*	0.04			0.01		0.04		
	NEDxPCV	0.15	**	0.05			0.16		0.09		
Controls	TSD	-0.01		0.03			-0.02		0.04		
					0.151	***				0.128	*
Level 2											
Controls	Driving Anger	-0.14		0.08			-0.11	*	0.06		
	Negative Affect	-0.02		0.08			0.03		0.06		
	Trait Anger	0.39	**	0.13			0.18		0.11		
	Age	-0.16	**	0.05			-0.12	*	0.05		
								**			
	NED (M)	0.14		0.07			0.52	*	0.10		
	PCV (M)	0.23	**	0.07			0.08		0.06		
	NEDxPCV (M)	0.23		0.12			0.10		0.16		
					0.543	***				0.545	***

Note: $p < .05$*; $p < .01$**; $p < .001$***; TSD = travel speed disruptions; NED = negative emotions while driving; PCV = perceived psychological contract violation; NEDxPCV = interaction of negative emotions while driving and perceived psychological contract violation.

Table 31. Overview of Supported Hypotheses Obtained from Survey-only and App-based Datasets.

Hypothesis	Survey-only Data	App-based Data
1a	*	---
1b	n.s.	n.s.
2a	*	---
2b	*	n.s.
3a	*	n.s.
3b	*	*
4a	*	---
4b	n.s.	n.s.
5a	*	---
5b	*	n.s.
6a	*	---
6b	*	*
7a	*	---
7b	n.s.	*

Note: * = significant; n.s. = not significant; --- indicates hypothesis not tested

Figure 1. Conceptual Model

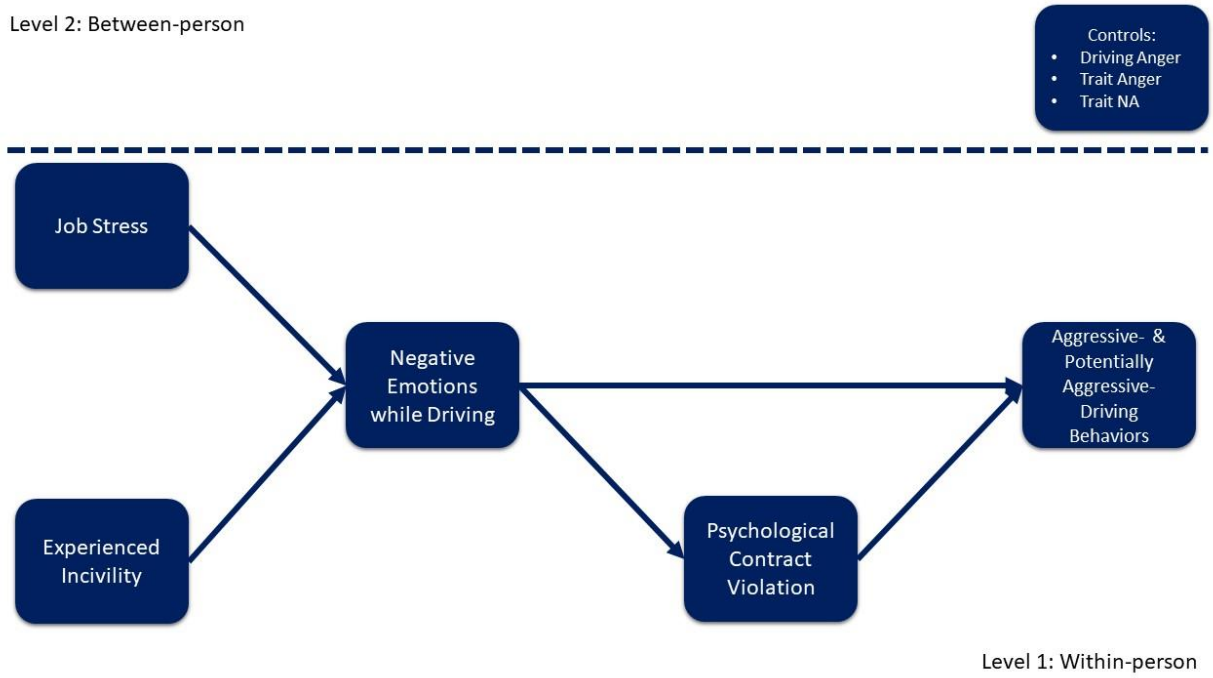


Figure 2. Full Path Model, Supplemental Analysis

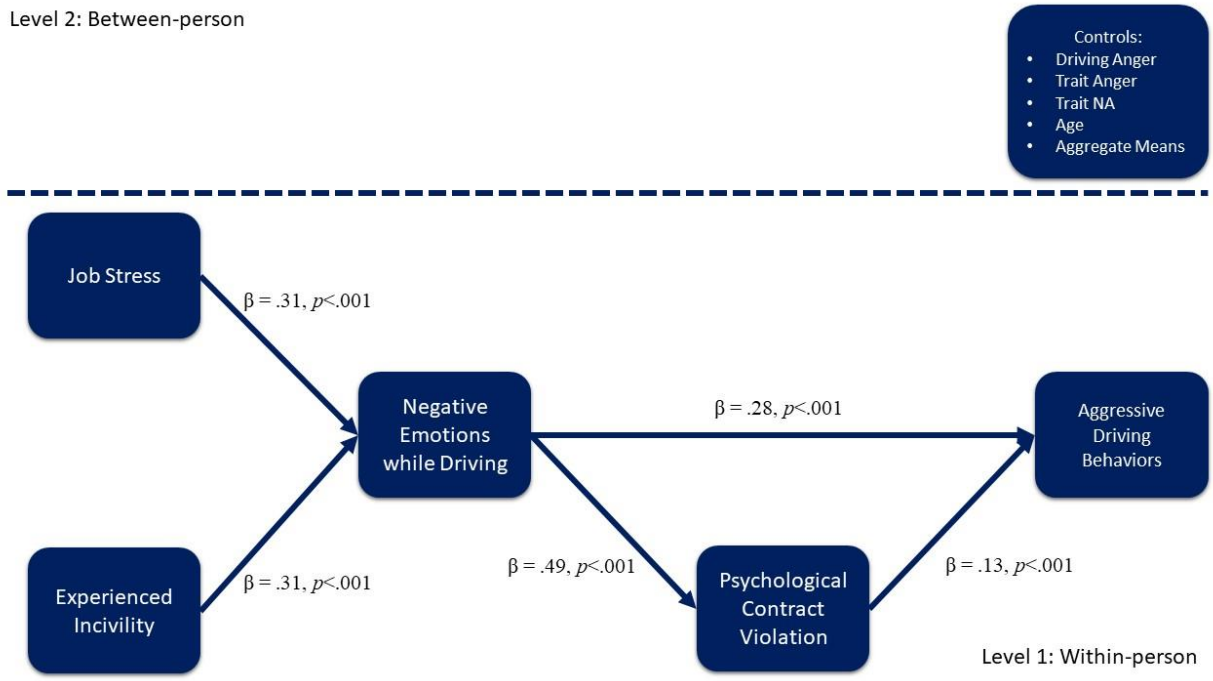
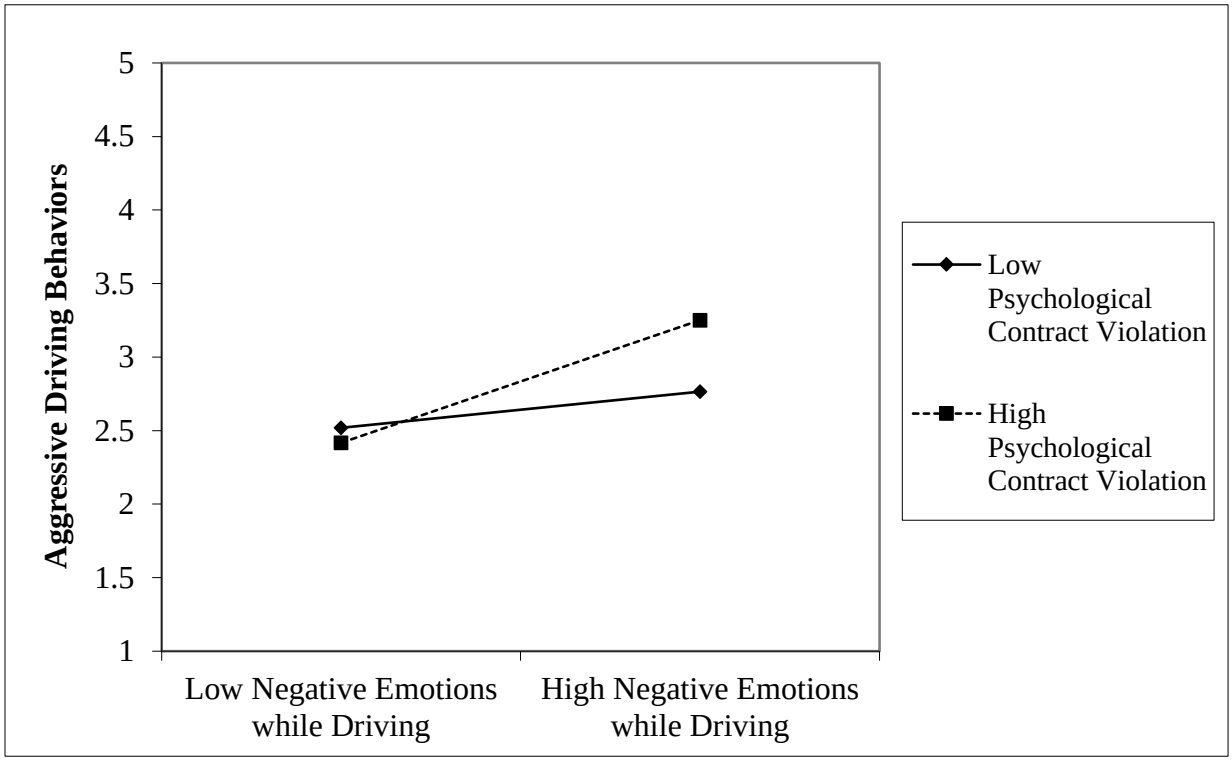


Figure 3. Interaction of Negative Emotions while Driving and Perceived Psychological Contract Violation on Aggressive Driving Behaviors



Appendix

Daily Diary Measures

The following proposed daily diary measures were piloted to streamline items and response times.

Driving Behaviors (18)			
REFERENCE: Dula, C.S., & Ballard, M.E. (2003). Development and evaluation of a measure of dangerous, aggressive, negative emotional, and risky driving. Journal of Applied Social Psychology, 33(2), 263-282.			
STEM: ***Today***, during my commute from work to home…			
Q#	**Var. Name**		**Response Scale**
	AD1	I flashed my headlights when I was annoyed by another driver	1 = never 2 = rarely 3 = sometimes 4 = often 5 = very often
	AD2	I made rude gestures (e.g., giving the "finger," yelling curse words) toward drivers who annoyed me	
	AD3	I verbally insulted drivers who annoyed me	
	AD4	I deliberately used my car/truck to block drivers who tailgated me	
	AD5	I tailgated a driver who annoyed me	
	AD6	I punished someone who cut me off	
	RD1	I accelerated at stop lights to get in front of other drivers	
	RD2	I illegally passed a car/truck that was going too slowly	
	RD3	I raced a slow-moving train to a railroad crossing	
	RD4	I weaved in and out of slower traffic	
	RD5	I drove when I was mildly intoxicated or buzzed	
	RD6	I crossed double yellow lines to see if I could pass a slow-moving car/truck	
	RD7	I felt it was my right to get where I needed to go as quickly as possible	
	RD8	I drove in the shoulder lane or median to get around a traffic jam	
	RD9	I barely missed on-coming cars when passing a car/truck on a 2-lane road	
	RD10	I drove when I was drunk	
	RD11	I considered myself a risk-taker during today's commute	
	RD12	I felt that most traffic "laws" could be considered suggestions	
	NED1	I drove when I was angry or upset	
	NED2	I lost my temper while I was driving	
	NED3	I considered the actions of other drivers to be inappropriate or "stupid"	
	NED4	I got stuck in a traffic jam and got very irritated	
	NED5	I got irritated when a car/truck in front of me slowed me down for no reason	
	NED6	I felt that passive drivers should learn how to drive or stay home	
	NED7	I felt that I would lose my temper if I had to confront another driver	

Incivility (6)			
REFERENCE: Cortina, L.M., Magley, V.J., Williams, J.H., & Langhout, R.D. (2001). Incivility in the workplace: Incidence and impact. Journal of Occupational Health Psychology, 6(1), 64-80.			
STEM: Please indicate the extent to which you agree with the following statements. ***Today*** at work, a coworker or supervisor…			
Q#	**Var. Name**		**Response Scale**
	Inc1	Put me down or was condescending to me	1 = strongly disagree 2 = disagree 3 = agree 4 = strongly agree
	Inc2	Paid little attention to my statement or showed little interest in my opinion	
	Inc3	Made demeaning or derogatory remarks about me	
	Inc4	Addressed me in unprofessional terms, either publicly or privately	
	Inc5	Ignored or excluded me from professional camaraderie	
	Inc6	Doubted my judgment on a matter over which I had responsibility	

Job Stress (16)			
REFERENCE: Stanton, J., Balzer, W., Smith, P., Parra, L., & Ironson, G. (2001). A general measure of work stress: The stress in general scale. Educational and Psychological Measurement, 61(5), 866-888.			
STEM: Please indicate the extent to which you agree with the following statements. ***Today***, work felt…			
Q#	**Var. Name**		**Response Scale**
	JSP1	Demanding	1 = strongly disagree 2 = disagree 3 = agree 4 = strongly agree
	JSP2	Pressured	
	JSP3	Hectic	
	JSP4	Calm	
	JSP5	Relaxed	
	JSP6	Stressful	
	JSP7	Pushed	
	JST1	Irritating	
	JST2	Under control	
	JST3	Nerve-wracking	
	JST4	Hassled	
	JST5	Comfortable	
	JST6	More stressful than I'd like	
	JST7	Smooth running	

Psychological Contract Violation (4)			
REFERENCE: Robinson, S.L., & Morrison, E.W. (2000). The development of psychological contract breach and violation: A longitudinal study. Journal of Organizational Behavior, 21(5), 525-546.			
STEM: ***Today***, during my commute from work to home…			
Q#	**Var. Name**		**Response Scale**
	PCV1	I felt a great deal of anger towards another driver	1 = strongly disagree 2 = disagree 3 = agree 4 = strongly agree
	PCV2	I felt betrayed by another driver	
	PCV3	I felt that another driver had violated the contract between us (in other words, another driver violated the "rules of the road")	
	PCV4	I felt extremely frustrated by how I was treated by another driver	

Baseline Control Measures

The following baseline control measures were piloted to streamline items and response times.

Driving Anger (14)			
REFERENCE: Deffenbacher, J.L., Oetting, E.R., & Lynch, R.S. (1994). Development of a driving anger scale. Psychological Reports, 74, 83-91.			
INSTRUCTIONS: Imagine that each of the following situations described ***is actually happening to you***. Please rate the amount of anger you feel as provoked by each of the following situations.			
Q#	**Var. Name**		**Response Scale**
	HG1	Someone makes an obscene gesture toward you while you are driving	1 = not at all 2 = a little 3 = somewhat 4 = much 5 = very much
	HG2	Someone honks at you while you are driving	
	ID1	Someone is weaving in and out of traffic	
	ID2	Someone runs a red light or stop sign	
	PP1	You pass a radar speed trap	
	PP2	A police officer pulls you over	
	SD1	A slow vehicle on two-way road will not pull over and let people by	
	SD2	Someone is slow in parking and holding up traffic	
	DY1	Someone backs right out in front of you without looking	
	DY2	Someone speeds up when you try to pass them	
	DY3	A bicyclist is riding in the middle of the lane and slowing traffic	
	TO1	You are stuck in a traffic jam	
	TO2	A truck kicks up sand or gravel on the car you are driving	
	TO3	You are driving behind a large truck and cannot see around it	

Positive and Negative Affect (10)			
REFERENCE: Thompson, E.R. (2007). Development and validation of an internationally reliable short-form of the positive and negative affect schedule (PANAS). Journal of Cross-Cultural Psychology, 38(2), 227-242.			
STEM: Please indicate to what extent you ***generally*** feel, on average…			
Q#	**Var. Name**		**Response Scale**
	PA1	Active	1 = never 2 = a little 3 = somewhat 4 = often 5 = very often
	PA2	Determined	
	PA3	Attentive	
	PA4	Inspired	
	PA5	Alert	
	NA1	Afraid	
	NA2	Nervous	
	NA3	Upset	
	NA4	Hostile	
	NA5	Ashamed	

Trait Anger (10)

REFERENCE: Spielberger, C.D., Jacobs, G., Russell, S., & Crane, R.S. (1983). Assessment of anger: The State-Trait Anger Scale. In J.N. Butcher & C.D. Spielberger (Eds.), Advances in personality assessment (pp. 159-187). Hillsdale, NJ: Lawrence Erlbaum.

INSTRUCTIONS: Please respond to the following items as they relate to ***how you generally feel you are***

Q#	Var. Name		Response Scale
	TAA1	I am a hotheaded person	1 = almost never 2 = sometimes 3 = often 4 = very often 5 = almost always
	TAA2	I am quick-tempered	
	TAA3	I am fiery-tempered	
	TAA4	I fly off the handle	
	TAA5	I get furious when criticized	
	TAA6	I say nasty things	
	TAA7	I feel slowed down by others	
	TAS1	I feel annoyed	
	TAS2	I feel like hitting someone	
	TAS3	I feel infuriated	