SITUATIONAL AND TRAIT INFLUENCES ON DYNAMIC JUSTICE

by

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ABSTRACT

As the past twenty years of justice research have demonstrated, perceiving the workplace as fair is associated with higher levels of organizational commitment, job satisfaction, work-related effort, acceptance of work-related policies and procedures, and decreased absenteeism. However, although not always explicitly stated in theories of fairness, there has been a tacit understanding that justice perceptions are not static, but influenced by a variety of factors. In short, extant justice theories assume there are underlying dynamic elements within the construct, but the measures and previous research examining justice has assessed it as if it were a stable and static perception. The purpose of this research, therefore, was to take the first step to explore and describe the frequency and intensity of injustice perceptions at work and how individuals’ affective states and traits influence these perceptions. A snow-ball sample of working individuals from across the United States provided ESM data by responding to palmtop computers at randomly scheduled intervals several times a day for 3 work weeks. Additionally, participants provided event-contingent injustice data when they perceived unfair events during their workday. The results of this examination, as well as the use of experience sampling for the study of dynamic workplace injustice, are discussed.
INTRODUCTION

As the past twenty years of justice research have demonstrated, perceiving the workplace as fair is associated with higher levels of organizational commitment, job satisfaction, work-related effort, acceptance of work-related policies and procedures, and decreased absenteeism (see Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001 for meta-analytic reviews). Clearly, organizational scholars have made great strides toward understanding the justice construct and its importance in the workplace. Yet, even with these significant strides in workplace fairness research, justice scholars still do not know how often injustice perceptions occur and the level of egregiousness that is associated with those unfair events. In short, there is still much to learn about the frequency with which unfair workplace events occur and the perceived intensity of those events.

Furthermore, although not always explicitly stated in theories of fairness, there is the tacit understanding that justice perceptions are not static, but influenced by a variety of factors (e.g., mood, one’s personal life, individual differences; see Brief & Weiss, 2002; Thoresen, Kaplan, Barsky, Warren, & de Chermont, 2003, for reviews). In support of this contention, Gilliland (2008) argued that standard Likert-type measures of justice—those frequently employed in justice studies—may fail to identify important elements of the underlying constructs that scholars are trying to understand. This echoes Harlos and Pinder’s (1999) contention that range, complexity, and dimensionality of organizational justice are still a mystery to fairness researchers.
In short, extant justice theories assume there are underlying dynamic elements within the construct, but the measures used to study justice assess it as if it were a stable and static perception. For example, Colquitt’s (2001) measure of organizational justice assesses individuals’ justice perceptions about a single target at a specific point in time. Therefore, in its current form this measure is not designed to examine how justice perceptions change over time. Prior studies of justice have captured snapshots of how individuals form fairness perceptions. Much like examining a picture of a bride and groom on their wedding day, it is possible to glean tidbits of information about their relationship, feelings for each other, and their surrounding at that moment in time. However, watching a continuous video of the wedding would be more telling of their mind-set during the event. The emotions felt by the bride and groom, and their overall perceptions of the event, would be expected to change as the wedding progressed and events unfolded. Similarly, researchers interested in understanding fairness would be in a better position to explain how it works if they watched fairness perceptions unfold than if they took a static picture.

This is not to say that prior research (e.g., Greenberg, 1986; Harlos & Pinder, 1999; Sheppard & Lewicki, 1987) hasn’t made progress identifying types of justice experiences. Case in point, experimental evidence has shown that minor manipulations (e.g., not earning raffle tickets) affect justice appraisals and mood over the course of a short laboratory study (e.g., Batson, Bowers, Leonard, & Smith, 2000; Clark, 1995). Findings such as these suggest that justice perceptions fluctuate over time. However,
knowledge is still lacking regarding the frequency and amplitude of these experiences (Gilliland, 2008).

The purpose of this research, therefore, is to take the first steps to explore and describe the frequency and intensity of injustice perceptions at work by taking a dynamic view of justice. One way to accomplish this is by looking at other constructs that have (a) been shown to relate to influence justice perceptions and display variability over time (i.e., affect). This study, therefore, focuses on understanding how affective states influence injustice perceptions in real time. Finally, this research explores the possibility that stable individual differences influence the temporal formation of justice perceptions. These ideas will be elaborated upon at a later point. That said, to understand how this dynamic view of justice moves the justice literature forward, the reader must understand how it has been conceptualized and studied in the past.

What follows is a brief review of the types of justice as they are classically defined in field of organizational behavior. In keeping with this paradigm, the words “justice” and “fairness” are used interchangeably to refer to the same perception (e.g., Blader & Bobocel, 2005; Cropanzano, Rupp et al., 2001; van den Bos, 2003; van den Bos, Lind, Vermunt, & Wilke, 1997).

Organizational Justice as Traditionally Defined

When scholars study “organizational justice,” they are referring to individuals’ perceptions of the fairness of an event or object (Blader & Bobocel, 2005; Cropanzano, Rupp, et al. 2003; van den Bos, 2003; van den Bos, Lind, Vermunt, & Wilke, 1997).
individuals to make judgments about the fairness of the treatment they receive at work. In general, individuals want to receive fair outcomes (distributive justice; Adams, 1965), deem that processes utilized to determine those outcomes were conducted in a fair manner (procedural justice; Thibaut & Walker, 1975), and receive a suitable amount of information and appropriate interpersonal treatment leading up to and during the events (interactional justice; Bies & Moag, 1986).

**Distributive justice.** While all three categories of justice are important, the foundational justice research began with investigation surrounding fairness perceptions of reward distributions. In short, scholarly inquiry has shown that individuals want to know that they are receiving what they believe they deserve (Markovsky & Younts, 2001). Additionally, individuals employ distribution rules to establish whether an outcome is fair or unfair. Though we don’t always agree on the fairest rule, three seem to have general acceptance. Explicitly, people want to know that allotments are made based on contributions or level of performance (equity), that allocations are distributed equally (equality), or individual need is considered during the allocation process (need; Leventhal, 1978). Furthermore, all three of these rules imply that there is some sort of social comparison taking place (Aquino, Griffith, Allen, & Hom, 1997; Cropanzano & Folger, 1989; Folger, 1987; Folger, & Martin, 1986).

Finally, distributive fairness is distinct from perceiving an outcome as favorable. In fact, research has shown that outcome fairness and outcome favorability are conceptually distinct judgments (Cropanzano, Slaughter, & Bachiochi, 2005; Skitka,
Procedural justice. As mentioned earlier, individuals desire fair processes prior to outcome allocations. Procedural justice denotes perceptions regarding the way in which these allocation decisions are made. Organizational justice scholars have shown that procedures are seen as fair if they contain certain features. In particular, individuals want to know the processes utilized to make the allocations were accurate, correctable, representative of the views of all parties concerned (that is, allowing for “voice” or input from affected parties), consistent with ethical standards, and absent of bias (Leventhal, 1978). Of these attributes, voice has been one of the most widely studied by fairness researchers. It has been shown that employees consistently prefer to have voice when important decisions are made (see van den Bos, 1999 for a review; see van den Bos et al., 2009 for cross-cultural caveats). Moreover, voice has been found to mitigate negative effects generally associated with outcomes that are perceived to be unfair (see Brockner, 2002; Brockner & Wiesenfeld, 1996 for reviews).

Interactional justice. Having voice during a process is important, but only part of the picture. If individuals perceive they received unsatisfactory interpersonal treatment, they may feel they have been treated unfairly (Bies & Moag, 1986). Interactional justice, therefore, is the perception one has received an appropriate amount of information and interpersonal treatment throughout process and allocation stages. Interactional justice tends to be as good a predictor of job performance and supervisory commitment as procedural justice (Colquitt et al., 2001).
Interactional justice encompasses two kinds of interpersonal conduct (e.g., Greenberg, 1990a, 1993b). The first kind, titled *interpersonal* justice, denotes the extent to which individuals perceive that they are treated politely and shown an appropriate level of dignity and respect. The second kind, titled *informational* justice, is the extent to which individuals perceive that the explanations they are given are appropriately informative regarding procedures and distribution of outcomes. Both meta-analytic reviews of the justice literature (e.g., Colquitt, Conlon, Wesson, Porter, & Ng, 2001) and factor-analytic work of the justice construct (i.e., Colquitt, 2001) support the notion that interpersonal and informational justice display different measurement models and have disparate effects on important work-related variables.

A Dynamic View of Justice

As the reader can probably tell, the traditional justice construct covers much conceptual ground and has been thoroughly dissected into its constituent parts: distributive justice (DJ), procedural justice (PJ), and interactional justice (IJ). Furthermore, each justice type has been linked to important workplace outcomes with support from numerous empirical studies. That said, the justice categorization process, while extremely useful, may have led justice scholars to focus their attention on differentiating the types of justice at the expense of asking and answering other relevant research questions. For example, how often do employees perceive unfairness at work? And, how intense are these perceptions?

For conceptual purposes, justice perceptions can be thought of as analogous to the rising and falling oceanic tides. Tides are the rising of the oceans’ surface caused by tidal
forces of the Sun and Moon. Similarly, one may think of varying justice perceptions as similar to the tides, and quality of the individual (e.g., state and trait-level affect) and workplace events (e.g., corporate restructuring), as the Sun and the Moon. The changing tide at any given location is the result of the shifting position of the Sun and Moon relative to the Earth with additional influential factors such as the effects of the Earth’s rotation. Likewise, justice perceptions at any given moment in time are likely the result of changing affective states coupled with prior fairness perceptions and ongoing workplace events. Just as being able to make tidal predictions is important for coastal navigation, the ability for employers to anticipate the justice perceptions of their employees is apt to contribute to an organization’s ability to function smoothly.

*Cycles of justice perceptions.* The semidiurnal tidal range—the difference in height between high and low waters—fluctuates on a two-week cycle. Similar to the changing tidal range, it has been demonstrated that state-level affect cycles over the course of a week (Larsen & Kasimatis, 1990; McFarlane, Martin, & Williams, 1988; Stone, Hedges, Neale, & Satin, 1985; Weiss et al., 1999). Said differently, individuals have been shown to display predictable patterns of positive and negative affect that sequence on roughly a seven-day schedule.

In line with these findings, I posit that justice perceptions also possess a cyclical component; and, that this component mimics affective cycles. Although this has never been tested, other justice scholars have suggested the existence of justice cycles in the past. Barsky and Kaplan (2007) hinted at this when they argued for the reciprocal relationship between justice and affect. Specifically they stated, “…affective reactions to
justice-related events (e.g., decisions, procedures, treatment)…likely stimulate both their concern for fairness and morality (e.g., Haidt, 2001) and their appraisals of subsequent work events, which in turn engender and reinforce additional affective reactions.”
Therefore, if an individuals’ injustice perceptions are influenced by their emotional state—which are known to cycle up and down over time—then one should witness a similar amount of systematic variation in that individual’s injustice perceptions overtime.

*Study goals.* The goal of this study, therefore, is to take a dynamic view of justice. In doing so, I hope to explore and describe the several facets of injustice perceptions that have yet to be examined (i.e., the frequency and intensity of perceived unfair events). This study maintains that one way to learn about the elements of dynamic justice is by examining justice in conjunction with other constructs that are dynamic and related to justice perceptions. One such construct is affect (e.g., Hedges, Jandorf, & Stone, 1985; Stone et al., 1985; Weiss, Nicholas, & Daus, 1999).

The way in which I have chosen to examine justice in this study is based on two primary assumptions. First, individuals’ affective states color the way they interpret and internalize subsequent workplace events. Second, systematic variation in affect is the primary driver of any similar systematic variation in injustice perceptions witnessed herein. Said differently, I assume that affect is the “Egg” and injustice perceptions are the “Chicken”. I am not stating that unfairness does not spur negative emotions; rather, that without emotions, injustice is unlikely (if not impossible) to be perceived at all. Hence, in order to understand injustice perceptions, one must first understand affective experiences.
Following this logic, the first step for justice scholars is to examine how justice perceptions are influenced by affect. Then, we can move on to examining how injustice sways subsequent emotional states. Additionally, affective traits, or longer-term predispositions to experience certain feelings, should also affect longitudinal justice perceptions (cf. Cropanzano, Weiss, Hale, & Reb, 2003). Specific hypotheses regarding state and trait-level affect are put forth later in this paper.

Affect

Affect refers to one’s feelings (Russell & Feldman Barrett, 1999). Researchers are generally in agreement that temporary or state-level affect can be of either the mood or emotion variety; and, that trait-level affect is a more stable character trait (e.g., Kaplan, Bradley, Luchman, & Hayes, 2009). In other words, affect can be studied in its fleeting state-level form, either as a momentary emotion or as a slightly longer term mood; or, it can be examined as a trait-level variable based on the assumption that it acts like any other individual difference--demonstrating stable and consistent differentiation between persons over time.

*Affection states: moods vs. emotions.* Moods and emotions both contain affect, but they do so in different proportions. Mood can be thought of as an all-encompassing, consciously accessible, affective state (Russell & Feldman Barratt, 1999). Emotions, on the other hand, tend to be tied to specific targets, such as events or objects (Oatley & Jenkins, 1996; Russell & Feldman Barrett, 1999). Mood is generally understood to be of lower intensity than emotions (Oatley & Jenkins, 1996). Emotions, on the other hand, can overpower thought processes in a way that moods tend not to do (Brief & Weiss, 2002).
Emotions, while more powerful in intensity, also tend to be a shorter duration, burning out quickly. Though less intense, moods can carry-on for longer durations of time than emotions (Fredrickson, 2001; Russell & Feldman Barrett, 1999).

The structure of affect. Individuals often experience multiple affective states at the same time. For example, an individual that describes themselves as happy would probably also endorse a statement saying they are satisfied. These co-occurrences of affective states create a pattern of covariances that depict the relationship between affective states. This structure is best illustrated as a circumplex (Russell, 1980). This circumplex is used by researcher to reduce the number of dimensions that describe affective experiences by relating states that tend to co-occur.

As mentioned earlier, the main distinction between emotions and moods is that moods tend to be more diffuse and need not be tied to a specific event or object while emotions can change more rapidly and are tied to a particular occurrence or entity (Frijda, 1986). The mood (which is composed of various emotions) can be rotated to either distinguish between positive activation (PA; e.g., “elated” vs. “drowsy”) and negative activation (NA; e.g., “distressed” vs. “calm”) dimensions (Russell, 1980; Watson & Tellegen, 1985), or hedonic tone (e.g., “happy” vs. “sad”) and activation (e.g., “aroused” vs. “still”) dimensions (Russell, 1980; Larsen & Diener, 1992).

Jointly, hedonic tone and activation explain covariance among affective states. Hedonic tone is defined as the pleasantness or unpleasantness of moods. Activation, on the other hand, depicts level of excitement or arousal. The PA/NA rotation describes this structure is a slightly different way. More specifically, it blends activation and hedonic
tone to form two independent dimensions (i.e. PA and NA) and suggests that positive and negative moods occur independently of one another. Positive affect (PA) is defined as the occurrence of feelings such as energetic, enthusiastic, and active (Watson, Clark, & Tellegen, 1988) while negative affect (NA) refers to the experience of feelings like guilt, fear, anger, and general stress (Watson & Clark, 1984). Organizational scholars have utilized both rotations in past research (e.g., Brief, Burke, George, Robinson, & Webster, 1988; George, 1989; Weiss, Nicholas, & Daus, 1999). The current study employs the PA/NA rotation. Future research may wish to explore similar research questions with a focus on hedonic tone and activation given that these two rotations, while both accounting for covariance between affective states, do not equally relate to other variables.

Integrating Justice and Affective States

Affective Events Theory (AET; Weiss & Cropanzano, 1996) describes the bi-directional relationship between affect and justice perceptions; and, it is this theory which guides the present research. The publication of AET marked an important integration of findings from research in both social and organizational psychology. AET argues that one must not only measure cognitive evaluations of a job-related events, as more traditional work attitudes models prescribe (e.g., Smith, Kendall, & Hulin, 1969), but also affective responses in order to account for affectively-driven workplace attitudes and behaviors. AET posits that specific workplace events bring about specific emotions. This, in turn, drives spur-of-the-moment affectively driven behaviors like organizational citizenship behaviors and work withdrawal. According to AET, perceptions of unfair treatment
should also bring about these emotional outcomes (for a review see Cropanzano et al., in press; see Barsky & Kaplan, 2007 for a meta-analysis). For example, research has found that individuals experience anger when treated unfairly and happiness when treated fairly (Krehbiel & Cropanzano, 2000; Mikula, 1986; Weiss, Suckow, & Cropanzano, 1999). However, we have let to learn how justice perceptions and affect change over time both within and between-persons. It is likely that important time-sensitive relationships between justice perceptions and affect may have been missed due to cross-sectional research designs that ignore within-person and hour-to-hour variance on the job (Weiss & Cropanzano, 1996).

**How does state affect impact justice judgments?** Many prominent justice theories argue that individuals engage in heavy cognitive processing before rendering an assessment of the fairness (or unfairness) of workplace events. For example, equity theory (Adams, 1965) states that individuals weigh their inputs against their outputs in order to create fairness perceptions. Furthermore, Fairness Theory (Folger & Cropanzano, 2001), and its cousin Referent Cognitions Theory (Folger, 1993), both put forth cognitive models to describe the formation of justice perceptions. However, there is a growing body of literature suggesting that affect and justice are even more closely related than previously thought (for a review see Cropanzano et al., in press). For example, Barsky and Kaplan’s (2007) meta-analytic work demonstrated that state and trait-level PA and NA have statistically significant relationships with perceptions of all three types of justice (i.e., distributive, procedural, and interactional) with mean population-level correlation coefficients ranging in magnitude from .09 to .43.
There are numerous reasons to expect affect to impact justice evaluations. First, individuals experience higher levels of PA report greater liking and more positive conceptions of others. Individuals experiencing NA, on the other hand, tend to display the opposite effects (Forgas & Bower, 1987; Griffit, 1970; Veitch & Griffit, 1976). As further evidence of the linkage between justice and affect, liking others has been found to be closely related to egalitarian principles and less so to equity-based principles of justice (e.g., Deutsch, 1975; Lamm & Schwinger, 1980). As an example of this, Sinclair and Mark (1991) found that subjects who were induced into a positive or negative mood state displayed more endorsement for egalitarian macrojustice principles than depressed subjects who were induced to feel negative emotions.

In line with this idea of dual precursors (i.e., cognitions and emotions) spurring justice perceptions, Barsky and Kaplan (2007) argued that justice perceptions result from the interplay between cognitions and feeling states (Forgas, 1998; Van den Bos, 2007). In support of this notion, van den Bos (2003) found that participants rated processes as more procedurally fair when they were subject to a positive mood induction and less fair when they received a negative mood induction. Moreover, one caveat in their findings was that the effect was only apparent when participants were unsure of the procedures employed—further emphasizing the role that affect can play when limited information is available to individuals.

*How do justice perceptions impact state affect?* As mentioned above, justice scholars acknowledge that affect can influence subsequent justice perceptions. However, they also recognize that justice perceptions can influence affective states (Cropanzano et
al., in press; Cropanzano et al., 2000; van den Bos, Poorvliet, Maas, Miedema, & van den Ham, 2005). In fact, experiencing just outcomes and procedures leads to increased satisfaction with outcomes (van den Bos et al., 1998), increased levels of happiness, and more overall positive affect (Tyler & Smith, 1998; van den Bos, 2001; Vermunt, Wit, van den Bos, & Lind, 1996). On the flip side, outcomes and procedures that are deemed unfair can lead to increased resentment and anger against authority figures that are perceived to be involved in the decision making process (Folger, Rosenfield, Grove, & Corkran, 1979; van den Bos et al., 2005), more personal sadness about the treatment one receives (De Cremer, 2006a; van den Bos & Miedema, 2000), and added overall negative affect (De Cremer, 2006b). Therefore, the following predictions are made:

**Hypothesis 1a, Within-Persons:** There will be a positive relationship between state-level negative affect and the extent to which an injustice event is perceived to be unfair. Said differently, state-level negative affect will influence injustice perceptions.

**Hypothesis 1b, Within-Persons:** Injustice perceptions and state-level affect will reciprocally influence each other. Said differently, injustice perceptions will also influence individuals’ subsequent state-level negative affect immediately following an unfair event.
Hypothesis 1c, Within-Persons: There will be a positive relationship between state-level negative affect and the total number of injustice events logged during the course of the study.

Affect and Justice Cycles

In addition to the aforementioned hypotheses, it is also posited that perceptions of injustice and state-level affect will cycle over the course of a work week. There is much research that has demonstrated the cyclical nature of affect at work (Larsen & Kasimatis, 1990; McFarlane, Martin, & Williams, 1988; Stone, Hedges, Neale, & Satin, 1985; Weiss et al., 1999). For example, Weiss and his coauthors found individual differences in the extent to which the cycles they were studying accounted for variance in mood, further stating that it seems individuals vary in their cyclicity on pleasantness and activation at work; although, these scholars did not offer reasons for this occurrence. Also, some research has found definite 7-day cycles in daily mood (Larsen & Kasimatis, 1990), while other studies have provided support for weekly affective cycles (Stone et al., 1985). Furthermore, the work of Weiss and Cropanzano (1996)—who argued that fluctuations in affective states result from both exogenous and endogenous factors—provides the theoretical framework used to make these predictions. Weiss and his colleagues (1999) affirmed and added to this statement by saying that exogenous factors “serve as shocks to underlying regular patterns of affect” (p.6). Justice scholars, however, have yet to examine how fluctuations in daily and weekly affect impact fairness perceptions.
Hence, there is clear utility in examining the nature of affective cycles in conjunction with justice phenomenon. Therefore, it is posited that state-level affect will impact justice perceptions (and vice versa); and, that these perceptions will display a cyclical pattern roughly equivalent to that of an individuals’ affective daily and weekly patterns. In short, there should be lawful fluctuations in justice perceptions that are significantly correlated with affective cycles:

*Hypothesis 2, Within-Persons:* Injustice perceptions will display a cyclical relationship with state-level negative affect. Said differently, the amplitude of injustice perceptions will cycle in tandem with negative affect.

Integrating Justice and Affective Traits

In addition to studying injustice perceptions over time, an aim of this study is to understand the effects of dispositional variables with affective components (e.g., trait-level affect). That is, individual difference variables that say something about how persons affectively react to justice-relevant events.

Previous research has found that individual differences can influence reactions to justice events. For example, Larsen, Diener, and Cropanzano (1987) found that individuals show consistent variation in the intensity of their affective reactions. And, compared to individuals with low levels of affect intensity, participants with high trait-level affect intensity tend to show larger affective responses towards justice-relevant events (Van den Bos, 2007; van den Bos, Maas, Waldring, & Semin, 2003). Therefore, it
logically follows that individual differences in trait-level affect-relevant could be used to predict differences systematic differences in level of justice perceptions. Furthermore, individual high in negative affectivity should be more likely to label event as unfair than someone low in negative affectivity.

According to AET, there are two ways in which dispositions can impact state-level affect. The first is via a direct effect, such that mean levels of each of the individual difference variables influence state-level affect at work. The second occurs in the way individuals react to negative and positive workplace events. By synthesizing these two statements, it can be argued that individual differences should predispose people to respond in certain ways to events or objects (Weitz, 1952; Carver & White, 1994). Therefore, it is posited that:

*Hypothesis 3, Cross-Level:* Trait-level differences in negative affect will moderate the within-person relationship between injustice perceptions and state-level affect. For example, higher trait-level negative affect will increase the magnitude of the relationship between state-level negative affect; and, the extent to which an event is perceived to be unfair.

*Hypothesis 4, Between-Persons.* Trait-level negative affect will be positively related to state-level negative affect.
Some additional relevant research has found trait-level differences in NA and PA on distress symptoms. Specifically, Parkes (1990) found that teachers who were high in NA were more distressed than teachers low in NA when in a perceived stressful environment. Marco and Suls (1993) also conducted research that indicates high NA individuals take longer to recover from stressors than those low in NA when a stressor was present. However, high NA individuals experience levels of emotion that were comparable to low NA individuals when not in a stressful environment. In other words, individuals both high and low in NA had a similar emotional baseline when not in a stressful environment. This work suggests that individuals high in NA are more reactive to stressful events. Therefore, it is hypothesized that these individuals will also be more sensitive to injustice events and identify more injustices than individuals low in NA. Specifically, it is posited that:

*Hypothesis 5, Between-Persons.* Trait-level negative affect will be positively related to the total number of injustice events logged during the course of the study.

Experience Sampling

The aforementioned hypotheses are time-dependent, which precluded the use of cross-sectional methodology. Cross-sectional designs, while well-suited as a tool to explore between-persons relationships, are unable to tap within-persons processes that are anticipated to vary systematically or change over time.
Even as far back as 27 years ago, scholars were already beginning to lament the “methodological stalemate” in the mood and job attitude/behavior literature (Larson & Csikszentmihalyi, 1983). The lack of longitudinal research is especially noticeable in the organizational justice literature where cross-sectional research designs are standard practice and no research to date has explored how justice perceptions change overtime and within individuals. For example, in a typical justice study, subjects are asked to recall how they perceived the fairness of some workplace event long after it has occurred. This retrospective recall introduces unwanted bias and error into research that is conducted with the purpose of understanding the experience of unfair events (and not the memory of those events). Additionally, when there is a misfit between theory and study design, this can lead to potentially inaccurate conclusions (Glomb & Miner, 2002; Hulin, Miner, & Seitz, 2002; Ilgen & Hulin, 2000; Miner, Chernyshenko, & Stark, 2000).

Experience Sampling Methodology (ESM) is one method that presents a useful solution to the disconnect between theory and study design. By employing ESM, researchers can examine everyday experiences, emotions, moods, attitudes, and behaviors in their natural context with little retrospective recall burden placed on subjects (Hormuth, 1986). Data collection can occur at random or scheduled intervals during the course of a study. Furthermore, by asking subjects to rate their current state, ESM-based studies are able to achieve a level of authenticity of the data that is difficult—if not impossible—to accomplish with “single-shot” survey-based study designs. ESM data are also less subject to biases that can be introduced when participants are asked to recall events (Alliger & Williams, 1993). Subjects in an ESM study need not summarize or aggregate past
psychological or behavioral states due to the small time frame for recall (only a few hours at most). The elegance of ESM is that assessments are made in real-time as workplace events unfold.

With recent advances in computer technology, ESM studies are more accessible and less costly than before. Prior to the advent of palmtop computers and personal digital assistants (PDAs,) researchers desiring to conduct an ESM study would have to equip subjects with wristwatches or beepers and paper diaries to collect this type of data. With current technology, participants only have to carry a single self-contained mini-computer pre-programmed to signal them, present questions, and store their responses. Additionally, these computers eliminate the ability for participants to complete surveys at times other than when they are signaled—a serious problem in past ESM research (Bolger, DeLongis, Kessler, & Schilling, 1989).

Despite the benefits of this technology, its intrusive nature can be a significant disadvantage. ESM studies generally require a substantial commitment of both time and effort by subjects and experimenters alike, in comparison to traditional cross-sectional designs which tend to be less time-intensive. Therefore, it is extremely important for researchers to create a “research alliance” between the participants and themselves (Larson & Csikszentmihalyi, 1983). The researcher should make certain that participants understand that they are an integral part of the research effort. Ideally, if participants understand that they their cooperation and responses are important, this knowledge should mitigate feelings of intrusiveness and act as motivation for participants
to tolerate repeated intrusions in their lives during the course of the study (Alliger & Williams, 1993).

In addition to its intrusiveness, another disadvantage of ESM is that it can interfere with natural processes (Alliger & Williams, 1993), or create new processes by priming subjects’ sensitivity to the variables the researcher is studying (Feldman & Lynch, 1998). In order to mitigate this, researchers can randomize the order of items present at each signal or use an item response theory-based model (IRT) to choose different items at each prompt that similarly tap the construct under examination. The former technique was employed in the current study due to constraints associated with the experience sampling computer program chosen for this research. That said, it is important to note that an IRT based approach would have been superior to the random item-ordering technique used in this research (for a thorough explanation of the benefits of using IRT in psychological research see Embretson & Reise, 2000); and, future experience sampling research in this area would benefit from the use of IRT with regard to momentary survey construction.

To summarize, using ESM allows one to access a different pool of variance than is possible in between-person studies. Attitudes and perceptions that involve state-level variables can be modeled to describe when and how attitudes are formed and not merely who engages in this attitude formation. Moreover, ESM can test dynamic models of attitude formation that are not possible with the use of cross-sectional designs.
METHOD

In order to test the predictions of this study, a snowball sample of 70 working professionals were given pre-programmed palm pilots programmed to randomly beep throughout the workday to collect signal-contingent affective data. Participants filled out one morning survey at the very beginning of their workday and four randomly scheduled surveys between working hours over a three week period to answer questions about their state-level affect. Additionally, participants were instructed to initiate event-contingent surveys on their own immediately following a perceived unfair event.

Prior to the three-week experience sampling phase, subjects participated in a training session. During this session they were given a Palm Zire 21™ computer and trained in its use. The author conducted training sessions over-the-phone (or via the internet) and mailed participants the necessary materials when face-to-face meetings were not possible. Prior to participating in the training session, subjects completed the informed consent and pre-survey measures via a web-based survey engine in the comfort of their home or office.

Each individual was monetarily compensated in the amount of $40 upon their completion of the study. As additional incentive, participants were entered in a drawing for $500. Chances of winning the $500 were based on the number of completed signal-contingent surveys each participant completed over the course of the 3-week ESM data collection period. For example, if subject A completed 50 daily surveys and subject B completed 25 daily surveys, then subject A would receive twice as many lottery tickets and would be twice as likely to win the $500 as subject B. Participants were informed of
this incentive plan during the training session. Finally, 1.5 weeks into data collection, a hand-written thank-you note and a $5 Starbucks gift card were sent to participants’ designated mailing addresses. Past research has found that small gifts given during the data collection period increase response rates later in the data collection period compared with individuals that do not receive these gifts (Connor-Christensen, Feldman-Barrett, Bliss-Moreau, Lebo, & Kaschub, 2003).

Experience Sampling Surveys

The palmtop computers signaled scheduled surveys, administered items, recorded responses, and stored data for uploading at the end of the study. I created and administered surveys using the Purdue Momentary Assessment Tool, Version 2.1.2 (Weiss, Beal, Lucy, & MacDermid, 2004).

Morning surveys and signal contingent surveys. Each participant was signaled to complete one pre-scheduled morning survey and four randomly scheduled surveys per day on their palmtop computer. The signal-contingent surveys were set to occur at random intervals within an 8 hour block of time (the start and stop times were individually programmed based on participants’ work schedules and stratified so that signals were at least 30 minutes apart).

Each workday, for a period of three weeks, participants were signaled by an alarm that sounded every 30 seconds for a period of two minutes. Upon opening the cover of the palmtop computer, participants were presented with a screen that notified them that the “Questionnaire is Ready!” If participants tapped the “Ok” button within 5 minutes of the first beep, the palmtop computer would allow them access to the questions and begin
to administer the scheduled survey. If, however, the signal was ignored for 5 minutes or more, the palmtop recorded a missed signal and the computer shut itself off.

**Event-contingent surveys.** In addition to the signal-contingent affective surveys, participants were able to initiate their own event-contingent unfairness surveys. To initiate an event-contingent survey, participants began by turning on the unit, which brought them to Screen #1 (Appendix 3). Next, they clicked through to Screen #2. Upon reaching the second screen, individuals pressed the “Event Occurred” button. Once the event button was tapped, the program began to administer a set of questions used to assess both the type and severity of the unfair event.

As Gilliland (2008) and others (e.g., Beal, Weiss, Barros, & MacDermid, 2005) have argued, one of the potential difficulties with measuring dimensions of justice (e.g., intensity, salience, importance of justice concerns), or any other important workplace construct, is that researchers may make it more salient to participants by means of presenting them with measures to complete. The present study dealt with this issue by asking participants to self-initiate surveys when they perceived injustices instead of beeping them at random intervals to inquire as to whether any events had transpired since the last beep. Therefore, to the extent possible, the author made an effort not to needlessly prime participants to think about justice throughout their workday.

In addition to the aforementioned battery of injustice questions, participants also completed the state-level PANAS immediately after they responded to the injustice-relevant items. During the training session, participants were given explicit instructions regarding how and when to initiate an unfair event survey. To help participants remember
the distinguishing differences between the three types of injustice, a justice “cheat sheet” was affixed to the back of each Palm devices providing participants with definitions and examples of each type of justice. Participants were instructed to use this cheat-sheet as a reference during the study in the event they forgot the definitions of the injustice types or became confused.

Instrumentation

The initial survey consisted of the following measures: Colquitt’s (2001) Organizational Justice Scale—modified for the purpose of assessing overall workplace injustice as opposed to justice; the Job Descriptive Index (JDI; Smith et al., 1969); General Happiness (Weiss et al., 1999); the PANAS scale with items worded to assess trait-level positive and negative affect (Watson et al., 1988); Satisfaction with Neutral Objects (Weitz, 1952), Social Self-Esteem (Lawson, Marshall, & McGrath, 1979), Moral Identity (Aquino & Reed, 2002), and Perceived Control (Menon, 2001). Both the presentation of the measures, as well as the order of the items within each measure, was randomized using PHP script and an online survey format. A complete list of the pre-survey measures is located in Appendix 1.

**Overall injustice.** Recent research has found that overall justice perceptions mediate the relationship between specific justice facets and organizational outcomes (Ambrose & Schminke, 2009). Therefore, a measure of overall injustice was included in this research. To measure overall injustice perception, participants rated their agreement

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1 With the exception of trait-level PA and NA, participants’ scores on these measures were collected to be used as potential control variables; and, for the purpose testing additional hypotheses in the future.
with statements regarding the level of injustice they generally experienced at work. The scale used was a modified version of Colquitt’s (2001) organizational justice scale. Participants used a 5-point scale with endpoints labeled “To a Small Extent” and “To a Large Extent” to rate their agreement with distributive (4 items), procedural (7 items), and interactional (4 items) injustice statements.

*Job descriptive index.* The evaluations of coworkers, supervisors, pay, work, and promotional opportunities was obtained using the Job Descriptive Index (JDI; Smith et al., 1969), revised by Roznowski (1989). The facets assessing work, supervisors, and coworkers included 18 descriptive items each. The additional two facets, pay and promotion opportunities, included 6 items each. Participants rated each descriptive characteristic of their jobs on a three point “yes”, “?”, and “no” scale.

*General happiness.* Dispositional happiness was measured using the HM scale by Fordyce (1988). This measure consists of two sub-measures of general happiness. The first measure consists of an 11-point happiness/unhappiness scale, and the second is a set of questions referring to the amount of time spent in “happy,” “unhappy,” and “neutral” moods. Scores can range from 0 (unhappy) to 100 (happy). As argued by Weiss et al. (1999), this measure, while not generally considered a dispositional measure of happiness, shows substantial long-term stability consistent with dispositional measurement, therefore, it was appropriate to use in this context.

*Trait-level positive and negative affect.* Individual differences in positive and negative affectivity were measured using the PANAS scale (Watson et al., 1988). In order to assess trait-level positive affect (PA) and negative affect (NA), the directions
were phrased as follows, “...How often you do generally feel this way; that is, how do you feel on average.” The PA scale consisted of five items, such as, “excited” and “enthusiastic.” The NA scale consisted of five items, such as, “irritable” and “hostile.” Subjects rated their perceived level of each trait-level emotion using a 5-point Likert-type scale with the following labels, “never” (1), “rarely” (2), “sometimes” (3), “often” (4), and “almost always” (5).

**Neutral objects satisfaction.** The Neutral Objects Satisfaction Questionnaire (NOSQ; Weitz, 1952) was used to assess stable individual differences in reactions to harmless objects. Participants rated their satisfaction with objects such as “8 ½ by 11 inch paper” and “the color of stop signs” on a three point scale labeled, “dissatisfied” (1), “neutral” (2), and “satisfied” (3).

**Social self-esteem.** De Cremer and Tyler (2005) have argued that not all individuals value social respect equally. To assess this individual difference, I employed the Social Self-Esteem Inventory by Lawson et al., (1979). Participants rated 30 statements using a 6-point scale with endpoints labeled, “completely unlike me” (1) and “exactly like me” (6). Some sample items from this measure are, “I find it hard to talk to strangers,” “I am popular with people my own age,” and “I can hold people’s interest easily.” The negatively phrased items are reverse coded.

**Moral identity.** Individual differences in moral identity were measured using nine moral stimulus traits and 12 items designed to assess moral self-importance (Aquino & Reed, 2002). Participants were first instructed to think about the type of person that embodied the list of traits. Then, they answered twelve questions about their level of
moral identity using a 5-point Likert-type scale with endpoints labeled “strongly agree” (1) and “strongly disagree” (5).

*Perceived control.* This study used the three-item perceived control subscale from Menon’s (2001) measure of employee empowerment. The subscale consisted of three statements that participants rated their agreement on a 7-point Likert-type scale with points labeled, “strongly disagree” (1), “moderately disagree” (2), “slightly disagree” (3), “neither agree nor disagree” (4), “slightly agree” (5), “moderately agree” (6), and “strongly agree” (7). An example item from this scale is, “I can influence decisions taken in my department.”

**Palmtop Measures**

See appendices 3 and 4 for a comprehensive list of the items and response options associated with the palmtop measures.

*Morning affect survey.* The morning affect survey\(^2\) was programmed to beep at a specified time each morning of the workweek. Each participant’s palm was programmed to beep at the time they normally began their workday. Participants also received a reminder e-mail each morning to help them remember to complete their daily surveys. State-level PA and NA were measured using the PANAS scale (Watson et al., 1988). The state-level instructions were phrased as follows, “…How you do feel right now; that is, at the present moment.” The PA scale consisted of five items, such as, “excited” and “enthusiastic.” The NA scale consisted of five items, such as, “irritable” and “hostile.”

\(^2\) This study used a two dimensional structure of affect in accordance with the recommendations of Spain, Miner, and Hulin (in preparation). These scholars conducted a three-mode principal component analysis of daily affect at work and found that the two dimensional structure of affect worked reasonably well across all modes of assessment, including experience sampling.
Subjects rated their state-level of each emotion using a 5-point Likert-type scale with the following labels, “very slightly or not at all” (1), “a little” (2), “moderately” (3), “quite a bit” (4), and “extremely” (5).

**Workday affect surveys.** The PANAS was also used to assess state-level affect throughout participants’ workdays. The appearance of the items and the response format was identical to that of the morning survey. Participants were instructed to indicate how they felt when the beep went off (See Appendix 3, Screen #’s 3-4).

**Injustice surveys.** Participants were instructed to self-initiate a survey whenever they perceived an unfair outcome, procedure, or interaction during their workday. As mentioned previously, each person participated in a one-on-one training session with the author. Training sessions typically lasted between 45 minutes to an hour, depending upon the number of clarification questions asked by the participant. An integral piece of the training involved teaching participants how to identify and differentiate between the various types of injustice (See Appendix 2 for a copy of the paper-based training materials. Supplementary audio and video-based training materials are available upon request from the author).

Upon perceiving an unfair event, participants were instructed to power-on their palmtop computer and initiate an unfair event survey by tapping the “Event” button (Appendix 3, Screen #2). This brought them to a screen asking them if the unfair event they had just experienced involved an unfair outcome. If they answered “Yes”, they were then prompted to answer several questions about the unfair outcome, if they answer “No”, the program skipped over these questions and prompted them with another “Yes” or
“No” questions asking them if the unfair event involved an unfair procedure. Similarly, if they answered “Yes”, the program initiated several questions asking about the unfair procedure. If they said “No”, they encountered a third and final yes/no question asking if the unfair event involved interactional injustice.

The unfair event questions required participants to evaluate the event using a modified version of the appropriate dimension of Colquitt’s (2001) justice scale (See Appendix 3, Screens #’s 5-6, and Appendix 4). For example, if a participant answered “Yes” to the yes/no question asking about the involvement of procedural injustice, the participant was then presented with items that specifically focused on assessing the unfairness of the procedure they just encountered. A sample item from this scale is, “To what extent was the procedure applied inconsistently?” To answer these questions, participants tapped their stylus on one of five boxes on the answer continuum with endpoints labeled, “to a small extent” (1) and “to a large extent” (5). As noted earlier, unfair event questions were always followed by the PANAS (Watson et al., 1988, 1989) in order to capture individuals’ state-level affect at the exact moment they logged an event.

Post Survey

The post survey began with a battery of questions used to gauge participants’ evaluation of the study. Following these items, participants completed these measures: overall job satisfaction (Cook, Hepworth, Wall, & Warr, 1981; Kunin, 1955), organizational commitment (Meyer, Allen, & Smith, 1993), turnover intentions (Cropanzano, James, & Konovsky, 1993; Randall, Cropanzano, Bormann, & Birjulin,
1994) absenteeism (e.g., Mowday, Porter, & Steers, 1982), burnout (Demerouti, Bakker, Nachreiner, & Schaufeli 2001), and workplace deviance (Bennett & Robinson, 2000). A complete list of the post survey measures is located in Appendix 5.

**Evaluation of the study.** Several items asked participants to rate their experience with this study. Each person rated their overall satisfaction with the study, how much difficulty they had responding to the beeps, the number of instances when the palmtop failed to beep, reasons they missed beeps, and their overall impression of the training session. Additionally, space was provided for write-in comments for those who wanted to provide supplementary feedback.

**Overall job satisfaction.** Overall job satisfaction was assessed using a five-item scale consisting of four general satisfaction items and The Faces Scale. Participants were instructed to indicate which face most accurately depicted their feelings about their jobs. The Faces Scale (Kunin, 1955) has been used extensively with a large amount of success as a measure of overall job satisfaction (Cook et al., 1981). Participants were also asked the extent to which they agreed with the following four statements (“All in all I am satisfied with my job,” “In general I don’t like my job,” “In general I like working here,” and “I frequently think of quitting this job”) using a 7-point scale labeled, “strongly disagree” (1), “neither agree nor disagree” (4), and “strongly agree” (7).

**Organizational commitment.** Organizational commitment was tapped using Meyer and colleagues (1993) three-component measure of organizational commitment—explicitly, affective, normative, and continuance commitment. Participants were presented with 18 statements (six statements per facet of commitment). Some example
statements are, “This organizational has a great deal of personal meaning for me” (affective), “It would be very hard for me to leave my organization now, even if I wanted to” (continuance), and “I would feel guilty if I left my organization now” (normative). Participants rated their agreement with each statement using a 7-point scale with endpoints labeled, “strongly disagree” (1) and “strongly agree” (7).

Turnover intentions. Intention to turnover was measured using a three-item scale developed and tested by Cropanzano et al. (1993) and Randall et al. (1994). Participants indicated their agreement with the following statements, “I intend to leave this organization within the next year,” “I would leave my job if a position were available in another organization,” and “I intend to remain with this organization indefinitely,” (reverse coded). Participants responded using a 7-point Likert-type scale with points labeled, “strongly disagree”(1), “moderately disagree” (2), “slightly disagree” (3), “neither agree nor disagree” (4), “slightly agree” (5), “moderately agree” (6), and “strongly agree” (7).

Absenteeism. Absenteeism was measured using a three-item scale that assessed absence frequency (total number of times absent), lateness (number of instances of tardiness), and absence severity (total number of days absent). Measuring absenteeism in this manner is consistent with the recommendations of Mowday, Porter, and Steers (1982) as well as Martocchio and Harrison (1993). Participants were instructed to indicate the following figures based on the last 12 months: (1) the total number of days late for work, (2) number of days absent from work, and (3) number of times absent from work.
**Burnout.** The Oldenburg Burnout Inventory was used to measure participants’ level of job-related burn-out (Demerouti et al., 2001). Participants were presented with 16 statements—8 of which assessed exhaustion and 8 of which assessed disengagement. An example exhaustion item is, “There are days that I feel already tired before I go to work.” And, an example disengagement item is, “It happens more and more often that I talk about my work in a derogatory way.” Participants rated their agreement with the statements using a 4-point Likert-type scale with points labeled, “totally disagree” (1), “somewhat disagree” (2), “somewhat agree” (3), “totally agree” (4).

**Workplace deviance.** Workplace deviance was assessed with a 12-item scale of organizational deviance (behaviors directed at the organization) and a 7-item scale of interpersonal deviance (behaviors directed at other people) (Bennett & Robinson, 2000). Participants were asked to indicate on a 7-point Likert-type scale with endpoints labeled, “never” (1) to “daily” (7), the extent to which they had engaged in each behaviors during the past three weeks. A sample item from the organizational deviance scale is, “Taken property from work without permission.” A sample item from the interpersonal deviance scale is, “Said something hurtful to someone at work.”

**Analytic Techniques**

The experience sampling methodology employed in this study created multi-level, time-series data. Both of these characteristics of the data are advantageous for longitudinal theory testing. However, there are also challenges associated with analyzing this type of data. First, multiple levels on which the data exist must be accounted for in the analytic technique utilized (e.g., properly centered, and correctly aggregated when
necessary). Second, serial autocorrelation, due to the time-series nature of the data, can be problematic. Each one of these challenges is discussed below in turn.

Multi-level Analyses

The study designed used herein led to the collection of two distinct levels of data. Said differently, for the purpose of data analysis, there were two levels at which state-level affect could be understood—at the within-person level and at the between-persons level. Both the signal and event-levels were nested within-persons; that is, each person responded to multiple signals and most participants initiated one or more event-contingent surveys. For example, at the signal-level of analysis, the average within-person variation in negative affect over time was of primary interest. On the other hand, at the between-person-level of analysis the direct effects of trait-level affect on state-level affect and injustice perceptions were of interest.

Multilevel modeling (MLM) was employed to determine the amount of variance in state-level affect attributable to within-person variation over time versus variation due to differences between people. MLM is an analytic procedure that models multiple levels of data, and, can be used to analyze ESM data.

To summarize, the data were multi-level in nature and consisted of two levels. Level 1 was the signal-contingent or event-contingent measures: metrics obtained on the palmtop and analyzed with a focus on understanding how people react over-time compared to their average state. The hallmark of level 2 was between-person measures: scales administered either before or after the palmtop portion of the study and analyzed at
the between-person-level. The specific centering and aggregation techniques employed to test the hypotheses are discussed further in the Results section.

Finally, to deal with the inherent time-series nature of the data (i.e., serial dependence of the affective observations), both concurrent and time-lagged emotional states were used as control variables to control for the impact of residual emotional states when these were not of focal importance. Details regarding the specific control variables that were employed in each analysis are discussed in more depth in the next section.
RESULTS

As mentioned earlier, individuals were recruited for participation in a snowball fashion. The recruitment process is described below.

Participants

I began by creating an extensive list of everyone in my own social network for which I had either an email address or a phone number. I also utilized social networking sites such as Facebook and LinkedIn to contact individuals with whom I had weaker social ties, but still had a medium to use to contact those individuals. Next, I contacted each person on the list, informed them of the purpose of the study, and told them I was in the process of recruiting participants. Finally, participants were directed to a recruitment website designed to provide information about the research, instructions on how to indicate their interest in participating, and information regarding the compensation they would receive if they chose to participate.

Each person was also encouraged to send the webpage link to anyone else they knew who might be interested in participating. In this way, I was able to create the desired snowball sample effect. Anyone living in the United States, who worked at least 40 hours per week in an office environment (e.g., not a sole-practitioner working alone from home), was eligible to participate. See Figure 1 for a visual depiction of (a) the general geographic locale of participants and (b) the degree-of-separation (i.e., extent of the snowball network) of participants from the author. As is apparent from the figure, a large number of participants resided in Arizona and Illinois (the two states where I have lived the longest). This is to be expected given that a snowball sampling technique was
employed. Future research should consider using a random (or stratified random) sampling technique so results generalize to a wider group of individuals.

Table 1 summarizes the demographics of the sample (e.g., gender, age, and ethnicity). In general, participants worked in a wide range of jobs in both traditional white and blue collar occupations (e.g., architects, engineers, information technology consultants, elementary school teachers, and call center managers and representatives, to name a few). All participants worked during typical daytime hours (e.g., 8 a.m. to 5 p.m., Monday through Friday). In other words, none of the participants in this study worked during the evenings or on a rotating shift schedule.

Upon completion of the three week data collection period, feedback from participants was generally positive. For example, a little more than 50% of participants enjoyed participating in the study “A Great Deal”. Of the remaining participants approximately 40% enjoyed participating “A Little” and only 10% chose “Not at All”. See Table 2 for a summary of the participants’ reactions to the study.

Preparation of Palm Data

The raw data matrix from the palmtop computers was inspected to detect abnormal entries, incomplete surveys, and other anomalies. Of the 70 individuals that agreed to participate in the study, a total of 59 of the 70 had usable data at the end of the three week period. Reasons for exclusion of the 11 participants were completely random and based on the equipment malfunctioning or Palms being lost in transit. For example, one out-of-state participant mailed his/her palm back to the author at the end of the study, but the package was lost during shipment and never received.
Overall Description of ESM Data Matrix

The usable 59 participants completed 3,623 affect surveys (signal-contingent) and logged 160 separate unfair events (event-contingent). Their Palm Pilots beeped 4,481 times; and, approximately 80.8% of those beeps were answered within 5 minutes and resulted in the completion of a state-level affect survey. The average number of affect surveys completed per person was 61, with approximately 14 missed surveys per person over the course of three work weeks. Table 3 displays descriptive statistics for each item of the PANAS; and, it is separated into two comparison categories (i.e., “Unfair Event Occurred” vs. “No Unfair Event Occurred). Additionally, the Google Spider Charts\(^3\) shown in Figures 2a and 2b provide a visual depiction of the same information. As is evident from looking at the figures, the experience of an unfair events had more of an impact on state-level NA (i.e., less overlap between the “unfair event” and “no unfair event” polygons) than it did on state-level positive affect (i.e., the polygons occupy most of the same area in the figure).

As described in the Method section, the five daily affect surveys were composed of the same ten affect items (five NA and five PA items; Colquitt, 2001) and were presented in random order at each prompt. Thus, affect scores varied according to true variance on the underlying dimension plus specific variance on the items included in the measure—but not due to any ordering-related effects.

It is important to note that items were not balanced across the surveys. In other words, the same affect items were used to assess state-level positive and negative affect

\(^3\) Google Spider Charts allow for a visual comparison of the values of multiple attributes simultaneously.
dimension at each prompt. If replication of this study is attempted, it would be beneficial
to use a pool of positive and negative items chosen randomly, without replacement, at
each prompt over the course of a single day to create parallel—but not identical—
measures of affect. In doing so, measurement variance associated with each individual
item could be minimized. This technique is akin to randomizing the order of items
within a measure in a between-subjects design versus presenting the items in the same
order to each subject. In the prior example, measurement error can be introduced simply
due the ordering of the items. In experience sampling, however, measurement error is
also associated with the specific items used.

Some Descriptive Statistics from the State-level Affect Data

Participants’ responses to the individual PANAS items were aggregated into
momentary PA and NA scores. Any negatively worded items were reverse coded and
scaled appropriately. The three event-level injustice scales (i.e., DJ, PJ, and IJ) were
scaled in a similar fashion.

Generally speaking, there are several ways to measure the reliability of a measure,
or, the extent to which the measure assesses the same construct for every person each
time it is administered. The most well-know and often used index is coefficient alpha
(Cronbach, 1951). Alpha is a measure of reliability that can be obtained at a single
measurement occasion using merely the covariance among the items. Like all other
statistical indices, coefficient alpha has its own set of assumptions. One of the most

4 This item pool option was not an available built-in option on the PMAT program used for this study.
“formidable” being that of equally discriminating items. Said differently, in order to use alpha as an index of a measure’s reliability, one must assume that each item employed in that measure is equally predictive of (or strongly related to) the overall construct being assessed. In an experience sampling study, the usefulness of alpha is further restricted by the necessity for each item to be equally discriminating within-persons over time.

Given that this study explicitly posited that state-level affect would vary over-time, one wouldn’t necessarily expect consistency in responses to specific affect items over a very short period of time. Given the complexity of the research design, and a prior anticipation of variability in positive and negative affect throughout the day, the author examined consistency by conceptualizing each day of the study as a separate measurement occasion. Each day was not independent of the others; however, each new day offered an opportunity to observe the covariance among items across individuals and therefore, the consistency of the measurement instrument.

The reliability of state-level PA and NA was computed by obtaining coefficient alpha for each of the first 10 days of the study. These values indicate the average reliability of each set of items to measure the underlying affective dimension (plus an unknown amount of measurement error). Alpha coefficients for PA and NA were in the generally acceptable range, .79 to .88 for PA and .76 to .86 for NA.

Another noteworthy element of state-level affect is that it may fluctuate as a function of a number of factors other than the ones proposed in the hypotheses section of this paper. To describe these potential variables, the mean levels of positive and negative affect were compared across day of the week, and total number of days elapsed in the
study (out of a total of 15 days, i.e., 3 weeks). Table 4 shows that participants tended had similar levels of mean positive affect across the work week, but experienced slightly less intense level of negative affect later in the week on Thursday and Friday. There also appeared to be a slight trend for participants to report less intense feelings of negative affect as the study progressed—which has been noted in other ESM studies examining state-level affect (see Table 5). There was no observed trend for affect to consistently change based on hour of the day. However, results were based on data collapsed across participants who were working during slightly different times of the day and in various locations across the United States.

Some Descriptive Statistics from the Unfair Event Data

Forty-nine of the 59 participants reported at least one unfair event during the three weeks. In total, participants reported 70 unfair outcomes, 30 unfair procedures, and 96 unfair interactions. As described in the Method section, participants had the ability to label the unfair events that they logged as involving more than one type of unfairness—which is the reason why the total here (i.e., 196 events) is greater than the total number of separate events logged (i.e., 160 events). In other words, 59 unfair events involved two distinct types of unfairness and 5 events logged included all three types of unfairness. In short, 40% of the unfair events recorded involved more than one type of injustice. Table 6 displays a breakdown of how the unfair events were categorized by participants. To summarize the findings, interactional injustice was the most commonly cited type of unfair event, followed next by distributive injustice and then procedural injustice.
The reliabilities of the three injustice measures were computed by obtaining coefficient alphas for each of the respective scales. Both distributive injustice and interpersonal injustice\(^5\) displayed acceptable alpha levels (.72 and .74 respectively). PJ, on the other hand, did not show an acceptable level of reliability (i.e., .57) and was therefore not used in any further analyses.

There were a few notable differences between the ten participants who did not log any unfair events and 49 participants who logged at least one event. Notably, 100% of the no-event group was Caucasian compared to only 68% of the unfair-event group. Additionally, 100% of the no-event group was married as opposed to only 40% of the unfair-event group. These comparisons are post-hoc in nature. Therefore, they are meant to provide the reader with additional information to understand the demographics of this particular sample and should not be taken as true demographic differences that lead individuals to perceive, or not perceive, unfair events at work. Furthermore, the ten individuals in the no-event group had a much lower response rate than those participants who logged at least one unfair event (i.e., 67.5% versus 81%). Therefore, the group of ten participants that did not log any unfair events may have simply been less engaged in the study than those who did log events.

In addition to examining the qualities of the participants that may have affected the frequency or quality of the perception of unfair events, I also explored the events themselves. Specifically, I examined histograms depicting the frequency with which each

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\(^5\) In order to attain an acceptable level of reliability, the informational injustice items had to be dropped from the interactional injustice scale. Therefore, all hypothesis tests were conducted using the dimension of interpersonal injustice only and not informational injustice, as the informational injustice items significantly reduced the internal consistency of the full scale.
interval-level response option was selected for the DJ and IJ injustice scales. Also, I explored histograms showing the level of negative affect that participants experienced at the time of the unfair event—separated by the type of injustice logged (i.e., DJ and IJ). The reason for doing this was to determine if there were any notable differences between the quality or extremity of the responses based on the type of unfair event that was perceived. No obvious differences in the histogram comparisons were apparent.

Some Descriptive Statistics from the Pre and Post Survey Measures

The pre and post surveys included individual difference measures and reactions to the study. Scale reliabilities, displayed on the diagonal of Table 7, were generally within the appropriate range (with the notable exceptions of Overall Distributive Injustice, \( \alpha = .66 \); and Overall Interactional Injustice, \( \alpha = .59 \))\(^6\). Measures that were included in either the pre or post surveys (but not used to test any hypotheses in the current study) are included in the correlation matrix for the readers’ benefit, but are not mentioned any further in this paper.

In terms of reactions to the study, all comments were reasonable and anticipated. For example, several individuals reported that they missed beeps due to work-related tasks that prevented them from answering the prompts. Additionally, participants occasionally would forget to bring their Palm Pilot to work—although most participants chose to store their Palm Pilots on-the-job for the duration of study. The data are likely skewed to the extent that periods of high stress and time in meetings were under

\(^6\) Note that the Overall Injustice measures included in the pre-survey were not needed to test any of the a priori study hypotheses.
sampled—although it is impossible to know exactly how much bias may have been introduced in these ways.

Decomposition of Affective ESM Variance

The study hypothesized that affect and injustice perceptions would vary across persons and time. Prior to testing any of the a priori hypotheses laid forth in this paper, the respective amount of variance in state-level affect between and within-persons was estimated. First, an analysis was conducted to determine the amount of between-person and within-person variance in state-level positive and negative affect. The results of this analysis informed the rationality of continuing to test for both within and between-person relationships between negative affect and other variables in the study. Two general equations were employed to establish the amount of between and within-persons variance in NA and PA. The first equation listed below denotes the signal-level equation and the second denotes the person-level equation.

Signal-level: \( Affect_{it} = \beta_{0i} + r_{ti} \)
Person-level: \( \beta_{0i} = \gamma_{00} + U_{0i} \)

Where,

- \( Affect_{it} \) = state affect for person \( i \) at time \( t \)
- \( \beta_{0i} \) = mean state affect for person \( i \)
- \( r_{ti} \) = residual signal-level state affect not explained by the person’s mean state affect.
- \( \gamma_{00} \) = grand mean state affect
- \( U_{0i} \) = residual person-level state affect not explained by the grand mean state affect

Variance (\( r_{ti} \)) = \( \sigma^2 \) = within-person variance in state affect
Variance (\( U_{0i} \)) = \( \tau_{00} \) = between-person variance in state affect

In the equations above, the lowest level of analysis is the signal. Subscript \( t \) references signals, or sampled times of the workday. The subscript \( i \) references the
individual-level. Therefore, $Affect_{it}$ represents either the positive or negative affect score of the $i$th person at the $t$th signal. The ICCs for both negative and positive affect were computed using the following formula: $ICC = \frac{\tau_{00}}{\tau_{00} + \sigma^2}$. The ICC describes the ratio of between-person variance to the total variance, or the amount of variance that exist between-people rather than within-people.

Using the equations above, it was determined that within-person variance in NA was approximately .663, and between-persons variance was approximately .337. Said differently, roughly 66.3% of the variance in state-level negative affect was attributable to within-person variation over the course of the study and approximately 33.7% was attributable to between-persons differences. Similarly, about 56.9% of the variance in positive affect was due to differences between-persons. Consequently, 43.1% of the variance in PA was associated with within-person variation over-time (See Tables 8a and 8b for a summary of respective REML deviance tests for NA and PA).

In general, the large amount of variance within-persons in both positive and negative affect supported the use of a within-persons design to address hypotheses regarding the nature of affect in work settings. Ignoring within-person variance—and conducting only between-person analyses—would have ignored 66.3% and 43.1% of the total variance in negative and positive affect at work, respectively. As described earlier, analysis of within-person variance (which is less frequently examined in organizational research) can lead to completely different conclusions about relationships than analysis of between-person variance.
There is definitely nothing wrong with the process of aggregation when the research question focuses on more macro-level propositions. That said, when the researcher is interested in lower level propositions—focused at more micro-level phenomena—failing to examine the data at the correct level can result in extreme Type I and Type II errors (for a detailed explanation see Snijders & Bosker, 1999). In this study specifically, positive and negative affect both had significant amounts of variance residing between and within-persons, which further justified the need for a longitudinal study design and hypotheses grounded upon a dynamic theory of injustice.

Hypothesis Testing

In the analyses presented below, sample size, centering, and aggregation techniques varied on an analysis-by-analysis basis. The hypotheses laid forth in this paper required tests of both within and between subjects effects; and, efforts were made to use as large a sample as possible for each analysis. That said, some aggregation of the data was needed due to the fact that the a priori hypotheses made focused on mean level differences within and between-persons (as opposed to variances).\(^7\)

Prior to testing the within-person hypotheses, individuals’ momentary scores for negative affect were rescaled to have a mean of 0 and a variance of 1 within-persons over the course of the three-week study. Thus, NA scores were centered by examining each individual over time (as opposed to across all times and participants). Hence, at any given

\(^7\) Varying sample sizes across hypothesis tests is not problematic in this type of research. In fact, inclusion of more data in the appropriate analyses allowed for more precision regarding parameter estimation, higher statistical power to detect “true” relationships, and wider generalizability of findings. This point deserved mention given that the maintenance of equal sample sizes is very important when comparing conditions in experimental research. However, this rule-of-thumb does not hold for ESM studies.
time, a score of +1 on NA reflects a given individuals’ NA 1 standard deviation more unpleasant than that person’s general average—as assessed by the PANAS scale over the course of the three week study. All models used to test within-person hypotheses were estimated using a reduced dataset that dropped signals which did not occur at the event-level; and, aggregated injustice scores on a subject-by-subject basis.

For example, an average distributive injustice score was created for individuals who logged two or more events involving DJ. Momentary, non-averaged, scores were used for participants who only logged a single distributive injustice event—as it was impossible to calculate an average for those individuals. This aggregation technique was employed so that each participant would contribute equally in the estimation of the regression parameters, even if they logged more injustices than another individual. Furthermore, the utility of this system of aggregation was additionally underscored due the presence of a small number of extreme outliers (e.g., one participant logged 14 unfair events compared to an average of 2-3 unfair event logged by the vast majority of participants) in the data which would have significantly skewed the results so that the findings would not be an accurate representation of the vast majority of the participants.

*Within-persons hypotheses.* Hypothesis 1a predicted that there would be a positive relationship between state-level NA and the extent to which injustice events were perceived as unfair. In other words, negative affect was predicted to influence injustice perceptions. And, Hypothesis 1b predicted that injustice and state-level affect would reciprocally influence each other. In summary, state-level NA, and the perception of unfair events, were posited to act as as both predictor and criterion variables.
To test these two hypotheses, I employed a technique similar to that used by Dalal, Lam, Welch, Weiss, and Hulin (2009). More explicitly, I ran two models for both DJ and IJ, which assessed time-lagged and time-leading event-affect and affect-event relationships. For example, in the first model, participants’ evaluation of an unfair event at time $t$ was predicted by affect at time $t-1$. In the second model, affect at time $t+1$ was predicted using participants’ evaluation of the event at time $t$, while controlling for affect at the time the unfair event was recorded. Results from both models are displayed in Table 9.

To summarize the results for H1a, individuals’ were more likely to evaluate a distributive injustice as egregious if they were feeling more unpleasant than usual (i.e., a greater level of within-person centered negative affect than their personal 3 week average). In fact, within-person centered negative affect at time $t-1$ explained 27% of the variance in distributive injustice perceptions at time $t$ (i.e., the moment at which the unfair event was logged). This relationship, however, was non-significant for interpersonal injustice perceptions.

To test for the reciprocal relationship hypothesized in H1b, DJ at time $t$ was used to predict NA at time $t+1$, after for controlling for momentary state-level NA experienced at the time of the injustice event (i.e., NA at time $t$). After controlling for concurrent NA felt during the unfair event, DJ explained 14% of the variance in NA at time $t+1$; and, the full model explained 41% of the variance in NA at time $t+1$. To summarize, the greater the level of distributive injustice perceived, the more unpleasant individuals felt following the event compared to their average level of NA.
Hypothesis 1c predicted that there would be a positive relationship between state-negative affect and the total number of unfair events logged by each participant. Results for the test of this model are displayed in Table 10. In summary, there was a marginally significant association between state-level NA and the total number of unfair events perceived and logged by participants—although the direction of the relationship was the opposite of what was anticipated. Explicitly, individuals who felt less unpleasant than usual at the moment an unfair event occurred were more likely to log unfair events than individuals who did experience a more negative shift in mood at the time of the event.8

This need not be taken as an indication that within-person NA is inversely related to the level of egregiousness perceived in unfair workplace events. However, it may be the case, for example, that in order for someone to take action, and log an event, they need to be feeling slightly less negative (i.e., lower within-person NA) than their average/mean level. Explicitly, although negative emotions seem to be the precursors and consequences of unfair events, it appears as though elevated levels of NA may have inhibited participants’ ability or inclination to actually log events.

Clinical psychological research, for example, has found that severe depression tends to inhibit individuals ability to engage in any sort of behavior (e.g., Simon, Savarino, Operskalski, & Wang, 2006). In fact, severely depressed individuals are less at risk for committing suicide than those people who are slightly less depressed because they lack enough energy to take any action (e.g., attempting to kill themselves). So, in

8 It should be noted that NA at the time of the event was not significantly correlated with DJ scores.
effect, one must feel slightly less negative or depressed in order to have enough mental and physical energy to “take action”—whatever that action may be.

In the case of unfair workplace events, a decreased amount of state-level NA may be enough of a shift away from a negative mood state to increase the probability that an individual will act upon, or report, an unfair event. To be clear, this is not to say that NA isn’t correlated with the experience with of an unfair event; but, that one’s ability to act upon an event may be stunted by heavy negative emotions.

If these heavy negative emotions did indeed affect the participants in this study, then there may have been a number of unfair events that were not recorded by individuals who were feeling exceptionally “down” during the occurrence of the event. Without a doubt, additional research should explore this possibility since this is speculative post hoc theorization. Nonetheless, the reversal of direction in the expected relationship between state-level NA and total number of events logged, illustrates the importance of examining theoretical relationships at the within-person level in addition to between-person differences.

Hypothesis 2 predicted that the amplitude of event-based injustice perceptions would cycle in tandem with state-level NA. This hypothesis was not supported. First and foremost, unfair events occurred on a relatively infrequent basis (i.e., approximately 1 event logged per person per week). In order to have enough data to appropriately examine cycles, all three types of injustice events had to be aggregated. As mentioned earlier, the procedural injustice event-level measure did not display an acceptable level of
reliability to warrant its use in the analyses. Therefore, there was an insufficient amount of data to find the relationships. This point is further elaborated in the Discussion Section.

**Cross-level hypothesis.** To test for the hypothesized cross-level moderation effect of trait-level NA, an interaction term was created using within-person centered state-level NA at time $t-1$ and between-persons centered trait-level NA. Two models were estimated—one for DJ and one for IJ—using hierarchical linear regression with two-steps. Table 11 displays the results for the final models. The interaction terms were not significant for both DJ and IJ models. Therefore, hypothesis 3 was not supported. Additional discussion regarding the lack of significant moderating relationships is discussed further in the Discussion section.

**Between-person hypotheses.** The direct relationships among person-level measures and aggregated signal-level measures were estimated using linear regression and between-persons centered variables. Hypothesis 4 stated that trait-level NA would be positively related to state-level NA. And, hypothesis 5 stated that trait-level NA would be positively related to the total number of injustice events logged. Table 12 displays the findings associated with the between-persons hypotheses—which were both supported. In summary, trait-level NA explained 23% of the variance in state-level NA. Additionally, trait-level NA explained approximately 8% of the variance in the number of unfair events logged by participants during the course of the study.

Although not initially hypothesized, given the significant relationships found between trait level NA, state-level NA, and the number of unfair events logged, I decided to conduct an additional test to determine if state-level NA was mediating the relationship
between trait-level NA and the number of unfair events logged by participants.

According to Baron & Kenny (1986), for full mediation to be present, the effect of the independent variable (i.e., trait-level NA) on the dependent variable (i.e., total number of unfair events logged per participant) must become nonsignificant after controlling for the mediating variable (i.e., state-level NA). Indeed, when state-level NA was entered as a control variable, trait-level NA failed to display a significant effect on the dependent variable ($\beta = .25, p < .09$). These results support the post hoc hypothesis that state-level NA mediates the relationship between trait-level NA and the total number of unfair events that participants perceive at work. As this was a post hoc analysis—driven by the significant findings in the study as opposed to a priori considerations—future research should replicate these findings prior to making any strong assertions regarding the meditational qualities of state-level NA.

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9 Some additional post hoc tests were run on the data to determine if there were any relationships among the variables to warrant future research. Specifically, I tested for relationships between the several independent variables (i.e., state-level NA, total number of logged unfair events, and distributive injustice event-based ratings) and the outcome measures assessed in the post survey. Only one of those relationships was significant. Explicitly, the total number of unfair events logged was positively related to participants’ assessment of interpersonal workplace deviance ($\beta=.35, p<.05$).
DISCUSSION

The findings of this study bring to light several important characteristics of the relationship between affect and injustice perceptions. First, the majority of variance in negative affect (66.3%) was due to fluctuations within-individuals over-time rather than differences between-persons. Said differently, participants in the study differed more across time than they did from each other in terms of their negative affect. Second, within- person variation in NA experienced immediately prior to an unfair event explained approximately 27% of the variance in distributive injustice scores; and, those injustice scores explained around 14% of the variance in NA immediately after the event. Clearly, these results support the notion that the perception and experience of injustice is affectively-laden. Furthermore, these findings reaffirm the importance of examining injustice perceptions using research designs that are able to tap within-person variance over-time.

By incorporating ESM into the study design, it was also possible to establish a causal direction for the affect and injustice relationship; and, to show that affect and injustice perception can be conceptualized as both predictor and criterion variables—although it appears that the affect to injustice relationship is a bit stronger than the injustice to affect connection. Specifically, participants’ level of negative affect prior to an unfair event explained 27% of the variance in the perception of the outcome. Additionally, their perceptions of the unfair outcomes explained 14% of the variance in their level of negative affect following the event. Of course, future research should test the veracity of the aforementioned statement by means of study replication and extension.
Although this study was primarily designed to address within-person relationship that had not formerly been examined in the justice literature, some cross-level and between-persons predictions were made. The predicted cross-level hypothesis was not supported by the data. In short, trait-level NA was not found to moderate the effect of within-person state-level NA on injustice perceptions. Perhaps this insignificant finding may have been an artifact of the manner in which trait-level data was collected, rather than evidence of the nonexistence of this moderating factor. Explicitly, trait-level NA data was collected via self-reports in the online pre-survey prior to the three-week ESM data collection period. To the extent that individuals are able to accurately assess their trait-level NA, this is a valid measure. However, we saw that individuals’ trait-level NA scores only explained about 23% of the variance in their state-level NA scores. If we are to conceptualize trait-level differences as rough averages of state-level variables, then it is safe to say that the participants in this study were not very accurate at assessing their trait-level NA. On the other hand, if one believes that trait-level differences is more than the sum of state-level affective occurrences, then it remains to be seen whether trait-level NA can be accurately assessed via self-reports measures taken at a single moment in time. Regardless, future research should examine the potential moderating relationship between trait and state-level NA further.

Regarding the between-persons hypotheses, both predictions were supported. Specifically, as mentioned above, trait-level NA did explained approximately 23% of the variance in state-level NA and 8% of the total variance in the number of unfair events logged. These findings suggest that continued research attention should be directed at
understanding between-person factors in addition to examining currently less understood within-person injustice processes and perceptions.

Unsupported Predictions

Interactional injustice predictions. Although many predictions were supported—especially those made prediction about distributive injustice events, the same predictions were not supported for interpersonal injustice. Methodological artifacts of the study could potentially account for the non-significant findings. First, the Palm Pilots were programmed to allow participants to label unfair events as involving more than one type of injustice (see Table 6 for a breakdown of how the unfair events were categorized by participants). Because participants were given this flexibility when categorizing events, it is unlikely that each unfair event labeled as interactionally unfair was equivalent in the extent to which IJ affected the participant’s overall perception of the unfair event. For example, a participant could have logged an unfair event after finding out she had been denied a raise; and, labeled that event as both DJ and IJ. And, that same participant could have perceived, and logged, another unfair event during the study that was spurred by overhearing a coworker talking behind her back about not deserving said raise—and also labeled that event as both DJ and IJ. However, in the case of those two unfair events, the first event would have been more heavily laden with distributive injustice and the second event would likely have been driven more by a perception of interpersonal injustice than an unfair outcome. Nonetheless, due to the nature of the study design, both events would have be logged in the same manner and would have been counted in the same way for the purpose of hypothesis testing.
Second, given that interactional fairness was the most commonly cited type of unfairness, it may be the type of unfairness with the broadest/loosest definition. In other words, although all participants were trained in the definitions of DJ, PJ, and IJ prior to the beginning the study, the vagueness of the IJ definition in the justice literature (compared to that of DJ and PJ)\textsuperscript{10} may have led participants to widely vary in the types of events that they defined, and consequently perceived, as unfair both between participants and within-persons overtime. If this is true, it could have led to the inability to uncover significant findings due to muddiness of the IJ data. In a similar vein, the definition for interactional injustice combines both interpersonal injustice and informational injustice into a single entity. This may have also made it more difficult for participants to conceptualize this type of unfairness in a similar manner; and, for individual participants to maintain the same definition IJ over the course of the three-week study. Future research efforts in this area should pay attention to the way in which participants mentally define injustice; and, put thought towards determining the best way to train participants so that they adopt similar mental models of the three injustice dimensions.

\textit{Procedural injustice predictions.} Unlike the distributive and interactional injustice measures, the procedural injustice scale did not demonstrate a high enough level of reliability to permit hypothesis testing (i.e., $\alpha=.57$). The reason(s) for this low level were not immediately clear. Procedural injustice was the most infrequently cited type of unfairness. Therefore, the unfortunately low scale reliability obtained in this study may

\textsuperscript{10} Distributive Injustice: Perceived unfairness regarding the amount and allocation of rewards. Procedural Injustice: Perceived unfairness of the process used to determine distribution of rewards. Interactional Injustice: Perception you have been treated disrespectfully with a lack of dignity and concern and /or important information has been withheld from you.
have been an artifact caused by not having enough data to demonstrate scale reliability between participants. This, however, is mere post hoc theorization. Future research conducted along these lines should consider whether or not the examination of procedural injustice is feasible depending on the length of the proposed data collection period. It may have been possible to obtain a more internally consistent PJ measure if the ESM portion of the study had lasted for a longer period of time. However, that remains to be seen and future research should ensue.

Cyclical predictions. The prediction made in hypothesis 2 stated that the amplitude of event-based injustice perceptions would sequence in tandem with state-level NA. This hypothesis was not supported. In addition to the low reliability of the procedural injustice measure, which prevented aggregation of the injustice data, the relationship between injustice perceptions and negative affect only exhibited a significant relationship when examined within-persons, but not between-persons. In other words, when participants displayed a change in negative affect compared to their typical level of NA, relationships between affect and injustice emerged. However, these relationships were not evident when the data was examined only on the between-persons level. Said differently, it appears as though participants compared their typical emotional state to their current level of unhappiness/negativity/unpleasantness at the moment when they perceived an unfair event. In essence, they seemed to have used their affective state (compared to their average/normal state) as information upon which to judge the egregiousness of an unfair event.
In fact, the concept that people use their emotional states to inform their perceptions of events has been studied quite extensively (Clore, 2001; Clore, Schwartz, & Conway, 1994; Keltelaar & Au, 2003; Mullen, 2007; Stephen & Pham, 2008). All else equal, individuals who feel more negative affect are likely to perceive that they have been subject to something inappropriate than those who do not feel as much NA. In short, we do not always have enough factual information to determine if we have been treated fairly. Therefore, we use what is available to us at the time—in this case, affective information.

Study Limitations

Clearly, ESM research is a powerful tool that can be used to gain access to the interworking and perceptions that permeate organizational life. That said, it is not a methodological panacea; and, is accompanied by its own set of limitations. First, researchers seeking to understand injustice perceptions in the workplace should consider whether study participants’ behavior is limited or constrained in any way by the methodology used to collect the data. In this specific study, individuals opted-in as participants. In other words, the sample was not random. Because of this constraint, generalizations cannot be made to the entire population of working Americans. Furthermore, the invasiveness of the study design may have caused potential participants to decide not to participate. As described in the Method section, participants were beeped several times throughout their workday for three consecutive work weeks. Although the Palm could be silenced for meetings, phone calls, etc., it is likely that individuals who
worked in very quiet offices or open cubicles were less likely to participate than individuals who had their own personal working space.

*External validity.* In a different vein, participants were informed that the purpose of this study was to examine perceptions of workplace unfairness. Participants were told that they didn’t need to believe they were frequently treated unfairly at work in order to participate. That said, the nature of the study may have made it more appealing to individuals who perceived their workplace to be a consistently unfair environment. Therefore, the sample may have been biased towards individuals who perceive their workplace as unfair. However, it should be mentioned that there were several participants who did not log any unfair events during the course of the study. For that reason, it appears unlikely that everyone who participated viewed their workplace as extremely unfair. In fact, there were quite a few participants who were very apologetic at the end of the three weeks because “nothing unfair happened to them” even though they had been told several times prior to, and during the study, that their data would be just as useful regardless of whether or not they logged any unfair events.

*Serial dependence.* To the extent possible, serial dependence of the affective measurements was removed using a lag 1 model to control for mood at the prior measurement time. That said, it would be impossible to achieve the complete removal of serial dependence in the within-person data in the current study. Because repeated affective observations were made on the same participants over-time, data from any given participant was inherently related to other data from that same participant. Even so, all point estimates or parameters were, by the very nature of regression, unaffected by
this issue. The parameter estimates presented in this paper were not impacted by the extent of dependence among observations; and, they can and should be interpreted as unbiased estimators of their respective population parameters.

*Common method variance and response biases.* In some ways, this study shares similar limitations with much of the published justice field research. In short, all of the variables in this study were collected as self-reports from individuals, using either single-shot pre and post survey measures, or a Palmtop computer. Because all of the variables were based on self-reports, they may suffer from issues related to common method variance. One way in which this could impact the data is to cause these variables to be spuriously correlated due to consistencies in option use, manipulation of responses or socially desirable responding. In order to reduce this bias as much as possible, the order of the state-level PANAS items was randomly presented at each signal; and, the presentation of surveys were randomly schedule throughout individuals’ workdays. Nonetheless, common method variance is still remains a limitation in this research.
CONCLUSION AND FUTURE RESEARCH

An emerging trend over the past decade has been the use of multilevel-analysis in organizational behavior and other social sciences. And, due to lack of multilevel research merging justice and affect, there is still much to be learned about how these complex constructs interact with each other at different level of analysis. As mentioned earlier, the new concept called dynamic justice that was examined here, acknowledges the multilevel nature of the injustice construct by explicitly positing that individuals’ emotions and unfairness perceptions vary as events occur over the course of time. (i.e., within-person effects), while also acknowledging more stable overall or composite justice perceptions.

Below suggestions for future multi-level justice and affect research are put forth that can be used to tap both within and between-persons processes.

Some Suggestions for Future Research

In addition to within-person variation and change in emotions and justice, by taking a multilevel perspective, researchers can observe how these constructs behave between-persons; and, if variables at the between-persons level of analysis impact variables at the within-person level. Although not generally thought of as a trait-level difference, it is possible to conceptualize unfairness perceptions as a trait. For example, some individuals may be more likely to view a given event as “unfair” than another person. Said differently, some people view the world as a more unfair place (i.e., where more unfair events occur) than others. That is, if two people label the same event as unfair (e.g., a company-wide pay cut), there may still be individual differences in the
perceived magnitude or egregiousness of an unfair event even after controlling for confounding variables.

Rethinking Individual Differences as a Cross-Level Phenomenon

When most people think about individual differences, the idea of “stability” comes to mind. In other words, we conceptualize these differences as a portion of the individual that is consistent across time after controlling for contextual or environmental characteristics that are outside of one’s control. For example, Ashkanasy (2003) describes trait affectivity as a “…personal disposition to be in a long-term positive or negative affective state” (p.24). Given this traditional conceptualization of the individual differences in affect as stable, conceiving of emotional and perceptual instability as individual differences may seem odd. Quite naturally, scholars and laypeople alike aptly associate emotional and perceptual instability as hallmarks of individuals who have been diagnosed with some varietal of psychological disorder. In point of fact, this is not far from the truth. Pervasive affective instability, and the tendency to experience dramatic perceptual shifts, are two main features of several forms of psychopathology, including Borderline Personality Disorder (BPD; American Psychiatric Association [APA], 2000; Linehan, 1993).

Individual diagnosed with BPD tend to be very sensitive to environmental circumstance and are prone to sudden and dramatic shifts in their view of others, who may alternately be seen as beneficent supports or as cruelly punitive. There may be sudden changes in opinions and plans about career, sexual identity, values, and types of friends. These individuals may suddenly change from the role of a needy friend looking
for help to a moral avenger of previous mistreatment. Furthermore, these individuals tend
to display a pattern of unstable and intense relationships frequently associated with
recurrent job losses, interrupted education, and broken marriages.

As mentioned above, affective instability in BPD patients is generally
characterized by extreme reactivity to environmental stimuli (versus a sinister
provocation) and acute emotional variability (as opposed to monotonic change in affect;
Trull et al., 2008). It is clear that intense emotional variability can negatively affect the
way individuals with BPD interact with others and their ability to hold jobs. Furthermore,
although not explicitly labeled as injustice perceptions, many of behavioral outcomes
associated with this personality disorder appear to be fairness-relevant. For example,
interactional injustice is marked by perceptions of inappropriate interpersonal treatment.
Given that individuals with BPD are prone to abrupt changes in their view of other
people, this likely impacts their perceptions of other individuals as interpersonally fair or
unfair.

Although it is estimated that only 2% of the general population can be classified
as having BPD, it is probably safe to conceptualize emotional instability/variability as
lying on a continuum. In other words, people aren’t simply stable or unstable, but differ
in the amount of emotional instability they experience on an individual basis. Hence,
studying *emotional and perceptual instability as a class of individual differences* would
be an exciting new avenue for justice researchers to explore so as to understand the
factors that may predispose some individuals to see the world as a more unfair place than
others.
To date, a limited number of studies have been conducted focusing on mood instability in all populations—BPD or otherwise. However, one recent study suggests that individuals with BPD do not experience significantly different mean levels of positive or negative affect over time compared with non-BPD patients. Nevertheless, they do display large changes in mood and are more likely to report extreme emotional states than non-BPD patients (Trull et al., 2008). One can use these finding to infer that justice research only examining mean differences in emotional traits (e.g., means level differences in PA and NA between individuals) might mistakenly underestimate the importance of trait-level differences in emotional state—and the variability in state-level affect—with respect to the formation of injustice perceptions.

**Methodological and analytical considerations.** In the past, measuring affective instability has been difficult. Previous research relied on participants’ ability to retrospectively recall and assess their own emotional variability using surveys or interviews (e.g., Harvey, Greenberg, & Serper, 1989). For all of the reasons mentioned earlier in this paper, retrospective recall can lead to biased data. This problem can be exacerbated when the data comes from affectively unstable individuals. For example, Ebner-Priemer et al. (2006) found that individuals with BPD displayed a strong negative emotional recall bias compared with non-BPD individuals. In order to address questions regarding the instability of emotions on fairness perceptions at both within and between-persons level of analysis, one must therefore collect intensive longitudinal data similar to the ESM study conducted here.
Beyond methodological concerns, analyzing data for its instability requires researchers to clearly operationalize what they mean by instability; and, although the terms instability and variability have been used synonymously in prior literature, they are not identical (Eid & Diener, 1999; Farmer, Nash, & Dance, 2004; Hoffman & Meyer, 2006; Larsen, 1987; Stein, 1996; Woyshiville, Lackamp, Eisengart, & Gilliland, 1999). Variability refers to the general dispersion of scores across time and is not a marker of instability by itself. It is, however, an important component of instability. The other major marker of instability is low temporal dependency of scores. In other words, someone with extreme affective variability, and a low level of temporal dependency of their mood scores, could be categorized as emotionally unstable (Jahng et al., 2008). In accordance with this dual component view of instability, any statistical indices of affective instability should account for both variability and dependency of scores over time.

In the past, some researchers have used standard deviations of scores over time to analyze affective instability. However, these indices are inherently limited in what they can tell the researcher about affective instability. Furthermore, they cannot capture components like: frequency of variability, temporal dependency, magnitude of emotional states (i.e., amplitude; Larsen, 1987). In short, standard deviations do not provide a rich enough source of information to adequately describe an individual difference as multifaceted as emotional instability. Instead, future research should use analyses focused on examining participants’ affective residuals over time; and, acute change in mood scores temporally at both within and between-persons levels of analysis (for an example
of this see Trull et al., 2008). Jahng et al. (2008) advised scholars to use indices of temporal instability based on successive change such as the Mean Square Successive Difference (MSSD) measure or the Probability of Acute Change (PAC) index as these statistical indicators are sensitive to both elements of instability (i.e., variability and temporal dependency of scores). Furthermore, both long-term and short-term instability can be distinguished using variations of these indices (see Jahng et al., 2008 for the formulas and a detailed description of the equations).

As elaborated above, affective instability entails acute and frequent oscillation of mood over time; and, these changes are quite random and unpredictable because this instability is posited to be heavily influenced by external events in the environment (Trull et al., 2008). Furthermore, because these variations in mood are unsystematic, they are not related to systematic means levels over time. Therefore, it logically follows that individuals who display a high amount of affective instability will be likely to exhibit a pattern of correlated residuals over time.

As scholars, we are taught to beware of correlated error terms because this indicates a violation of one of the primary assumptions of many statistical models (e.g., ANOVA, OLS regression, etc.). That said, these statistics rely on the normal distribution; and, affective instability is inherently a non-normal process. Consequently, non-normality in the distribution of residuals for emotionally-unstable people is a natural part of that person—being labeled a disorder of personality at its most extreme (i.e., BPD). Taking this point a step further, if affective instability is the concept being studied, one should be wary of using data transformations to normalize residuals that appear to be correlated as
this pattern of association may be the very thing that deserves the bulk of scientific scrutiny. In a related vein, any evidence of systematic mean change or temporally dependent variance in mood (i.e., systematic affective characteristics of the individual) should be removed prior to exploring amplitude and frequency of the data (Jahng, Wood, & Trull, 2008; Tennen, Affleck, & Armeli, 2005; West & Hepworth, 1991).

Interpersonal Interactions

The discussion above centered on the importance of studying affective instability; and, how this may vary from person to person. While this is crucial step for understanding the multilevel nature of the affect and justice relationship, it is equally as important for researchers to examine how interpersonal interactions can alter individuals’ affective states and unfairness perceptions.

This level adds a monumental layer of complexity and richness to the affect and justice relationship. First, there is the question of how much individuals choose to display their felt emotions (Hochschild, 1983), and the way in which they display their feeling states (e.g., verbal versus nonverbal cues; Ekman, 1990; Frank et al., 1993; Gosselin, Kirouac, & Doré, 1995)? Then, how accurately are these emotions interpreted by the other individuals (Hess, Banse, & Kappas, 1995)? Unraveling this interaction, and understanding how each person’s emotional state changes because of an interpersonal interaction, becomes ever more tricky when one considers the potential impact of individual differences (e.g., emotional instability, trait-level NA and PA) and various qualities of the interaction itself (e.g., length of discourse between the two people, type
and quality of the relationship between the individuals, etc.). Finally, if we add unfairness relevant events to the mix, a single interaction becomes even more difficult to disentangle.

Methodological and analytical considerations. Given the aforementioned theoretical complexities intrinsic to interactions, scholars must look to new methodological and statistical techniques to collect and analyze these interactions appropriately. One promising tool to aid in this research expands upon traditional experience sampling by utilizing global position system (GPS) technology to create a more robust offspring known as Context-Aware Experience Sampling (CAES; Intille, Rondoni, Kukla, Anacona, & Boa, 2003). CAES improves upon traditional ESM by using cutting-edge computational perception and sensing technologies to automatically detect events and initiate data collection from the user.

CAES allows for elaborate event-contingent sampling in which the sampling device detects the context, or the occurrence of a specific event, and then prompts the participant with a signaling cue. As awareness recognition algorithms improve, the potential exists for investigators to identify specific activities of interest (e.g. an employee engaging in conversation with coworkers) and have the device sample before, during, or, after that activity occurs. With future developments, this tool will enhance researchers’ ability to extensively sample their specific situation of interest without adding increased burden to the participant. Furthermore, raw data like heart rate and GPS determined location can be analyzed, or programmed to be an indicator that prompts the device to collect data when the participant is engaged in an activity the researcher is studying.
Currently, a free open-source software program called the MyExperience Tool (Froehlich, Landay, Chen, Consolvo, Harrison, & Smith, 2009) is available for download and use on PDAs and cellular phones that run on the Windows Mobile platform (for more information visit http://myexperience.sourceforge.net/index.html). And, we can probably anticipate similar strides in technological advancement in the coming years. Therefore, readers should research the available options at the time they design their studies as new technological innovations become available.

The possibility of collecting data on dynamic interactions undoubtedly is made much easier with technological advances like CAES. However, a similar magnitude of innovation must be applied to traditional statistical techniques so that the added richness of this interactive data is properly analyzed and understood. One promising avenue for analyzing dyadic interactions involves the use of differential equations models of self-regulating dynamical systems (Boker & Laurenceau, 2006). In short, dynamical systems theory is used to understand changes over time that occur in both physical and artificial systems (e.g., planets in the solar system, the movement of two pendulums knocking against each other when put in motion, the stock market, intimacy and disclosure in married couples). Traditionally, dynamical systems theory has been used to understand concepts in physics, economics and applied mathematics. However, with advances in intensive longitudinal data collection, social scientists have begun to apply the principles of dynamical systems to explore social relationships. For example, Boker and Laurenceau (2006) use a method of Local Linear Approximation (LLA) of derivatives (Boker & Nesselroade, 2002) and generalized linear mixed modeling to describe and predict
individual differences in married couples’ parameters of differential equations regarding their levels of intimacy and disclosure. By using these statistical modeling techniques, they were able to examine intraindividual variability of both members of a dyad, and, the extent to which each member influenced the other. For example, an individual’s pattern of variability around their stable mean affective score could be an illustration of an intrinsic dynamical process about an equilibrium value. For ease of explanation, one can liken this process to the idea of self-regulation (Carver & Scheier, 1998) in which a process variable is constantly shifting so as to stay near a comfortable equilibrium value. This can be taken a step further if one assumes that two self-regulating systems not only regulate themselves, but also influence the regulation of the other. As an example, two individuals engaged in conversation each have their own “comfortable” emotional equilibrium; and, by means of their interaction (and possible emotional contagion) they each affect the emotional equilibrium of the other individual—although each person need not have the same impact on the other’s emotions. This type of modeling could also be used to understand the emotional changes that occur in a dyad when one person does something that other individual deems “unfair.”

Groups and Teams

The groups and teams level adds an additional layer of complexity for researchers examining interpersonal relationships; and, there is no reason for justice scholars to limit themselves to studying two individuals at a time. Kelly and Barsade (2001) believe that groups and teams also experience emotional contagion and develop their own “affective
composition” that can be conceptualized as constructed from each individual and the interaction of the people in the group.

The use of context aware sampling technology, paired with a dynamical systems approach to data analysis, could be useful for the examination of group-level dynamics. Researchers interested in understanding group-level forces could, for example, give each member of a workgroup a data-collection device programmed to cue a participant with a survey when the internal GPS established that all the devices in the specified group were within a certain radius. This would likely occur when all individuals were, for example, in a team meeting. This cue could also be programmed to initiate if a specified number of team members engaged in a conference call of a particular duration. Without a doubt, the possibilities using CAES technology are seemingly endless; and, the creative researcher will be able to tailor situational cues to their precise needs.

The Macro-Organizational Level

The final level of analysis to be pondered (akin to level-5 in Ashkanasy’s (2003) multilevel emotions framework) is a departure from the first four levels in that it focuses on a macro-level phenomenon—deeply rooted emotions tied to a small population or organization. This concept of emotional climate has been defined by De Rivera (1992) as “an objective group phenomenon that can be palpably sensed—as when one enters a party or a city and feels an attitude of gaiety or depression, openness or fear” (p. 197). The reader will note that this definition is strikingly dissimilar from the more micro-level generally studied by justice scholars that centers on individuals’ subjective experiences of their state and trait-level emotions. As Ashkanasy (2003) aptly noted, “this begs the
question as to how to ascertain real emotional climate (or culture) in organizations” (p. 38). He pertinently observed that describing culture is much easier to do by means of intense involvement in the moment-to-moment workings of organizations. With intensive (both as a function of time spent in an organization and the magnitude of individuals studied within that population) longitudinal organizational data, it is more likely that the researcher will unearth the objective qualities of emotional climate that are less fleeting and more structurally sound aspects of the unit.

Methodological and analytical considerations. As an example, Ashkanasy and Nicholson (2003) examined emotional climate and culture in two restaurant chains. In particular, they developed and used a measure for assessing a “Climate of Fear”. Notably, via ethnographic interviews, they found that this fearful climate was “palpably sensed” by employees.

The tangible, objective, pervasive, and stable qualities of emotional climate lend themselves to data collection and measurement tools that assess physiological markers of emotional states—which can be collected directly from a participants’ body without asking them to interpret their feelings. Although this technology is still at an early stage of development, add-ins to the MyExperience data collection platform, and a technological innovation called Wockets, present new ways to amass this information.

As mentioned earlier, the MyExperience platform is context aware experience sampling system. In addition to its global positioning functionalities, MyExperience can be programmed to collect a wide range of data including sensor data (e.g., heart rate), images, video, audio and user surveys. The sensor data is time stamped and recorded to a
local SQL Compact Edition database running on the mobile phone without any user intervention; and, the data can be synchronized wirelessly with a web server. These sensors can easily be added using the MyExperience plug-in architecture. For instance, researchers at Intel Research, Seattle developed a MyExperience software sensor to interface with a Bluetooth-based activity-inference hardware sensor to recognize activities such as running, walking, and bicycling.

If, for example, a researcher desired both objective and subjective measures of the emotional climate and justice climate of a particular organization, he or she could program MyExperience for a study relating heart rate (i.e., a more objective measures of individuals’ emotions; and, a potential physiological reaction to an unfair event) and perceived levels of organizational climate. In this example, two sensors would be used: a GPS sensor and a heart rate sensor. A trigger could then be programmed to alert a "climate survey" (either emotional or justice climate) whenever the participant’s heart rate exceeded some range (e.g., 150 beats per minute). The participant’s heart rate, location data, and survey responses would then be automatically recorded to a SQL database on the phone that could be automatically synchronized with a server-side database.

The use of more objective and less intrusive physiological indicators of climate, in conjunction with more traditional (i.e., subjective) measures of these constructs, provide scholars with intriguing new ways to triangulate their research methodology. As this technology advances, there are likely to be even greater strides towards less intrusive tools capable of even richer data extraction. For example, currently, if a researcher is
interested in studying participants’ brain activation as they experience different emotions, he or she would have to bring each person into the lab use very costly fMRI equipment to scan the participants’ brains while they were lying motionless. At some point in the future, it may be possible to simply use an “add-on” to a CAES program to monitor brain activation and prompt the user with very specific surveys when they engage certain functional area of their brain.

Conclusion

Although the present study sheds a good deal of light on the temporal nature of injustice perceptions, it is arguably more informative in the way in which it demonstrates how little we really know about the experience of injustice (as opposed to the remembrance and recall of unfair events). With the currently available technology—and anticipated future advancements—justice scholars will be able to dig even deeper than before into individuals’ working lives and truly gain a comprehensive understanding of what it means to be treated unfairly at work. The justice/injustice frontier is ripe with complex longitudinal research questions still to be answered. Needless to say, there is obvious merit in theory preceding study design. That said, sometimes knowing what is available to you in your “scholarly toolbox” can inform the justice scholars as to what type of research questions are capable of being answered. Hopefully, this paper has given the reader thought-provoking research findings to ponder and a zest to educate and equip themselves with a new box of tools to use in their future scholarly endeavors.
Table 1.

Participant Demographics

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>19</td>
<td>32.2</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Female</td>
<td>40</td>
<td>67.8</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td>33.49</td>
<td>31.00</td>
<td>29</td>
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<tr>
<td><strong>Ethnicity</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American / Black</td>
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<td>1.7</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Asian / Pacific Islander</td>
<td>3</td>
<td>5.2</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Hispanic / Latino / Latina</td>
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<td>8.6</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Native American / American Indian / Alaskan Native</td>
<td>1</td>
<td>1.7</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>East Indian</td>
<td>2</td>
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<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Caucasian / White</td>
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<td>79.3</td>
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<tr>
<td><strong>Marital Status</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Single</td>
<td>19</td>
<td>32.2</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Married / Partnered</td>
<td>24</td>
<td>40.7</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Cohabitating</td>
<td>11</td>
<td>18.6</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Divorced / Separated</td>
<td>5</td>
<td>8.5</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Student Status</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Full-time Student</td>
<td>3</td>
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<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Part-time Student</td>
<td>6</td>
<td>10.2</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Not Currently a Student</td>
<td>50</td>
<td>84.7</td>
<td>--</td>
<td>--</td>
<td>--</td>
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<tr>
<td><strong>Your Job</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours Worked in a Typical Week</td>
<td>--</td>
<td>--</td>
<td>43.42</td>
<td>40</td>
<td>40</td>
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<tr>
<td>Years at Current Organization</td>
<td>--</td>
<td>--</td>
<td>5.39</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Years in Current Position</td>
<td>--</td>
<td>--</td>
<td>3.64</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Years in Current Profession</td>
<td>--</td>
<td>--</td>
<td>8.02</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 2.

Reactions to the Study

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoyed Participating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at All</td>
<td>4</td>
<td>7.8</td>
</tr>
<tr>
<td>A Little</td>
<td>20</td>
<td>39.2</td>
</tr>
<tr>
<td>A Great Deal</td>
<td>27</td>
<td>52.9</td>
</tr>
<tr>
<td>Signal Got Annoying</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at All</td>
<td>12</td>
<td>23.5</td>
</tr>
<tr>
<td>A Little</td>
<td>31</td>
<td>60.8</td>
</tr>
<tr>
<td>A Great Deal</td>
<td>8</td>
<td>15.7</td>
</tr>
<tr>
<td>Influence of Monetary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at All</td>
<td>31</td>
<td>60.8</td>
</tr>
<tr>
<td>Incentives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Little</td>
<td>15</td>
<td>29.4</td>
</tr>
<tr>
<td>A Great Deal</td>
<td>5</td>
<td>9.8</td>
</tr>
<tr>
<td>Concern About Confidentiality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at All</td>
<td>49</td>
<td>96.1</td>
</tr>
<tr>
<td>A Little</td>
<td>2</td>
<td>3.9</td>
</tr>
<tr>
<td>Difficult to Respond to Beep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td>22</td>
<td>43.1</td>
</tr>
<tr>
<td>Occasionally</td>
<td>29</td>
<td>56.9</td>
</tr>
<tr>
<td>Did Training Cover Everything</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>3.9</td>
</tr>
<tr>
<td>Yes</td>
<td>49</td>
<td>96.1</td>
</tr>
<tr>
<td>Did Alarm Fail to Sound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>45</td>
<td>88.2</td>
</tr>
<tr>
<td>Yes, One Day</td>
<td>2</td>
<td>3.9</td>
</tr>
<tr>
<td>Yes, More Than One Day</td>
<td>4</td>
<td>7.8</td>
</tr>
</tbody>
</table>
Table 3.

*Mean Responses to State-Level Affect Items Separated by Occurrence of Event*

<table>
<thead>
<tr>
<th></th>
<th>No Unfair Event</th>
<th></th>
<th>Unfair Event Occurred</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Alert</td>
<td>3.26</td>
<td>1.00</td>
<td>3457</td>
<td>3.31</td>
</tr>
<tr>
<td>Determined</td>
<td>3.07</td>
<td>1.10</td>
<td>3452</td>
<td>2.99</td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>2.61</td>
<td>1.17</td>
<td>3457</td>
<td>1.99</td>
</tr>
<tr>
<td>Excited</td>
<td>2.40</td>
<td>1.16</td>
<td>3456</td>
<td>2.18</td>
</tr>
<tr>
<td>Proud</td>
<td>2.47</td>
<td>1.21</td>
<td>3456</td>
<td>2.09</td>
</tr>
<tr>
<td>Hostile</td>
<td>1.32</td>
<td>.70</td>
<td>3456</td>
<td>2.68</td>
</tr>
<tr>
<td>Irritable</td>
<td>1.66</td>
<td>.93</td>
<td>3458</td>
<td>3.09</td>
</tr>
<tr>
<td>Nervous</td>
<td>1.59</td>
<td>.85</td>
<td>3458</td>
<td>2.27</td>
</tr>
<tr>
<td>Scared</td>
<td>1.29</td>
<td>.65</td>
<td>3459</td>
<td>1.81</td>
</tr>
<tr>
<td>Upset</td>
<td>1.43</td>
<td>.81</td>
<td>3448</td>
<td>3.08</td>
</tr>
</tbody>
</table>
Table 4.

*Means of State-Level Positive and Negative Affect by Day*

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>M</em></td>
<td><em>M</em></td>
</tr>
<tr>
<td>Monday</td>
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<td>1.56</td>
</tr>
<tr>
<td>Tuesday</td>
<td>2.80</td>
<td>1.52</td>
</tr>
<tr>
<td>Wednesday</td>
<td>2.75</td>
<td>1.54</td>
</tr>
<tr>
<td>Thursday</td>
<td>2.74</td>
<td>1.49</td>
</tr>
<tr>
<td>Friday</td>
<td>2.80</td>
<td>1.44</td>
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</table>
Table 5.

*Mean State-Levels Positive and Negative Affect by Day in Study*

<table>
<thead>
<tr>
<th>Day Number</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>M</td>
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<tr>
<td>1</td>
<td>2.72</td>
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</tr>
<tr>
<td>2</td>
<td>2.86</td>
<td>1.54</td>
</tr>
<tr>
<td>3</td>
<td>2.79</td>
<td>1.59</td>
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<tr>
<td>4</td>
<td>2.75</td>
<td>1.59</td>
</tr>
<tr>
<td>5</td>
<td>2.70</td>
<td>1.44</td>
</tr>
<tr>
<td>6</td>
<td>2.72</td>
<td>1.50</td>
</tr>
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<td>7</td>
<td>2.76</td>
<td>1.54</td>
</tr>
<tr>
<td>8</td>
<td>2.79</td>
<td>1.48</td>
</tr>
<tr>
<td>9</td>
<td>2.76</td>
<td>1.48</td>
</tr>
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<td>10</td>
<td>2.82</td>
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</tr>
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<td>11</td>
<td>2.66</td>
<td>1.40</td>
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<td>12</td>
<td>2.68</td>
<td>1.52</td>
</tr>
<tr>
<td>13</td>
<td>2.75</td>
<td>1.51</td>
</tr>
<tr>
<td>14</td>
<td>2.78</td>
<td>1.40</td>
</tr>
<tr>
<td>15</td>
<td>2.73</td>
<td>1.49</td>
</tr>
</tbody>
</table>
Table 6.

*Frequency of Self-Categorized Unfair Events*

<table>
<thead>
<tr>
<th>Type of Unfair Event</th>
<th>Unfair Outcome</th>
<th>Unfair Procedure</th>
<th>Unfair Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfair Outcome</td>
<td>70</td>
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<td></td>
</tr>
<tr>
<td>Unfair Procedure</td>
<td>14</td>
<td>30</td>
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</tr>
<tr>
<td>Unfair Interaction</td>
<td>34</td>
<td>11</td>
<td>96</td>
</tr>
</tbody>
</table>

*Note.* Five events were categorized as involving DJ, PJ, and IJ.
Table 7.
Correlations Among Selected Pre and Post Survey Variables

| Measure                              | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  |
|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gender                              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Age                                 | .18 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Education                           | -.06| .20 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Hours Worked in a Typical Week      | -.06| -.11|.07 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Years at Current Organization       | .25 | .67 | -.08| -.03|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Years in Current Profession         | .31 | .81 | .06 | .02 | .70 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Your Organization                   | .12 | .00 | .02 | .15 | .05 | .08 | .79 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Your Work                           | .15 | .10 | .02 | .19 | .14 | .06 | .30 | .74 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Your Coworkers                      | .01 | .00 | .06 | .10 | .21 | .04 | .31 | .45 | .82 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Your Supervisor                     | -.01| .19 | -.17| .02 | -.26| .04 | .32 | .39 | .41 | .90 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Pay & Benefits                      | -.15| -.23| .18 | .18 | .20 | -.07| .19 | .21 | .22 | .39 | .75 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Promotion Opportunities             | -.18| .36 | .02 | .15 | -.39| -.25| .26 | .41 | .37 | .24 | .26 | .89 |     |     |     |     |     |     |     |     |     |     |     |     |
| General Happiness Combination Score | .07 | .07 | -.02| .19 | -.10| .02 | .13 | .48 | .19 | .40 | .30 | .17 |     |     |     |     |     |     |     |     |     |     |     |     |
| Trait-Level NA                      | .25 | .03 | -.11| .07 | .01 | .04 | -.02| -.19| -.04| -.07| -.19| .08| .23 | .70 |     |     |     |     |     |     |     |     |     |     |     |
| Trait-Level PA                      | -.01| .11 | .06 | .31 | .06 | .09 | -.05| .35 | .03 | .10 | .19 | .03| .64 | .42 | .77 |     |     |     |     |     |     |     |     |     |     |
| Social Self-Esteem                  | .06 | -.03| -.06| .12| -.03| .10 | -.33| .18 | .18| -.16 | .05| -.15| .45| .39| .65| .96 |     |     |     |     |     |     |     |     |     |
| Moral Identity                      | -.18| .12 | -.03| -.02| -.14| -.25| .03 | .13 | .01 | .04 | .30| -.10| .27| .13| .39| .20| .89 |     |     |     |     |     |     |     |     |
| Perceived Control                   | .19 | -.09| .10 | -.21| .01 | .20 | .36 | .21 | .18| .14 | .16| .16| .03| .02| .06| .08| .06| .82 |     |     |     |     |     |     |     |
| Overall Distributive Injustice      | .20 | .14 | -.07| .00 | .00 | -.10| -.16| -.27| -.19| -.16| -.07| -.23| .31 | .12 | .17| .00| .10| .15| .66 |     |     |     |     |     |
| Overall Procedural Injustice        | .08 | -.21| -.23| -.17| -.03| -.13| -.16| -.26| -.02| -.08| -.08| -.06| .30| .13| .19| .03| .02| .10| .69| .89 |     |     |     |     |
| Overall Interactional Injustice     | -.22| .19 | -.03| .16 | .07 | .11 | .08 | .09 | .07| .12 | -.09| .09| .25| .00| .12| .07| .05| -.11| -.56| -.60| .59 |     |     |     |
| Job Satisfaction                    | .05 | .23 | .00 | .30 | -.15| .14| .29 | .56 | .10 | .43 | .40 | .42 | .45| .35| .42| .32| .37| .28| .28| .08| .17| .91 |     |     |     |
| Affective Commitment                | -.08| .02 | .15 | .32| -.01| -.12| -.29| -.50| -.24| -.40| -.15| -.41| .27| .03| .18| .09| .01| -.26| .25| .24| .40| .52| .83 |     |     |
| Continuance Commitment              | -.09| .12 | .12 | -.01| .07 | .02| .17 | .07 | .10 | .09 | .16| .40| -.01| .12 | -.20| -.15| -.06| .40| .02| -.10| .01| .07| -.09| .70 |     |
| Normative Commitment                | -.05| .08 | .06 | -.40| .24 | .02| -.18| -.35| -.34| -.32| -.19| -.20| .31| .03| -.27| -.23| -.11| -.13| .25| .14| -.35| .53| .72| .18| .86 |
| Turnover Intentions                 | .06 | .26 | .09 | .45 | .17 | .27| .38 | .36| .08 | .42 | .23 | .21| .28| .05 | .21 | .05 | .07| .14| -.32| -.38| .40 | .53| .65| -.02| .52| .76 |
| Exhaustion                          | -.36| .01 | .18 | -.08| -.02| -.22| -.22| -.21| -.05| -.25| -.10| -.08| -.20| .28| -.19| -.37| .09| -.21| .05| .00| .04| -.30| .39| -.06| .41| -.24| .80 |
| Disengagement                       | -.19| -.05| -.14| -.53| .11 | -.13| -.24| -.67| -.19| -.38| -.18| -.18| -.50| .39| .55| .42| -.15| -.21| .28| .37| .31| -.65| .57| .19| .63| -.59| .34| .79 |
| Interpersonal Deviance              | -.09| -.14| -.08| -.01| .04| .08| .01| -.30| -.19| -.05| -.07| -.23| .35| .35| -.07| .29| .03| .22| .28| .11| -.09| -.09| -.02| -.02| -.02| .11| .20| .77 |
| Organizational Deviance             | .01 | -.09| -.22| -.13| .10 | .05| .11| -.52| -.15| -.03| -.11| -.02| -.14| .31| -.47| -.38| -.23| -.05| -.06| -.03| -.08| -.25| .07| .01| .10| -.02| .06| .41| .48| .80 |
Table 8a.

**Summary of REML Deviance Tests for State-Level Negative Affect**

<table>
<thead>
<tr>
<th>Model</th>
<th>Deviance</th>
<th>AIC</th>
<th>BIC</th>
<th>DF</th>
<th>Absolute Value</th>
<th>Deviance Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Empty, VC</td>
<td>7202.87</td>
<td>7204.87</td>
<td>7211.06</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2: Empty, CS</td>
<td>6023.59</td>
<td>6027.59</td>
<td>6039.98</td>
<td>3</td>
<td>1179.27**</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Empty=empty model with no predictors, VC=variance components, CS=compound symmetry.

---

Table 8b.

**Summary of REML Deviance Tests for State-Level Positive Affect**

<table>
<thead>
<tr>
<th>Model</th>
<th>Deviance</th>
<th>AIC</th>
<th>BIC</th>
<th>DF</th>
<th>Absolute Value</th>
<th>Deviance Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Empty, VC</td>
<td>9577.58</td>
<td>9579.59</td>
<td>9585.78</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2: Empty, CS</td>
<td>6825.76</td>
<td>6829.76</td>
<td>6842.15</td>
<td>3</td>
<td>2751.82**</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Empty=empty model with no predictors, VC=variance components, CS=compound symmetry.
Table 9.

*Simple Linear and Hierarchical Regressions Relating Injustice and State-Level Negative Affect (Hypotheses 1a and 1b-Within Persons)*

<table>
<thead>
<tr>
<th></th>
<th>IV</th>
<th>DV</th>
<th>effect</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>df</th>
<th>t-ratio</th>
<th>R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>NA @ t-1</td>
<td>DJ @ t</td>
<td>intercept</td>
<td>2.53</td>
<td>.15</td>
<td>--</td>
<td>33</td>
<td>16.81**</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NA @ t-1</td>
<td>.85</td>
<td>.24</td>
<td>.52</td>
<td>33</td>
<td>3.51**</td>
<td>.27**</td>
<td>--</td>
</tr>
<tr>
<td>H1b</td>
<td>DJ @ t</td>
<td>NA @ t+1</td>
<td>intercept</td>
<td>-.86</td>
<td>.29</td>
<td>--</td>
<td>32</td>
<td>-2.99*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NA @ t</td>
<td>.47</td>
<td>.13</td>
<td>.50</td>
<td>32</td>
<td>3.69**</td>
<td>--</td>
<td>.27**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DJ @ t</td>
<td>.26</td>
<td>.10</td>
<td>.37</td>
<td>32</td>
<td>2.71**</td>
<td>.41**</td>
<td>.14**</td>
</tr>
<tr>
<td>H1a</td>
<td>NA @ t-1</td>
<td>IJ @ t</td>
<td>intercept</td>
<td>2.99</td>
<td>.18</td>
<td>--</td>
<td>34</td>
<td>16.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IJ @ t+1</td>
<td>.51</td>
<td>.35</td>
<td>.24</td>
<td>34</td>
<td>1.45 ns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1b</td>
<td>IJ @ t</td>
<td>NA @ t+1</td>
<td>intercept</td>
<td>-.23</td>
<td>.25</td>
<td>.24</td>
<td>34</td>
<td>-.91 ns</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NA @ t</td>
<td>.23</td>
<td>.11</td>
<td>.35</td>
<td>34</td>
<td>2.21*</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IJ @ t</td>
<td>.07</td>
<td>.08</td>
<td>.06</td>
<td>34</td>
<td>.97 ns</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* NA = State-Level Negative Affect; DJ = Distributive Justice; IJ = Interactional Justice; t = time; * p < .05; ** p < .01; ns = not significant. All affect variables were centered within persons using the full dataset. Regressions subsequently conducted on aggregated dataset using only unfair event occurrences.
Table 10.

Linear Regressions Relating Number of Events/ Injustices Logged and State-Level Negative Affect (Hypothesis 1c – Within Persons)

<table>
<thead>
<tr>
<th>IV</th>
<th>DV</th>
<th>effect</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>df</th>
<th>t-ratio</th>
<th>R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1c</td>
<td>NA</td>
<td>intercept</td>
<td>4.19</td>
<td>.59</td>
<td>--</td>
<td>47</td>
<td>7.14**</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>NA</td>
<td>Total # of Logged Events</td>
<td>NA</td>
<td>-.81</td>
<td>.48</td>
<td>-.24</td>
<td>47</td>
<td>-1.70m</td>
<td>.06m</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. NA = State-Level Negative Affect; m = p < .10; * p < .05; ** p < .01. All affect variables were centered within persons using the full dataset. Regressions were conducted on aggregated dataset using only unfair event occurrences.
Table 11.

Hierarchical Linear Regressions Relating Trait-Level Negative Affect, State-Level Negative Affect, and Injustice Perceptions  
(Hypothesis 3- Cross Level)

<table>
<thead>
<tr>
<th>IV</th>
<th>DV</th>
<th>effect</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>df</th>
<th>t-ratio</th>
<th>R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3 Trait-Level NA and NA @ t-1</td>
<td>DJ @ t</td>
<td>intercept</td>
<td>2.52</td>
<td>.17</td>
<td>--</td>
<td>31</td>
<td>15.25**</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Trait NA</td>
<td>-.09</td>
<td>.26</td>
<td>-.06</td>
<td>31</td>
<td>-36 ns</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NA @ t-1</td>
<td>.79</td>
<td>.27</td>
<td>.48</td>
<td>31</td>
<td>2.94**</td>
<td>.28**</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trait NA x NA @ t-1</td>
<td>-.34</td>
<td>.67</td>
<td>-.08</td>
<td>31</td>
<td>-.50 ns</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>H3 Trait-Level NA and NA @ t-1</td>
<td>IJ @ t</td>
<td>intercept</td>
<td>2.92</td>
<td>.19</td>
<td>--</td>
<td>32</td>
<td>15.36**</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Trait NA</td>
<td>.30</td>
<td>.29</td>
<td>.18</td>
<td>32</td>
<td>1.04 ns</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NA @ t-1</td>
<td>.63</td>
<td>.37</td>
<td>.30</td>
<td>32</td>
<td>1.73 ns</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trait NA x NA @ t-1</td>
<td>-.84</td>
<td>.89</td>
<td>-.17</td>
<td>32</td>
<td>-.95 ns</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

Note. NA = Negative Affect; DJ = Distributive Justice; IJ = Interactional Justice; t = time; * p < .05; ** p < .01; ns = not significant. Trait-level NA was centered between-persons and State-level NA (i.e. NA @ t-1) was centered within persons with full dataset. Regressions subsequently conducted on aggregate data using only unfair events.
Table 12.

Simple Linear Regressions Relating Trait-Level NA, State-Level NA, and Total # of Logged Injustice Events (Hypotheses 4 and 5 – Between Persons)

<table>
<thead>
<tr>
<th>IV</th>
<th>DV</th>
<th>effect</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>df</th>
<th>t-ratio</th>
<th>R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>H4</td>
<td>Trait-Level NA</td>
<td>intercept</td>
<td>-.01</td>
<td>.07</td>
<td>--</td>
<td>56</td>
<td>-.16 ns</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trait-Level NA</td>
<td>.54</td>
<td>.07</td>
<td>.71</td>
<td>56</td>
<td>7.50**</td>
<td>.23**</td>
<td>--</td>
</tr>
<tr>
<td>H5</td>
<td>Trait-Level NA</td>
<td>intercept</td>
<td>3.32</td>
<td>.33</td>
<td>--</td>
<td>47</td>
<td>10.07**</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Total # of Events Logged</td>
<td>Trait-Level NA</td>
<td>.65</td>
<td>.33</td>
<td>.28</td>
<td>47</td>
<td>1.96*</td>
<td>.08*</td>
<td>--</td>
</tr>
</tbody>
</table>

*Note.* NA = Negative Affect; * p < .05; ** p < .01; All affect variables were centered between-persons.
Figure 1.

Snowball Sampling Map
Figure 2a: Google Spider Chart Depicting Level of Perceived Negative Affect Based on Event Occurrence

Negative Affect

- Hostile
- Upset
- Irritable
- Scared
- Nervous

- Unfair Event
- No Unfair Event

Figure 2b: Google Spider Chart Depicting Level of Perceived Positive Affect Based on Event Occurrence

Positive Affect

- Alert
- Excited
- Determined
- Proud
- Ethusiastic

- Unfair Event
- No Unfair Event
APPENDIX A: PRE SURVEY

CONTACT INFORMATION FOR THE DURATION OF THE STUDY

(Contact information will be kept separate from the rest of the initial survey)

1. Last Name: __________________    First Name: ________________________ 
2. Mailing Address: ____________________________________________________ 
3. Home Phone: _______ Cell Phone: _________ Work Phone ________________ 
4. Personal Email: _________________  Work Email: ____________________ 
5. Preferred Method of Communication (circle one):
   Home Phone,   Cell Phone,   Personal Email,   Work Email
OVERALL INJUSTICE

Instructions: The following items ask you to rate how unfairly you are treated at work on average (not with regard to any specific event). Please use the 5-point scale below to rate your level of agreement with the following statements.

The following statements refer to the outcomes you generally receive at work…

1. To what extent are the outcomes you receive unfair given the effort that you put into your work?
   
<table>
<thead>
<tr>
<th>To a Small Extent</th>
<th>To a Large Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  2  3  4  5</td>
<td>1  2  3  4  5</td>
</tr>
</tbody>
</table>

2. To what extent are your outcomes inappropriate given the work you complete?
   
<table>
<thead>
<tr>
<th>To a Small Extent</th>
<th>To a Large Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  2  3  4  5</td>
<td>1  2  3  4  5</td>
</tr>
</tbody>
</table>

3. To what extent do your outcomes not reflect what you contribute to the organization?
   
<table>
<thead>
<tr>
<th>To a Small Extent</th>
<th>To a Large Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  2  3  4  5</td>
<td>1  2  3  4  5</td>
</tr>
</tbody>
</table>

4. To what extent are your outcomes unjustified given your performance?
   
<table>
<thead>
<tr>
<th>To a Small Extent</th>
<th>To a Large Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  2  3  4  5</td>
<td>1  2  3  4  5</td>
</tr>
</tbody>
</table>
The following statements refer to the procedures you are generally subject to at your work…

1. To what extent are you unable to express your views and feelings as part of workplace procedures?

   **To a Small Extent** | **To a Large Extent**
   | 1 | 2 | 3 | 4 | 5

2. To what extent do you lack influence over the outcomes arrived at by those procedures?

   **To a Small Extent** | **To a Large Extent**
   | 1 | 2 | 3 | 4 | 5

3. To what extent are procedures applied inconsistently?

   **To a Small Extent** | **To a Large Extent**
   | 1 | 2 | 3 | 4 | 5

4. To what extent are procedures biased?

   **To a Small Extent** | **To a Large Extent**
   | 1 | 2 | 3 | 4 | 5

5. To what extent are procedures based on inaccurate information?

   **To a Small Extent** | **To a Large Extent**
   | 1 | 2 | 3 | 4 | 5

6. To what extent are you able to appeal the outcomes arrived at by those procedures?

   **To a Small Extent** | **To a Large Extent**
   | 1 | 2 | 3 | 4 | 5

7. To what extent do those procedures fail to meet ethical and moral standards?

   **To a Small Extent** | **To a Large Extent**
   | 1 | 2 | 3 | 4 | 5
The following statements refer to your interactions with others at your work...

1. To what extent do the individual(s) you interact with treat you in an impolite manner?
   
   To a Small Extent  
   1  2  3  4  5  

   To a Large Extent

2. To what extent do the individual(s) you interact with treat you disrespectfully?
   
   To a Small Extent  
   1  2  3  4  5  

   To a Large Extent

3. To what extent are the individual(s) you interact with dishonest in their communication with you?
   
   To a Small Extent  
   1  2  3  4  5  

   To a Large Extent

4. To what extent do the individual(s) you interact with fail to communicate details to you in a timely manner?
   
   To a Small Extent  
   1  2  3  4  5  

   To a Large Extent
JOB DESCRIPTIVE INDEX (JDI)

We would like to ask you to provide some background information about yourself. Please remember that your responses are confidential. You may skip any question that you do not want to answer.

Gender:
- □ Male
- □ Female

Ethnic Background:
- □ African American/Black
- □ Asian/Pacific Islander
- □ Caucasian/White
- □ East Indian
- □ Hispanic/Latino/Latina
- □ Native American/American Indian/Alaskan Native
- □ Other

Education:
- □ Some high school
- □ Some college
- □ Two year college (associate) degree
- □ Four year college (bachelor) degree
- □ Some graduate or professional school
- □ Master’s degree
- □ Ph.D.
BACKGROUND INFORMATION, continued

Marital Status:
- Single
- Married/Partnered
- Widowed/Widower
- Divorced/Separated

Student Status:
- Full-time student
- Part-time student
- Not currently a student

Employment Status:
- Full-time
- Part-time

Hours Worked:
How many hours do you work during a typical week? __________

Organizational Tenure:
How long have you worked at your current organization________
How long have you worked in your current position________
How long have you worked in your current profession________
YOUR ORGANIZATION

In this section we are interested in various characteristics of your organization. Below are a number of questions about organizational communication, pay policies, and effectiveness. Please read each statement carefully and circle the response that answers each to the best of your knowledge.

Do you regularly receive information about your organization through a newsletter? YES NO

Do you receive information about your organization through regular meeting? YES NO

Are you qualified or capable (either through training or job rotation) to perform more than one job? YES NO

Do you own share of your organization’s stock? N/A YES NO

Do you have access to formal grievance procedures and/or complaint resolution system? YES NO

Does your organization reimburse employees for costs of courses taken at colleges or universities? YES NO

Are you eligible for a bonus based on your individual performance? YES NO

Are you eligible for a cash bonus based on company-wide productivity or profitability? YES NO

Are you eligible for profit sharing (under 401K) based on company-wide productivity or profitability? N/A YES NO

What percent of your total compensation is accounted for by cash bonuses plus profit sharing? _________ percent

How many hours of formal training sponsored by or organization have you received over the last 12 months? _________ hours

How many hours of training did you receive as a new employee your first year? _________ hours
YOUR ORGANIZATION, continued

Does your organization generally hire qualified employees?  Yes  ?  No

Does your organization structure jobs and work in a way that enhances the performance of your department/unit/team?  Yes  ?  No

Does your organization provide employee training that effectively enhances the performance of your department/unit/team?  Yes  ?  No

Does your organization effectively reward employee behaviors that are consistent with the goals of the organization?  Yes  ?  No

Does your organization effectively distribute rewards based on individual contributions?  Yes  ?  No

Does management effectively address problems of chronically poor performing employees?  Yes  ?  No

Does your organization effectively communicate important organizational information to employees?  Yes  ?  No

Does your organization effectively elicit and act on suggestions and feedback provided by employees?  Yes  ?  No

Is HR (i.e., the people side of the business) seen by senior management as a cost to be minimized?  Yes  ?  No

Does your organization have a clear strategic vision that is well communicated to its employees?  Yes  ?  No
**YOUR WORK**

Do the following items describe your work in general?

Circle **Yes** if the item describes your work most of the time

**No** if the item does not describe your work most of the time

? if you cannot decide

1. Fascinating | Yes ? No
2. Routine | Yes ? No
3. Satisfying | Yes ? No
4. Boring | Yes ? No
5. Creative | Yes ? No
6. Respected | Yes ? No
7. Pleasant | Yes ? No
8. Useful | Yes ? No
9. Tiresome | Yes ? No
10. Challenging | Yes ? No
11. Frustrating | Yes ? No
12. Simple | Yes ? No
13. Gives sense of accomplishment | Yes ? No
14. A source of pleasure | Yes ? No
15. Dull | Yes ? No
16. Interesting | Yes ? No
17. Awful | Yes ? No
18. Important | Yes ? No
PEOPLE YOU WORK WITH

Do the following items describe the majority of the people you work with in general?

Circle **Yes** if the item describes the people you work with most of the time

**No** if the item does not describe the people you work with most of the time

**?** if you cannot decide

1. Stimulating  Yes  ?  No
2. Boring  Yes  ?  No
3. Slow  Yes  ?  No
4. Ambitious  Yes  ?  No
5. Stupid  Yes  ?  No
6. Responsible  Yes  ?  No
7. Intelligent  Yes  ?  No
8. Easy to make enemies  Yes  ?  No
9. Talk too much  Yes  ?  No
10. Smart  Yes  ?  No
11. Lazy  Yes  ?  No
12. Unpleasant  Yes  ?  No
13. Active  Yes  ?  No
14. Narrow interest  Yes  ?  No
15. Loyal  Yes  ?  No
16. Work well together  Yes  ?  No
17. Bother me  Yes  ?  No
18. Waste of time  Yes  ?  No
YOUR SUPERVISOR

Do the following items describe you supervisor (or the person you generally report to) in general?

Circle Yes if this item describes your supervisor most of the time

No if the item does not describe your supervisor most of the time

? if you cannot decide

1. Hard to please  Yes ? No
2. Impolite  Yes ? No
3. Praises good work  Yes ? No
4. Tactful  Yes ? No
5. Up-to-date  Yes ? No
6. Quick-tempered  Yes ? No
7. Tells me where I stand  Yes ? No
8. Annoying  Yes ? No
9. Stubborn  Yes ? No
10. Knows job well  Yes ? No
11. Bad  Yes ? No
12. Intelligent  Yes ? No
13. Lazy  Yes ? No
14. Around when needed  Yes ? No
15. Interferes with my work  Yes ? No
16. Gives confusing directions  Yes ? No
17. Knows how to supervise  Yes ? No
18. Cannot be trusted  Yes ? No
PAY AND BENEFITS
Do the following items describe your pay and benefits in general?

Circle Yes  if the item describes your pay and benefits most of the time
No  if the item does not describe your pay and benefits most of the time
?  if you cannot decide

1. Barely live on income  Yes  ?  No
2. Bad  Yes  ?  No
3. Insecure  Yes  ?  No
4. Underpaid  Yes  ?  No
5. Unfair  Yes  ?  No
6. Enough for what I need  Yes  ?  No

PROMOTION OPPORTUNITIES
Do the following items describe your promotion opportunities in general?

Circle Yes  if the item describes your promotion opportunities most of the time
No  if the item doesn’t describe your promotion opportunities most of the time
?  if you cannot decide

1. Good opportunity for advancement  Yes  ?  No
2. Promotion of ability  Yes  ?  No
3. Dead end job  Yes  ?  No
4. Good chance for promotion  Yes  ?  No
5. Fairly good chance for promotion  Yes  ?  No
6. Easy to get ahead  Yes  ?  No
GENERAL HAPPINESS

Part 1 Directions: Use the list below to answer the following question: IN GENERAL, HOW HAPPY OR UNHAPPY DO YOU USUALLY FEEL? Check the one statement below that best describes your average happiness.

10. Extremely happy (feeling ecstatic, joyous, fantastic!)
9. Very happy (feeling really good, elated!)
8. Pretty happy (spirits high, feeling good.)
7. Mildly happy (feeling fairly good and somewhat cheerful.)
6. Slightly happy (just a bit above neutral)
5. Neutral (not particularly happy or unhappy)
4. Slightly unhappy (just a bit above neutral.)
3. Mildly unhappy (just a little low.)
2. Pretty unhappy (somewhat “blue”, spirits down.)
1. Very unhappy (depressed, spirits very low.)
0. Extremely unhappy (utterly depressed, completely down.)

Part 2 Directions: Consider your emotions a moment further. On average, what percent of the time do you feel happy? What percent of the time do you feel unhappy? What percent of the time do you feel neutral (neither happy nor unhappy)? Write down your best estimates, as well as you can, in the spaces below. Make sure the three figures add-up to 100%.

On Average:
The percent of time I feel happy _________%
The percent of time I feel unhappy _________%
The percent of time I feel neutral _________%
TOTAL: __100___%
TRAIT-LEVEL POSITIVE AND NEGATIVE AFFECT

Instructions: The next set of questions utilizes a five point scale. Please read each question and circle the point on the scale that most accurately represents your feelings about the given issue. Please answer ALL of the questions. Do NOT use N/A as a response.

Please read the following list of thoughts and emotions and indicate how often you GENERALLY FEEL THIS WAY; that is, HOW YOU FEEL ON AVERAGE.

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Excited</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Nervous</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Enthusiastic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Irritable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Proud</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Hostile</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Alert</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Scared</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Determined</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. Upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

SATISFACTION WITH NEUTRAL OBJECTS

In this final section we are interested in your feelings about several items. Consider each item carefully Please circle the option that best represents your feelings about the item.

<table>
<thead>
<tr>
<th>Item</th>
<th>Satisfied</th>
<th>Neutral</th>
<th>Dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>The way people drive</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Telephone service</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8 ½” x 11” paper</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Your telephone number</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>No. 2 pencils</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The color of stop signs</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Self-service gas stations</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The postal service</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The people you know</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The highway system</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
**SOCIAL SELF-ESTEEM**

**Instructions:** Please place a number in the space provided beside each of the statement below according to the following scale:

<table>
<thead>
<tr>
<th>Completely Unlike Me</th>
<th>Exactly Like Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

1. I find it hard to talk to strangers. | 1 | 2 | 3 | 4 | 5 | 6 |
2. I lack confidence with people. | 1 | 2 | 3 | 4 | 5 | 6 |
3. I am socially effective. | 1 | 2 | 3 | 4 | 5 | 6 |
4. I feel confident in social situations. | 1 | 2 | 3 | 4 | 5 | 6 |
5. I am easy to like. | 1 | 2 | 3 | 4 | 5 | 6 |
6. I get along well with other people. | 1 | 2 | 3 | 4 | 5 | 6 |
7. I make friends easily. | 1 | 2 | 3 | 4 | 5 | 6 |
8. I am lively and witty in social situations. | 1 | 2 | 3 | 4 | 5 | 6 |
9. When I am with other people I lose self-confidence. | 1 | 2 | 3 | 4 | 5 | 6 |
10. I find it difficult to make friends. | 1 | 2 | 3 | 4 | 5 | 6 |
11. I am no good at all from a social standpoint. | 1 | 2 | 3 | 4 | 5 | 6 |
12. I am a reasonable good conversationalist. | 1 | 2 | 3 | 4 | 5 | 6 |
13. I am popular with people my own age. | 1 | 2 | 3 | 4 | 5 | 6 |
14. I am afraid of large parties. | 1 | 2 | 3 | 4 | 5 | 6 |
15. I truly enjoy myself at social functions. | 1 | 2 | 3 | 4 | 5 | 6 |
16. I usually say the wrong thing when I talk with people. | 1 | 2 | 3 | 4 | 5 | 6 |
17. I am confident at parties. | 1 | 2 | 3 | 4 | 5 | 6 |
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18.</td>
<td>I am usually unable to think of anything interesting to say to people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19.</td>
<td>I am a bore with most people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20.</td>
<td>People do not find me interesting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21.</td>
<td>I am nervous with people who are not close friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22.</td>
<td>I am quite good at making people feel at ease with me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23.</td>
<td>I am more shy than most people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24.</td>
<td>I am a friendly person.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25.</td>
<td>I can hold people’s interest easily.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26.</td>
<td>I don’t have much “personality”.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27.</td>
<td>I am a lot of fun to be with.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28.</td>
<td>I am quite content with myself as a person.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29.</td>
<td>I am quite awkward in social situations.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30.</td>
<td>I do not feel at ease with other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
MORAL IDENTITY

Listed below are some characteristics that may describe a person [list of nine traits]. The person with these characteristics could be you or it could be someone else. For a moment, visualize in your mind the kind of person who has these characteristics. Imagine how that person would think, feel, and act. When you have a clear image of what this person would be like, answer the following questions.

**List of Characteristics:**
1. Caring
2. Compassionate
3. Fair
4. Friendly
5. Generous
6. Hardworking
7. Helpful
8. Honest
9. Kind

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>It would make me feel good to be a person who has these characteristics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2.</td>
<td>Being someone who has these characteristics is an important part of who I am.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3.</td>
<td>A big part of my emotional well-being is tied up in having these characteristics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4.</td>
<td>I would be ashamed to be a person who has these characteristics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5.</td>
<td>Having these characteristics is not really important to me.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6.</td>
<td>I strongly desire to have these characteristics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7.</td>
<td>Having these characteristics is an important part of my sense of self.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8.</td>
<td>I often wear clothes that identify me as having these characteristics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9.</td>
<td>The types of things I do in my spare time (e.g., hobbies) clearly identify me as having these characteristics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10.</td>
<td>The kinds of books and magazines that I read identify me as having these characteristics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>11.</td>
<td>The fact that I have these characteristics is communicated to others by my membership in certain organizations.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12.</td>
<td>I am actively involved in activities that communicate to others that I have these characteristics.</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
PERCEIVED CONTROL

Instructions: Please use the 7-point rating scale below to indicate the extent to which you agree with the following statements.

1. Strongly Disagree                    5. Slightly Agree
3. Slighty Disagree                    7. Strongly Agree
4. Neither Agree of Disagree

1. _______ I can influence the way work is done in my department.

2. _______ I can influence decisions taken in my department.

3. _______ I have the authority to make decisions at work
LEARNING TO DISTINGUISH THE 3 TYPES OF UNFAIRNESS

Have you ever been treated unfairly at work? For most people the answer is yes. Maybe you didn’t receive a promotion you thought you deserved or were not given input into the process used to give raises. Also, you may have thought that your boss was incredibly rude to you when he conveyed this information. All of these examples illustrate various types of workplace unfairness. Perceived unfairness at work can be placed into one of three categories (a) unfair outcomes, (b) unfair procedures, and (c) unfair interpersonal interactions. These types of workplace unfairness can come from your superiors/boss(es), coworkers, or the organization as a whole.

Model of the Three Categories of Organizational Unfairness

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome Unfairness</strong></td>
<td>Perceived unfairness of outcome</td>
<td>I didn’t get the pay raise I deserved.</td>
</tr>
<tr>
<td><strong>Procedural Unfairness</strong></td>
<td>Perceived unfairness of process used to determine outcome</td>
<td>I didn’t have input into the process used to give raises and was given a poor explanation of why I received the raise I did.</td>
</tr>
<tr>
<td><strong>Interactional Unfairness</strong></td>
<td>Perceived degree to which one is treated with disrespect and lack of concern</td>
<td>When telling me about my raise, my supervisor was rude and insulting.</td>
</tr>
</tbody>
</table>
**Defining the 3 Types of Unfairness**

**Unfair Outcome:** Perceived unfairness regarding the *amount* and *allocation* of rewards among individuals.

**Unfair Procedure:** Perceived unfairness of the *process* used to determine the distribution of rewards.

**Unfair Interaction:** The perception that you have been treated disrespectfully with a lack of dignity and concern and/or that important information has been withheld from you.

A key element of unfairness is your *perception* of what is unfair. In other words, unfairness is subjective, and it resides within the perception of the individual. In this study, *I am interested in what you perceive to be unfair*. As long as you think that a workplace event/interaction you were subject to was unfair, you should initiate an unfairness survey on your palm pilot. For example, it doesn’t matter if your coworkers think that you didn’t deserve a pay raise. As long as you feel unfairly treated, you should label that event as unfair for the purpose of this study.
Some Examples of Workplace Unfairness:

1. Unfair Outcome
   a. You are denied a pay raise you feel you deserve.
   b. Your organization increases your yearly health insurance deductible (and you feel that this is unfair).
   c. Your boss gives you a task to complete that you believe is outside the realm of your job description.
   d. You are terminated or transferred to another department (and you feel that this is unfair).

2. Unfair Procedure
   a. Your manager does not allow you to voice your opinion during the raise allocation process.
   b. You believe the procedure used to allocate raises was biased in some way.
   c. You believe the procedure used to allocate raises was based on inaccurate information.
   d. You were unable to appeal the decision your manager made not to give you a raise.
   e. Company protocol was not followed in a way that negatively affected you (and you feel this was unfair).

3. Unfair Interaction
   a. Your boss or coworkers yell at you (and this upsets you).
   b. Your boss or coworkers tell inappropriate jokes about you (and this upsets you).
   c. A customer, client, or colleague is rude to you.
   d. You receive a rude or inappropriate email from a coworker/contractor/customer/boss etc.
   e. Your coworker “throws you under the bus” during an important meeting.
   f. Your coworker gives you the “cold shoulder” without good reason.

Note: This list is not exhaustive, but should help you understand the distinction between the various types of unfairness**
Exercise #1

Instructions: This exercise requires you to think about past work-related events and interactions you had in which you were treated unfairly. Think of one example of each type of unfairness from your past and write a brief description of the event in the space provided below.

Unfair workplace outcome:

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

Unfair workplace procedure:

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

Unfair workplace interaction:

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________
Exercise #2

Instructions: The following are examples of the three types of workplace unfairness. Read each example and categorize it based on the definitions that you just learned. Remember, the three categories of unfairness are: outcome, procedure, and interaction unfairness.

1. You are informed that your on-the-job internet access has been limited even though you know you haven’t abused the system.
   a. What type(s) of unfairness is this? ______________

2. The guy in the cubicle next to you blasts his radio. You ask him to turn it down and he tell you to mind your own business.
   a. What type(s) of unfairness is this? ______________

3. You attend an office birthday party and you are the only person who doesn’t get cake.
   a. What type(s) of unfairness is this? ______________

4. You make a mistake at work that costs the company money. Your boss decides to fire you even though it is company policy to issue a written warning for this type of error.
   a. What type(s) of unfairness is this? ______________

5. A friend in your office tells you that another person at your company has been spreading rumors about you?
   a. What type(s) of unfairness is this? ______________

6. Your company has a history of giving their employees turkeys for the Thanksgiving holiday. This year, they decide not to do it.
   a. What type(s) of unfairness is this? ______________

7. Your boss makes a decision that affects you based on biased or inaccurate information.
   a. What type(s) of unfairness is this? ______________
8. You coworkers know that you are going to be laid off, but withhold this information from you.
   
   a. What type(s) of unfairness is this? ____________________

9. You leave $5 in your desk drawer to use later for the office vending machine. You come to work the next day to find that it is gone.

   a. What type(s) of unfairness is this? ____________________

10. You are given a monetary award for being the “employee of the month” in June. Your coworker receives the “employee of the month” award in July and receives a check for twice as much money as you.

    What type(s) of unfairness is this? ____________________
APPENDIX C: EXAMPLE PALMTOP SCREENS

**PMAT**

Purdue
Momentary
Assessment
Tool

Programmed by Bangstate, Inc.

![Screen #1](image1)

**Instructions**

Please indicate the extent to which you are experiencing the following emotions at this moment.

![Screen #2](image2)

**Questions**

To what extent do you feel "irritable"?

- [ ] Very slightly or not at all
- [x] A Little
- [ ] Moderately
- [ ] Quite a bit
- [ ] Extremely

![Begin](image3)

![OK](image4)
Screen #3

Questions

Did the event you experienced involve an unfair outcome?

☑ Yes
☐ No

Screen #4

Questions

To what extent is your outcome unfair given the effort you have put into your work?

☐ To a Small Extent
☐
☐
☑
☐ To a Large Extent
## APPENDIX D: PALM EVENT-CONTINGENT MEASURES

### DISTRIBUTIVE INJUSTICE MEASURE

<table>
<thead>
<tr>
<th>Construct</th>
<th>Palm Event-Contingent Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributive Injustice</td>
<td>1. To what extent is your outcome unfair given the effort that you put into your work?</td>
</tr>
<tr>
<td></td>
<td>2. To what extent is your outcome inappropriate given the work you have completed?</td>
</tr>
<tr>
<td></td>
<td>3. To what extent does your outcome not reflect what you have contributed to the organization?</td>
</tr>
<tr>
<td></td>
<td>4. To what extent is your outcome unjustified given your performance?</td>
</tr>
</tbody>
</table>

### PROCEDURAL INJUSTICE MEASURE

<table>
<thead>
<tr>
<th>Construct</th>
<th>Palm Event-Contingent Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedural Injustice</td>
<td>1. To what extent were you unable to express your views and feelings during those procedures?</td>
</tr>
<tr>
<td></td>
<td>2. To what extent did you lack influence over the outcome arrived at by those procedures?</td>
</tr>
<tr>
<td></td>
<td>3. To what extent was the procedure applied inconsistently?</td>
</tr>
<tr>
<td></td>
<td>4. To what extent was the procedure biased?</td>
</tr>
<tr>
<td></td>
<td>5. To what extent was the procedure based on inaccurate information?</td>
</tr>
<tr>
<td></td>
<td>6. To what extent are you able to appeal the outcome arrived at by the procedure? (reverse coded)</td>
</tr>
<tr>
<td></td>
<td>7. To what extent did the procedure fail to meet ethical and moral standards?</td>
</tr>
</tbody>
</table>

### INTERACTIONAL INJUSTICE MEASURE

<table>
<thead>
<tr>
<th>Construct</th>
<th>Palm Event-Contingent Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactional Injustice</td>
<td>1. To what extent did the individual(s) you interacted with treat you in an impolite manner?</td>
</tr>
<tr>
<td></td>
<td>2. To what extent did the individual(s) you interacted with treat you disrespectfully?</td>
</tr>
<tr>
<td></td>
<td>3. To what extent was the individual(s) you interacted with dishonest when communicating with you?</td>
</tr>
<tr>
<td></td>
<td>4. To what extent did the individual(s) you interacted with fail to communicate details to you in a timely manner?</td>
</tr>
</tbody>
</table>
I would like some information about your reactions to the study. Please circle the answer that best describes your reactions to the study.

1. To what extent did you enjoy being a participant in this study?
   - Not at all
   - A little
   - A great deal

2. To what extent did the Palm signal get annoying?
   - Not at all
   - A little
   - A great deal

3. To what extent did the monetary incentives (i.e., $40 payment plus the possibility of winning $500) influence your participation?
   - Not at all
   - A little
   - A great deal

4. Did you have any concerns about the confidentiality of your responses?
   - Not at all
   - Some concerns
   - Serious concerns

5. How often was it truly difficult for you to respond to the beep?
   - Never
   - Rarely
   - Occasionally
   - Often
   - Always
6. Did the training session at the beginning of the study cover all the necessary information to complete the study?
   Yes
   No (please describe below what should have been covered)

7. Did the Palm alarm fail to sound during the study
   Yes, one day
   Yes, more than one day
   No

8. Sometimes I missed beeps because…(please circle all that apply)
   The alarm was too quiet to hear
   I was in a meeting
   I was too busy
   I was in a bad mood
   I was in a good mood
   Nothing had happened to me
   I had an upset client
   I wasn’t doing my work and I didn’t want to report to it
   Other, describe______________________________________________

9. Thank you very much for your time and participation! Please use the space below and the back of the survey to give us reactions to this research or tell us more about your experiences at your organization.
JOB SATISFACTION

Instructions: Please use the 7-point rating scale below to indicate the extent to which you agree with the following statements.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th></th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All in all I am satisfied with my job</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. In general I don’t like my job</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. In general I like working here</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I frequently think of quitting this job</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Instructions: Please circle the face that best describes how satisfied you are with your job in general. 1=Happiest 5=Saddest
ORGANIZATIONAL COMMITMENT SCALES (REVISED)

Note: The items comprising the Organizational Commitment Scales are not presented to respondents in the order shown, but, rather, are mixed together to form one 18-item series. Each item is presented with a 7-point response scale (1=strongly disagree and 7=strongly agree). Reversed scored items are indicated with an "(R)". Instructions are presented below.

Listed below is a series of statements that represent feelings that individuals might have about the company or organization for which they work. With respect to your own feelings about the particular organization for which you are now working, please indicate the degree of your agreement or disagreement with each statement by circling a number from 1 to 7.

AFFECTIVE COMMITMENT SCALE
1. I would be very happy to spend the rest of my career with this organization.
2. I really feel as if this organization's problems are my own.
3. I do not feel a strong sense of "belonging" to my organization. (R)
4. I do not feel "emotionally attached" to this organization. (R)
5. I do not feel like "part of the family" at my organization. (R)
6. This organization has a great deal of personal meaning for me.

CONTINUANCE COMMITMENT SCALE
1. Right now, staying with my organization is a matter of necessity as much as desire.
2. It would be very hard for me to leave my organization right now, even if I wanted to.
3. Too much of my life would be disrupted if I decided I wanted to leave my organization now.
4. I feel that I have too few options to consider leaving this organization.
5. If I had not already put so much of myself into this organization, I might consider working elsewhere.
6. One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.

NORMATIVE COMMITMENT SCALE
1. I do not feel any obligation to remain with my current employer. (R)
2. Even if it were to my advantage, I do not feel it would be right to leave my organization now.
3. I would feel guilty if I left my organization now.
4. This organization deserves my loyalty.
5. I would not leave my organization right now because I have a sense of obligation to the people in it.
6. I owe a great deal to my organization.
TURNOVER INTENTIONS

Instructions: Please use the 7-point rating scale below to indicate the extent to which you agree with the following statements.

1. Strongly Disagree    5. Slightly Agree
3. Slightly Disagree    7. Strongly Agree
4. Neither Agree nor Disagree

1. _____ I intend to leave this organization within the next year.
2. _____ I would leave my job if a position were available in another organization.
3. _____ I intend to remain with this organization indefinitely. (Reverse Coded)

ABSENTEEISM

1. Overall, what is the total number of days that you have arrived for work late in the past 12 months? _____

2. Overall, what is the total number of days that have you been absent in the past 12 months? _____

3. During the past 12 months how many times have you been absent? (Please count two or more consecutive days as one time. For example, if you missed three consecutive days count this as one time.) ________
BURNOUT

Instructions: For each statement below, please write the number that best describes how you feel about your current job. Use the following scale to indicate the extent to which you agree or disagree with each statement:

1. Totally Disagree
2. Somewhat Disagree
3. Somewhat Agree
4. Totally Agree

Exhaustion

___ There are days that I feel already tired before I go to work
___ After my work, I now need more time to relax than in the past to become fit again
___ I can stand the pressure of my work very well
___ During my work, I often feel emotionally drained
___ After my work, I usually feel still totally fit for my leisure activities
___ After my work, I usually feel worn out and weary
___ Normally, I can manage the amount of work well
___ When I work, I usually feel vital

Disengagement

___ I always find new and interesting aspects in my work
___ It happens more and more often that I talk about my work in a derogatory way
___ Lately, I tend to think less during my work and just execute it mechanically
___ I experience my work as a real challenge
___ With the times, one loses the internal relationship with one’s work
___ Sometimes I feel really sick about my work tasks
___ I cannot imagine another occupation for myself
___ I get more and more engaged in my work
WORKPLACE DEVIANCE

Instructions: For each statement below, please write the number that best describes the extent to which you engaged in each of the following behaviors in the last three weeks.

1  2  3  4  5  6  7
Never       Daily

Interpersonal Deviance

1. _____ Made fun of someone at work
2. _____ Said something hurtful to someone at work
3. _____ Made an ethnic, religious, or racial remark at work
4. _____ Cursed at someone at work
5. _____ Played a mean prank on someone at work
6. _____ Acted rudely toward someone at work
7. _____ Publicly embarrassed someone at work

Organizational Deviance

1. _____ Taken property from work without permission
2. _____ Spent too much time fantasizing or daydreaming instead of working
3. _____ Falsified a receipt to get reimbursed for more money than you spent on business expenses
4. _____ Taken an additional or longer break than is acceptable at your workplace
5. _____ Come in late to work without permission
6. _____ Littered your work environment
7. _____ Neglected to follow your boss’s instructions
8. _____ Intentionally worked slower than you could have worked
9. _____ Discussed confidential company information with an unauthorized person
10. _____ Used an illegal drug or consumed alcohol on the job
11. _____ Put little effort into your work
12. _____ Dragged out work in order to get overtime
You will get a copy of the aggregated results of the study in late 2010. The publication version will be complete some time after this. If you would like to receive a copy of the publication version when it becomes available, please write your email address below: ________________________________
REFERENCES


