

Hostility, Job Attitudes, and Workplace Deviance: Test of a Multilevel Model

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The authors tested a model, inspired by affective events theory (H. M. Weiss & R. Cropanzano, 1996), that examines the dynamic nature of emotions at work, work attitudes, and workplace deviance. Sixty-four employees completed daily surveys over 3 weeks, reporting their mood, job satisfaction, perceived interpersonal treatment, and deviance. Supervisors and significant others also evaluated employees' workplace deviance and trait hostility, respectively. Over half of the total variance in workplace deviance was within-individual, and this intraindividual variance was predicted by momentary hostility, interpersonal justice, and job satisfaction. Moreover, trait hostility moderated the interpersonal justice–state hostility relation such that perceived injustice was more strongly related to state hostility for individuals high in trait hostility.

Keywords: workplace deviance, moods, emotions, job attitudes

For most individuals, work is a context to which they devote most of their waking hours and from which they derive a central measure of their identity (Hulin, 2002). It is no surprise, then, that the workplace is a forum for the expression of various behaviors that are of consequence to individuals, organizations, and society. Although some of these organizational behaviors—such as helping and citizenship behaviors—are socially desirable (judged favorably by most members of society), another set of behaviors may be viewed by many as improper or outside normal conventions of acceptability. Researchers have investigated these behaviors under various labels, including *workplace deviance* (Bennett & Robinson, 2003), *counterproductive behavior* (Mangione & Quinn, 1975), and *antisocial behavior* (Giacolone & Greenberg, 1997). Robinson and Bennett (1995) defined workplace deviance as “voluntary behavior of organizational members that violates significant organizational norms, and in so doing, threatens the well-being of the organization and/or its members” (p. 556). Although deviance has been conceptualized and measured at varying levels of specificity, conceptual (Hulin, 1991) and empirical (Lee & Allen, 2002) research has suggested the benefits of considering the specific behaviors as indicators of a broad unitary construct.

In their review of the literature on the antecedents of workplace deviance, Bennett and Robinson (2003) noted the existence of three distinct research trends: (a) studies in which deviance is conceptualized as a reaction to experiences at work, (b) studies that examine deviance as a reflection of employees' personality, and (c) studies that investigate deviance as adaptation to the social context at work. In the first set of influences (deviance as a

reaction to work experiences), research has established that job dissatisfaction is related to measures of deviance in particular (Bennett & Robinson, 2003) and withdrawal behaviors more generally (Hulin, 1991). Second (although this issue perhaps falls in between the first and second areas because it has been based on between-individual designs), evidence suggests that anger and hostility are positively related to deviance or counterproductive behaviors (Fox & Spector, 1999; Lee & Allen, 2002).

Finally, in the third category (deviance as adaptation to the social context), Robinson and Greenberg (1998) noted that unfair interpersonal treatment is a prominent social influence on deviance. The key concept here may be interpersonal justice. Following Bies and Moag's (1986) introduction of interactional justice, Greenberg (1993a) proposed that interactional justice should be separated into two components: informational justice and interpersonal justice. Interpersonal justice captures the respect (e.g., treating people with dignity and courtesy) and propriety (e.g., refraining from improper comments) criteria of interactional justice and is concerned with the fairness of interpersonal treatment that individuals receive. A recent meta-analysis provided support for the distinction of interpersonal justice from the other justice dimensions and demonstrated that, of the four types of justice (distributive, procedural, interpersonal, informational), interpersonal justice was most strongly related to deviant behaviors (Colquitt, Conlon, Wesson, Porter, & Ng, 2001).

In this article, we consider a model that opens up another area of research, though it includes many of the previously studied constructs at a different level of analysis. That is, we study the dynamic associations of job attitudes (job satisfaction), the social context (interpersonal justice) and affect (in the form of state hostility) with workplace deviance, and the moderating effect of personality (trait hostility) on the interpersonal justice–state hostility association. In doing so, we respond to Mischel and Shoda's (1998) call for studies of intraindividual processing and interindividual differences (personality traits) within an integrated research framework. Robinson and Greenberg (1998) noted, “Current con-

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ceptualizations of workplace deviance are static in nature” (p. 22). This suggests that we can advance the literature on workplace deviance theoretically and empirically by studying dynamic (within-individual, longitudinal) processes (Bennett & Robinson, 2003). The model we developed was inspired by Weiss and Cropanzano’s (1996) affective events theory (AET), which considers the dynamic nature of workplace affect, attitudes, and behaviors. In the next section of the article, we present the model, discuss its genesis in AET, and, finally, hypothesize relations among the constructs.

Model and Hypotheses

The hypothesized model is shown in Figure 1. Consistent with AET (Weiss & Cropanzano, 1996), the model incorporates cognitive, affective, and attitudinal states (interpersonal justice perceptions, state hostility, and job satisfaction) as well as dispositional constructs (trait hostility), with workplace deviance being the end criterion variable. We decided to focus on interpersonal justice because of its relatively stronger relation with deviant behaviors (Colquitt et al., 2001) and also because it is likely that interpersonal justice exhibits greater intraindividual variability (e.g., day to day) than do distributive or procedural justice. This notion of intraindividual variability in behavior (changes across time) fits well with the focus of AET on the dynamic nature of events and affect.

AET proposes that the work environment in general and work events in particular lead to affective reactions (e.g., anger, joy) experienced at work, which then lead to work attitudes (e.g., job satisfaction) and work behaviors, which may be affect driven or judgment driven. A core premise of AET is that researchers must distinguish job satisfaction from affect (mood or emotions) experienced at work and that each (emotions and job satisfaction) is likely to have an independent influence on workplace behaviors. Another key assertion is that models that incorporate work affect must be dynamic in nature. As Weiss and Cropanzano (1996) noted, “Research on mood and emotion clearly indicates that affect levels fluctuate over time and that the patterns of these fluctuations are predictable to a great extent” (p. 65).

Though tests of parts of AET are accumulating (e.g., Fisher, 2002), the model we develop in Figure 1 represents the first application of AET to workplace deviance. The model is broadly consistent with AET in proposing that an attribute of the social context (interpersonal justice) leads to an affective reaction (state hostility), which then, in turn, leads to job satisfaction and, finally, to a behavior (workplace deviance). Implicit in this model is the assumption that workplace deviance is, at least in part, affect driven. Although Weiss and Cropanzano (1996) did not discuss workplace deviance per se, they noted that numerous withdrawal behaviors may be affect driven because they are less considered, tend to be spontaneous, and thus are more likely to reflect immediate affect levels. However, deviant behavior need not be spontaneous in every occasion; individuals may also engage in workplace deviance after cognitive deliberation. Thus, in the current study, we conceptualize workplace deviance as both an affect-driven behavior and a judgment-driven behavior. This position fits well with recent research by Lee and Allen (2002), who reported that both job affect and job cognitions predicted workplace deviance, and with AET, which includes both types of behaviors. Having discussed the origins of the hypothesized model, we next discuss the hypothesized relations within the model.

Hypotheses

According to AET (Weiss & Cropanzano, 1996), events are defined simply as “a change in circumstances, a change in what one is currently experiencing” (p. 31). AET focuses on significant events, that is, events that “generate an emotional reaction or mood change in people” (p. 31). Following Weiss, Suckow, and Cropanzano (1999), we propose that instances of interpersonally unfair treatment are significant events that trigger negative emotions. In essence, unfair treatment is a shock that generates both an affective reaction and a cognitive appraisal of the situation. One theory of organizational justice, fairness theory (Folger & Cropanzano, 2001), specifically addresses the role of emotions in unfair treatment, and we discuss this theory below.

An extension of referent cognitions theory (Folger, 1987), fairness theory (Folger & Cropanzano, 2001) stipulates that emotions

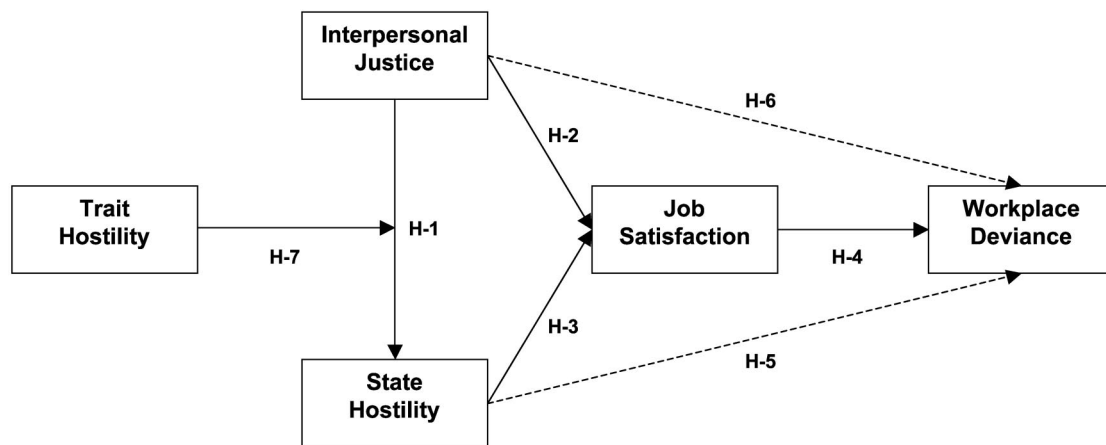


Figure 1. Conceptual model of the relations among interpersonal justice, hostility, job satisfaction, and workplace deviance. H = hypothesis.

are an important part of reactions to injustice and stresses that people frequently make justice assessments in a rapid and automatic fashion. An individual who determines that a transgressor has violated some internal moral standard is likely to experience negative emotions, such as anger and hostility (Folger, 1987). Bies (1987) described these feelings as “moral outrage” (p. 290), and Folger, Cropanzano, and Goldman (2005) discussed these feelings as a “deontic response,” that is, an obligatory response to some event (p. 216). Furthermore, the nature of emotions associated with injustice is likely to be specific. Watson (2000) suggested, “When we are treated unfairly by another person, we feel anger and annoyance, not guilt and nervousness” (p. 39). A study of terminated employees by Goldman (2003) supported this notion and demonstrated that state anger partially mediated the relation between justice and legal claiming. Moreover, interactional justice displayed the strongest relation with state anger, with distributive and procedural justice controlled. Although the empirical results by Goldman (2003) were between-individual, we expect instances of interpersonal injustice to be related to hostile emotions, within-individuals. To date, researchers have not examined this empirically. However, the tenets of both AET and fairness theory do not imply strictly between-individual effects. In fact, AET particularly stresses the importance of examining work events and affective states over time.

Hypothesis 1: Within individuals, interpersonal justice is negatively related to state hostility (across time).

Interpersonal injustice not only may induce the experience of negative emotions, such as hostility, but also should decrease employees’ satisfaction with their job. Because job satisfaction reflects individuals’ evaluations of various aspects of their job and injustice represents a negative aspect of the job, when individuals feel that they have been treated unjustly at work, they will naturally experience lower satisfaction with their job. The results of the meta-analysis on organizational justice by Colquitt et al. (2001) showed that between-individual differences in interpersonal justice were moderately and positively related to job satisfaction. Employees who are treated fairly during their interactions with their supervisors are more likely to view their job and job experiences as more satisfying than those who are treated unfairly. However, the dynamic, within-individual nature of interpersonal justice and job satisfaction has yet to be examined. On this point, AET suggests that work events (in this case, instances of injustice) are associated with work attitudes, such as job satisfaction, and may fluctuate over time. Accordingly, we expect that daily occurrences of unfair treatment will impact an individual’s appraisal of his or her job satisfaction.

Hypothesis 2: Within individuals, interpersonal justice is positively related to job satisfaction (across time).

Though past research has not considered the dynamic state hostility–job satisfaction relation, theoretically, the relation can be supported from the literatures on emotional labor and emotional control. The literature on emotional labor suggests that the display (or suppression) of emotions—the act of conforming to a display rule (Ashforth & Humphrey, 1993)—promotes feelings of estrangement, dissonance, and exhaustion (Glomb & Tews, 2004).

Indeed, in social psychology, research on the suppression of emotional expression suggests that suppression strategies are not an effective means of diminishing the subjective experience of the emotion (Levenson, 1994). Thus, if individuals experience anger while at work, workplace norms may work to suppress the expression of anger. However, because the emotion itself is unmitigated, it should continue to be dissatisfying, the suppression may breed further frustration, and lower job satisfaction will likely result.

Previously, we suggested that state hostility is an outcome of interpersonally unfair treatment (see Hypothesis 1). According to AET, the effects of work events on work attitudes are transmitted through affective reactions. Following an event, individuals first experience emotions and then turn to cognitive appraisals. In the context of the present study, this suggests that state hostility should mediate, as least in part, the relation between interpersonal justice and job satisfaction.

Hypothesis 3: Within individuals, state hostility is negatively related to job satisfaction (Hypothesis 3a), and state hostility partially mediates the relation between interpersonal justice and job satisfaction (Hypothesis 3b).

We are aware of no published research on the within-individual relation between job satisfaction and workplace deviance. However, we can use both theory and empirical data to support such a link. Theoretically, if deviant behavior is a form of adaptation, then it stands to reason that deviance represents a means of adjusting to a frustrating job. Dissatisfied employees may engage in deviant behavior as a cathartic means of restoring control over the job (Bennett & Robinson, 2003). Alternatively, one can see deviance as a form of withdrawal in which employees engage in behaviors to reduce job inputs (Hulin, 1991). Empirically, the job satisfaction–withdrawal relation is relatively strong and robust (Hulin, 1991, 2002). Though the empirical support is between-individual, we expect job satisfaction to be related to workplace deviance within-individuals as well. If workplace deviance is a form of withdrawal or adaptation or even the result of catharsis (Bennett & Robinson, 2003), then it is reasonable to expect that the adaptation takes place on a real-time basis. This is especially apparent after one considers the definition of job satisfaction as a state (Locke, 1976), which implies that satisfaction levels may vary from one day to the next.

Hypothesis 4: Within individuals, job satisfaction is negatively related to workplace deviance (across time).

Andersson and Pearson (1999) hypothesized that feelings of anger increase the probability of enactment of organizational incivility. In a between-individuals study, Lee and Allen (2002) found that, of the three positive affects and four negative affects investigated, hostility had the strongest correlation with workplace deviance ($r = .27, p < .01$). Similarly, Fox and Spector (1999) found that anger correlated .59 with self-reported counterproductive behaviors. Though these studies suggest that hostility is related to workplace deviance, because they used between-individual measures, they are unable to address the dynamic, within-individual association between state hostility and deviant behavior.

AET suggests that affective reactions such as hostility are directly related to affect-driven behaviors (Weiss & Cropanzano,

1996). In contrast, the effects of affective reactions on judgment-driven behaviors are mediated by work attitudes. As discussed previously, workplace deviance contains both affective and cognitive components (Lee & Allen, 2002). Thus, hostile emotions should exert both direct effects and indirect effects on deviant behaviors. In particular, feelings of reduced job satisfaction should partially mediate the relation between state hostility and workplace deviance. Thus, we formed the following hypothesis.

Hypothesis 5: Within individuals, state hostility is positively related to workplace deviance (Hypothesis 5a), and job satisfaction partially mediates the state hostility–workplace deviance relation (Hypothesis 5b).

As discussed previously, fairness theory (Folger & Cropanzano, 2001) suggests that negative emotions often accompany instances of injustice. Furthermore, these negative emotions can elicit behavioral responses before an individual considers reasons for behaving in one way or another (Folger et al., 2005). This moral outrage (Bies, 1987) motivates individuals to seek retribution by punishing the transgressor. They can accomplish this in a variety of ways, including deviant behaviors such as theft (Greenberg, 1993b), retaliatory behaviors (Skarlicki & Folger, 1997), and sabotage (Ambrose, Seabright, & Schminke, 2002). Supporting the link between interpersonal justice and workplace deviance is the meta-analysis of organizational justice by Colquitt et al. (2001). The results of the meta-analysis revealed that interpersonal justice was the strongest predictor of workplace deviance when the other justice dimensions were controlled. To the extent that workplace deviance is an affect-driven behavior, interpersonal justice should have direct effects on workplace deviance. However, as stated above, workplace deviance may also be a judgment-driven behavior that results from the cognitive evaluation of one's job (Lee & Allen, 2002). According to AET, work attitudes mediate the relation between work events and judgment-driven behaviors. Thus, in the context of the current study, this suggests that job satisfaction should partially mediate the association between interpersonal justice and workplace deviance.

Hypothesis 6: Within individuals, interpersonal justice is negatively related to workplace deviance (Hypothesis 6a), and job satisfaction partially mediates the interpersonal justice–workplace deviance relation (Hypothesis 6b).

Moderating Effect of Trait Hostility

To study interindividual differences in the patterns of intraindividual processing (e.g., Mischel & Shoda, 1998), we examine the moderating effect of *trait hostility* on the magnitude of individuals' affective reactions—conceptualized as state hostility—to injustice, across time. Because affective traits represent individual differences in the tendency to experience a corresponding emotional state (Watson, 2000), we focus on trait hostility and not on broader traits, such as neuroticism, to maintain a close correspondence between the state and trait conceptualizations of affect. Our focus on both within- and between-individual levels of analyses and our use of state and trait conceptualizations of hostility fit rather well with the dual conceptualization of hostility, or anger, as a reaction to a specific event or series of events as well as a reflection of a dispositional trait (Plutchik, 2003).

AET specifically suggests that affective dispositions impact individuals' reactions to events. According to the theory, “affective traits appear to act as latent predispositions that help set the stage for individuals to have more or less intense bouts of emotion” (Weiss & Cropanzano, 1996, p. 37). The authors further elaborated by stating that certain individuals, such as those high in negative affectivity, are “predisposed to react more strongly to negative events when they happen to occur” (p. 37). Given the conceptual similarities between negative affectivity and trait hostility, we expect those high in trait hostility to react more strongly to negative events, such as unfair treatment.

Hypothesis 7: Trait hostility moderates the within-individual interpersonal justice–state hostility relation, such that the relation is stronger (more negative) for individuals high in trait hostility.

Method

Participants

Participants were 74 full-time employees located in organizations throughout the southeastern United States. Participants represented occupations in a variety of fields, including information technology, administration, and education. The average age of the sample was 36 years ($SD = 9.2$ years). The majority of respondents were female (72%).

Procedure

Participants were recruited via an e-mail letter describing the study and requesting their voluntary participation. Two individuals, one in a hospital administrative office and one in a public secondary educational institution, served as contacts who sent an e-mail describing the study to their coworkers. It should be noted that these contacts were not of higher organizational status than any of the participants; otherwise, participants might have felt unfairly obligated to participate. The e-mail, which we composed, described the study as an examination of the relations among mood, personality, and workplace behavior. Given that the two contacts sent the e-mail to coworkers they knew (rather than to a random list of employees), the sample is best described as a convenience sample. Individuals who wished to participate were instructed to go to a sign-up page on the study's Web site. At this time, participants viewed the informed consent form online, which assured them that they could withdraw from the study at any time without penalty. Once individuals signed up for the study, we sent detailed instructions on how and when to participate. Between the hospital administrative office and the educational institution, approximately 115 individuals were asked to participate in the study. This initial pool of individuals, much like the final sample, was composed primarily of women. Of these, 74 agreed to participate, which resulted in a response rate of 64%. Data collection took place over 3 weeks, beginning in October and ending in November of 2003. Participants who completed the study received a \$50 honorarium.

We used an interval-contingent experience-sampling methodology (ESM) in which we sent a signal via e-mail to remind participants to complete a Web-based survey at the end of their workday. We used this daily survey to assess momentary mood, interpersonal justice, job satisfaction, and deviant behavior. Participants completed the daily survey Monday through Friday for a period of 3 weeks, which resulted in a total of 15 possible observations for each individual. To maintain confidentiality and anonymity, participants entered a four-digit number of their choice each time they completed a daily survey. In addition, each participant provided this four-digit number to his or her immediate supervisor and significant other to allow us to match the surveys. A separate Web page,

which participants used to sign up for the study, collected participants' names and addresses. We used this information only to compensate participants at the end of the study, and it was in no way matched to participants' responses on the study questionnaires.

Given the demanding nature of an ESM design, we obtained usable responses from 64 of the 74 participants who originally volunteered for participation. We defined an individual as having usable data if he or she missed no more than 3 of the 15 possible daily surveys. Given that 64 individuals completed the study, the maximum number of observations across all individuals was 960. We obtained a total of 849 summated-scale ratings of mood, interpersonal justice, job satisfaction, and deviant behavior. This corresponds to an overall response rate of 88.4% across all individuals and time periods.

In addition to self-ratings of deviant behavior over time, we obtained ratings of participants' workplace deviance from their immediate supervisor. Participants were instructed to ask their immediate supervisor to complete a brief online questionnaire. Supervisors who agreed to participate were then provided with a link to the online survey as well as a statement assuring confidentiality. Finally, participants had a significant other (spouse, partner, close relative, etc.) complete a survey assessing the participant's trait hostility. We collected data from participants' significant others in the same manner as we did for participants' supervisors. We obtained complete data from supervisors and significant others for the 64 individuals in the study. In addition, we collected Internet protocol (IP) addresses with each online survey to determine that the participants did not simply complete the supervisor survey and significant other survey themselves.

Measures

Workplace deviance. We measured workplace deviance using the scale developed by Bennett and Robinson (2000). Although Bennett and Robinson (2000) have conceptualized deviance as consisting of two dimensions (interpersonal and organizational), the dimensions are very highly correlated ($r_c = .86$ in Bennett & Robinson, 2000; $r_c = .96$ in Lee & Allen, 2002). Thus, consistent with Lee and Allen (2002), we do not distinguish between the two dimensions.

For the supervisor survey, the instructions asked supervisors to "indicate how often the individual who gave you this survey has engaged in the behavior during the past three months" using a Likert scale ranging from 1 = *never* to 5 = *often*. Sample items included, "Taken property from work without permission," "Littered the work environment," "Cursed at someone at work," and, "Left work early without permission." Coefficient alpha for this scale was .86.

For the daily survey, we measured deviance using 11 items from Bennett and Robinson's (2000) measure of workplace deviance. Given that participants completed the daily survey during work hours, it was important to keep the survey brief. Thus, we eliminated items that were unlikely to vary on a daily basis or to occur during a short time period. An example is, "Discussed confidential company information with an unauthorized person." For the items included in the survey, we instructed participants to "indicate how often you engaged in the behavior today" using a Likert scale ranging from 1 = *never* to 5 = *often*. Sample items included, "Worked on a personal matter instead of work for your employer," "Said something hurtful to someone at work," "Came in late to work without permission," "Intentionally worked slower than you could have worked," and, "Acted rudely toward someone at work." The mean (across days) coefficient alpha for this scale was $\bar{\alpha} = .73$.

Interpersonal justice. We used the measure of interpersonal justice developed by Colquitt (2001). We asked participants to indicate the extent to which their supervisor had engaged in specific behaviors each day using a Likert scale of 1 = *never* to 5 = *often*. The four items were, "Has he or she treated you in a polite manner?" "Has he or she treated you with dignity?" "Has he or she treated you with respect?" and, "Has he or she

refrained from improper remarks or comments?" The mean (across days) coefficient alpha for this scale was $\bar{\alpha} = .93$.

Job satisfaction. We assessed job satisfaction using the five-item version of the Brayfield and Rothe (1951) measure. We measured all items using a 5-point Likert-type scale with anchors 1 = *strongly disagree* to 5 = *strongly agree*. Participants indicated the extent to which they agreed with the following statements about their job each day: "At this very moment, I am enthusiastic about my work," "Right now, I feel fairly satisfied with my present job," "At present, each minute at work seems like it will never end" (reverse scored), "At this moment, I am finding real enjoyment in my work," and, "Right now, I consider my job rather unpleasant" (reverse scored). The mean (across days) coefficient alpha for this scale was $\bar{\alpha} = .89$.

State hostility. We assessed state hostility with the Hostility subscale of the Positive and Negative Affect Schedule—Expanded Form (PANAS-X; Watson & Clark, 1994). We instructed participants to "indicate to what extent you experience the following states right now" using a 5-point Likert-type scale with anchors 1 = *very slightly or not at all* to 5 = *very much*. Sample adjectives for hostility include "angry," "hostile," "irritable," "scornful," and "disgusted." The mean (across days) coefficient alpha for this scale was $\bar{\alpha} = .83$.

Trait hostility. We assessed participants' trait hostility using items from the measure developed by Buss and Perry (1992) and from the Angry Hostility scale of the NEO Personality Inventory (Costa & McCrae, 1992). A significant other for each participant responded to the seven statements using a Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Sample items include, "Often gets angry at the way people treat him or her," "It takes a lot to get him or her mad" (reverse scored), "Even minor annoyances can be frustrating to him or her," and "When frustrated, s/he lets his or her irritation show." Coefficient alpha for this scale was .80.

To provide evidence of external validation to an independent report for the significant other reports of trait hostility, we also collected self-ratings of participants' trait hostility by having participants respond to the same set of items above. Coefficient alpha for this scale was .67.

Analyses

To model the relations among mood, justice perceptions, job satisfaction, and workplace deviance within individuals and to examine the moderating role of trait hostility, we used hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992). HLM allows one to analyze variables at multiple levels of analysis in a series of regression equations. In the current study, the first level of analysis included the daily, repeated measures (over time) of mood, interpersonal justice, job satisfaction, and deviance. The second level of analysis included the measure of trait hostility assessed by each participant's significant other. Thus, the Level 1 variables were nested within the Level 2 variables. The Level 1 variables were at the within-individual level of analysis, whereas the Level 2 variables were at the between-individual level of analysis. We used HLM 5 (Bryk, Raudenbush, & Congdon, 2000) to analyze the hierarchical models.

To interpret the estimates as representing strictly within-individual relations, we centered the predictor variables at each individual's mean (Hofmann, Griffin, & Gavin, 2000). This form of centering removes any between-individual variance in estimates of within-individual relations among the variables, meaning that the relations among the within-individual variables are unconfounded by personality or other individual differences.

Results

Correlations

We first calculated both within-individual and between-individual correlations among the variables. These correlations are

provided in Table 1. Estimates above the diagonal represent between-individual correlations. We obtained within-individual correlations, which are shown below the diagonal, by calculating standardized effects from simple (one independent variable) regressions in HLM using centered predictors. Of note are the correlations between the self- and other reports for workplace deviance and trait hostility. The supervisor report of employee workplace deviance correlated .40 ($p < .01$) with the aggregated employee self-report of deviance, and the significant other report of trait hostility correlated .55 ($p < .01$) with the employee self-report of trait hostility. This level of self–other agreement suggests that the self-reported measures of workplace deviance and trait hostility have external validation to independent reports.

It should be noted that the IP addresses for all but 3 of the participants were different for the daily surveys and the respective supervisor survey, which provides some evidence that the participants did not simply complete the supervisor surveys themselves. However, we did not feel that there was sufficient evidence for the 3 participants with matching IP addresses for the daily and supervisor surveys to rule out the possibility of self-completion. Thus, we excluded these individuals and reestimated the correlation between the aggregated self-ratings of workplace deviance and the supervisor ratings of workplace deviance. Excluding these 3 individuals did not change the magnitude of the correlation ($r = .40$, $p < .01$).

Partitioning of Variance Components

Before proceeding to test the linkages in the hypothesized model with HLM, we investigated whether systematic within- and between-individual variance existed in the criterion variables (state hostility, job satisfaction, and workplace deviance) by estimating a null model for each variable. The null model partitions the total variance of a dependent variable into within- and between-individual components, and the intercept for each null model represents the average level of that variable across individuals. If no within-individual variance exists in the criterion variables, then HLM is not appropriate because there is only between-individual variance to explain (i.e., there is only one level of analysis). As shown in Table 2, the null model results indicated that there was significant between-individual variance in each of the dependent variables ($p < .01$ for all variables) and that a substantial propor-

tion ($P = \rho^2 / [\rho^2 + \tau_{00}]$) of the total variance in these dependent variables was within individuals. That is, 65% of the variance in state hostility was within-person, 33% of the variance in job satisfaction was within-person, and 53% of the variance in workplace deviance was within-person. These results suggest that hierarchical modeling of these data was appropriate and that there was substantial within-person variability in the dependent construct scores to potentially be explained.

Tests of Hypotheses

Main effects. To test the main effects in Figure 1 (Hypotheses 1, 2, 3, 4, 5, and 6), we estimated a series of regressions in HLM with Level 1 variables to predict (a) state hostility, (b) job satisfaction, and (c) workplace deviance. Hypothesis 1 predicted that interpersonal justice would be negatively related to state hostility on a within-individuals basis. The regression results predicting state hostility are provided in Table 3. As the table shows, at Level 1, interpersonal justice was negatively related to state hostility. Thus, within-individuals, perceptions of injustice were associated with feelings of hostility on a day-to-day basis, supporting Hypothesis 1.

Hypothesis 2 predicted that interpersonal justice would be positively related to job satisfaction on a within-individuals basis, and Hypothesis 3a predicted that state hostility would be negatively related to job satisfaction on a within-individuals basis. The regression results predicting job satisfaction are provided in Table 4. As the results in the table show, at Level 1, interpersonal justice was positively related to job satisfaction, and state hostility was negatively related to job satisfaction. Thus, within-individuals, perceptions of justice and reduced feelings of hostility were associated with increased job satisfaction on a day-to-day basis, supporting Hypotheses 2 and 3a, respectively.

Hypotheses 4 and 6a predicted that job satisfaction and interpersonal justice would be negatively related to workplace deviance on a within-individuals basis, and Hypothesis 5a predicted that state hostility would be positively related to workplace deviance on a within-individuals basis. The regression results predicting workplace deviance are provided in Table 5. The top portion of the table displays the direct effects of interpersonal justice and state hostility on workplace deviance. As results in the table show, at Level 1, interpersonal justice

Table 1
Correlations Between Workplace Deviance and Predictor Variables Both Within and Between Individuals

Variable	1	2	3	4	5	6	7
1. Interpersonal justice (within-individual)	—	-.42**	.57**	-.30*	-.24	-.24	-.16
2. State hostility (within-individual)	-.15**	—	-.63**	.25*	.08	.02	.08
3. Job satisfaction (within-individual)	.17**	-.59**	—	-.28*	-.14*	-.17	-.13
4. Workplace deviance (within-individual)	-.09**	.32**	-.24**	—	.40**	.01	.10
5. Workplace deviance (supervisor report)					—	.29*	-.15
6. Trait hostility (significant other report)						—	.55*
7. Trait hostility (self-report)							—

Note. Correlations above the diagonal represent between-individual (aggregated) scores ($n = 64$). We calculated correlations below the diagonal by standardizing the regression coefficient obtained in hierarchical linear modeling Level 1 analyses between one predictor and one criterion ($n = 849$).
* $p < .05$. ** $p < .01$.

Table 2
Parameter Estimates and Variance Components of Null Models for State Hostility, Job Satisfaction, and Workplace Deviance

Dependent variable	Intercept (γ_{00})	Within-individual variance (ρ^2)	Between-individual variance (τ_{00})	% variability within-individual
State hostility	1.241**	0.183	0.099**	64.9
Job satisfaction	3.639**	0.268	0.545**	33.0
Workplace deviance	1.311**	0.060	0.053**	53.1

Note. γ_{00} = pooled intercept representing the average level of dependent variable across individuals; ρ^2 = within-individual variance in the dependent variable; τ_{00} = between-individual variance in the dependent variable. Percentage of variability within-individual was computed as $\rho^2/(\rho^2 + \tau_{00})$.
** $p < .01$.

was not significantly related to deviance, failing to support Hypothesis 6a. However, it should be noted that the zero-order correlation between interpersonal justice and workplace deviance was negative and significant (see Table 1), a result that we revisit in the *Mediating effects* section. In contrast to the Level 1 results for interpersonal justice, state hostility was positively related to workplace deviance, which supports Hypothesis 5a. Finally, the bottom portion of Table 5 shows that, at Level 1, job satisfaction was negatively related to workplace deviance, which supports Hypothesis 4. It is important to note that because the predictors were individual-mean centered, these results are solely within-individual and therefore not confounded by traits or other individual differences.

Cross-level moderating effects. One benefit of HLM is that one can test cross-level moderating effects. Cross-level moderation is indicated when a Level 2 variable significantly predicts the slope of a given Level 1 relation, thus moderating across levels. For the current study, we were interested in determining whether trait hostility (a Level 2 variable assessed independently by significant others) moderated the within-individual relation between interpersonal justice and state hostility. To determine this, we added trait hostility as a predictor of the Level 1 regression of state hostility on interpersonal justice. The bottom portion of Table 3 presents the

Table 3
Hierarchical Linear Modeling Results Predicting State Hostility

Variable	\hat{B}_u	SE	t	\hat{B}_s
Level 1				
Intercept ($\hat{\beta}_0$)	1.24	0.04	29.47***	
Interpersonal justice ($\hat{\beta}_1$)	-0.17	0.05	-3.61***	-.15
Level 2				
Trait hostility ($\hat{\gamma}_{11}$)	-0.16	0.06	-2.53***	-.12
R ²	.07			

Note. All predictor scores were centered at the individuals' means to eliminate between-individual variance. Trait hostility was measured with significant other ratings. \hat{B}_u = unstandardized coefficient. \hat{B}_s = standardized coefficient. $\hat{\beta}$ = Level 1 regression coefficients (within-individual estimates). $\hat{\gamma}$ = Level 2 regression coefficients (between-individual estimates). R² = variance explained by $\hat{\beta}_1$ and $\hat{\gamma}_{11}$ (the proportions were computed as the proportional reduction in the Level 1 variance component of state hostility scores; see Hofmann, Griffin, & Gavin, 2000).

^a df = 63. ^b df = 62.
** $p < .01$.

effect of trait hostility on the Level 1 relation between interpersonal justice and state hostility. The negative value of the coefficient ($\hat{\gamma}_{11} = -.16, p < .01$), as well as inspection of the interaction graphically (see Figure 2), shows that the nature of the interaction was as hypothesized. That is, individuals high on trait hostility were more sensitive to justice violations in that the interpersonal justice–state hostility relation was stronger for individuals high on trait hostility than for those low on the trait, supporting Hypothesis 7.

Mediating effects. To test the mediation hypotheses (Hypotheses 3b, 5b, and 6b), we conducted Level 1 regressions controlling for the mediator and then compared the results with regressions without the mediator included. Hypothesis 3b predicted that state hostility would partially mediate the relation between interpersonal justice and job satisfaction on a within-individuals basis. In a regression predicting within-individual variation in job satisfaction with only interpersonal justice, the unstandardized (\hat{B}_u) and standardized (\hat{B}_s) coefficients were $\hat{B}_u = 0.23$ and $\hat{B}_s = .17$, respectively. However, after we controlled for state hostility (see Table 4), the unstandardized and standardized coefficients decreased ($\hat{B}_u = 0.14$ and $\hat{B}_s = .09$). Furthermore, to ascertain whether the mediated effect was statistically significant, we conducted the Sobel (1982) test, which revealed that the indirect effect of interpersonal justice on job satisfaction (through state hostility) was indeed significant ($p < .01$). The comparison of the standardized

Table 4
Hierarchical Linear Modeling Results Predicting Job Satisfaction

Variable	\hat{B}_u	SE	t(63)	\hat{B}_s
Intercept ($\hat{\beta}_0$)	3.63	0.09	38.58**	
Interpersonal justice ($\hat{\beta}_1$)	0.14	0.03	4.02**	.09
State hostility ($\hat{\beta}_2$)	-0.68	0.06	-10.45**	-.56
R ²	.30			

Note. All predictor scores were centered at the individuals' means to eliminate between-individual variance. \hat{B}_u = unstandardized coefficient. \hat{B}_s = standardized coefficient. $\hat{\beta}$ = Level 1 regression coefficients (within-individual estimates). R² = variance explained by $\hat{\beta}_1$ and $\hat{\beta}_2$ (the proportions were computed as the proportional reduction in the Level 1 variance component of job satisfaction scores; see Hofmann, Griffin, & Gavin, 2000).

** $p < .01$.

Table 5
Hierarchical Linear Modeling Results Predicting Workplace Deviance

Variable	\hat{B}_u	SE	t(63)	\hat{B}_s
Without job satisfaction				
Intercept ($\hat{\beta}_0$)	1.31	0.03	43.66**	
Interpersonal justice ($\hat{\beta}_1$)	-0.02	0.03	-0.75	-.09
State hostility ($\hat{\beta}_2$)	0.14	0.03	4.29**	.32
R ²	.12			
With job satisfaction				
Intercept ($\hat{\beta}_0$)	1.31	0.03	43.65**	
Interpersonal justice ($\hat{\beta}_1$)	0.00	0.03	0.15	.00
State hostility ($\hat{\beta}_2$)	0.07	0.03	2.12**	.19
Job satisfaction ($\hat{\beta}_3$)	-0.09	0.03	-3.44**	-.17
R ²	.20			

Note. All predictor scores were centered at the individuals' means to eliminate between-individual variance. \hat{B}_u = unstandardized coefficient. \hat{B}_s = standardized coefficient. $\hat{\beta}$ = Level 1 regression coefficients (within-individual estimates). R² = variance explained by predictors. ** p < .01.

total effect ($\hat{B}_s = .17$) with the direct effect ($\hat{B}_s = .09$) suggests that nearly half (47%) of the within-individual effect of interpersonal justice on job satisfaction was mediated through state hostility, which provides support for Hypothesis 3b.

Hypothesis 5b predicted that job satisfaction would partially mediate the relation between state hostility and workplace deviance, and Hypothesis 6b predicted that job satisfaction would partially mediate the relation between interpersonal justice and workplace deviance. Results of the HLM Level 1 regressions predicting workplace deviance are provided in Table 5. The top portion of Table 5 reveals that when we simultaneously entered interpersonal justice and state hostility in the regression predicting deviance (considered without job satisfaction), interpersonal justice was not significantly related to workplace deviance ($\hat{B}_s = -.09$), whereas state hostility predicted within-individual variation in deviance significantly ($p < .01$) and relatively strongly ($\hat{B}_s = .32$). As shown in the bottom portion of Table 5, when we added job satisfaction as a predictor of workplace deviance, interpersonal justice remained nonsignificant, and state hostility remained significant ($p < .01$), though weaker in magnitude ($\hat{B}_s = .19$). The Sobel (1982) test for mediation revealed that the state hostility–job satisfaction–workplace deviance link was highly significant ($p < .01$), whereas the interpersonal justice–job satisfaction–workplace deviance mediated effect was significant at $p < .05$. However, because the direct interpersonal justice–workplace deviance effect was weak and not statistically significant, suggesting that there was no effect that could be mediated, we interpret the results as only suggestive of mediation through job satisfaction. Thus, Hypothesis 5b was supported, but results failed to solidly support

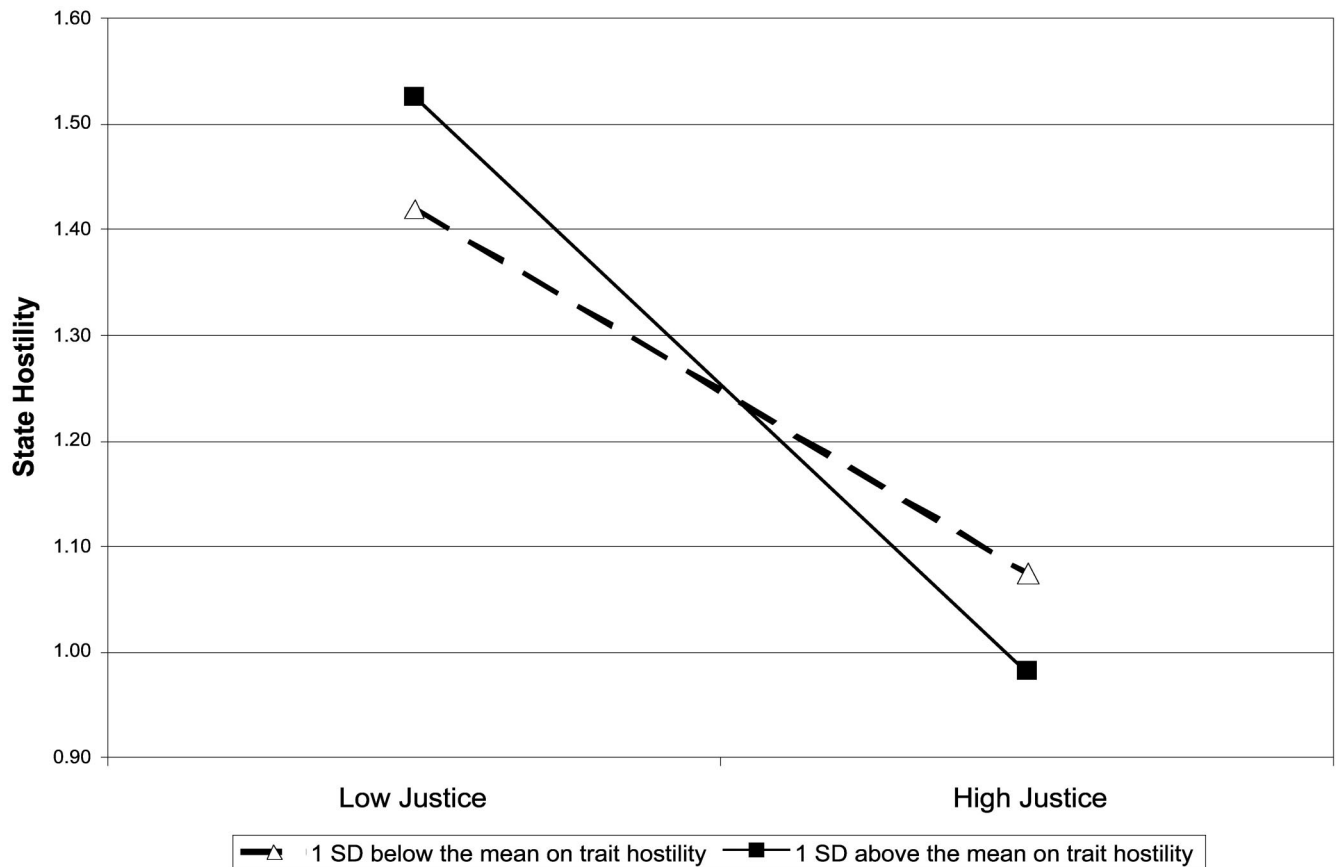


Figure 2. Interaction between interpersonal justice and trait hostility in predicting state hostility.

Hypothesis 6b. Worth noting is the significant zero-order correlation between interpersonal justice and workplace deviance, which suggests that the effect of interpersonal justice on deviance was entirely mediated through state hostility and job satisfaction. In other words, there was a positive association between interpersonal justice and workplace deviance that disappeared once state hostility and job satisfaction were controlled (which suggests mediation).

A summary of the results is provided in Figure 3.

Additional Analyses

Analysis of gender differences. Given that the sample was gender skewed (72% female), we investigated whether gender affected the relations in our model by (a) determining whether gender significantly predicted the intercepts of the Level 1 relations, (b) determining whether gender acted as a cross-level moderator of the Level 1 relations, and (c) determining whether gender was significantly related to our Level 2 variables. To examine the first issue, we estimated models for each Level 1 variable with gender (a Level 2 variable) as the only predictor. This analysis revealed that gender did not significantly predict the average level of any Level 1 variable. Second, we entered gender as a cross-level moderator for each Level 1 relation tested in the model. The results of this analysis revealed that gender did not moderate any of the hypothesized Level 1 relations. Finally, we correlated gender with each Level 2 variable and found no significant relations. Thus, we can be confident that results do not differ according to gender.

Potential confound of negative affect and positive affect with state hostility. As Weiss and Cropanzano (1996) noted, both moods and discrete emotions are ways of conceptualizing and measuring affect. Because in this study we focus on a specific emotion (hostility), one might wonder how the situation might change if we studied a broader mood dimension, such as negative affect or positive affect. Indeed, a recurrent issue in the literature on mood and emotions is whether specific emotions (e.g., joy, hostility) are superior to a dimensional structure of affect (Diener, 1999). If specific emotions do not contribute to prediction beyond

the general dimension, then their relative usefulness is called into question.

To address this issue, we first reestimated the hypothesized model, including state negative affect (measured via Watson & Clark's, 1994, Negative Affect scale from the PANAS-X; $\bar{\alpha} = .79$) as a Level 1 predictor. Negative affect was not a significant predictor of job satisfaction ($\hat{\beta}_u = -0.09, p = .56$) or workplace deviance ($\hat{\beta}_u = 0.09, p = .13$). Moreover, controlling for negative affect did not change the significance of the coefficients on state hostility. Next, we reestimated the hypothesized model with state positive affect (measured via Watson & Clark's, 1994, Positive Affect scale from the PANAS-X; $\bar{\alpha} = .93$) as a Level 1 predictor. Although positive affect was not a significant predictor of workplace deviance ($\hat{\beta}_u = -0.02, p = .41$), it was a significant predictor of job satisfaction ($\hat{\beta}_u = 0.39, p < .05$). However, controlling for positive affect did not change the significance of the coefficients on state hostility. Thus, it does not appear that the exclusion of negative or positive affect is a problem in these results.

Potential confound of individual differences and time with justice perceptions. Given that we measured perceptions of interpersonal justice rather than actual unjust events, one may question whether individuals' perceptions of injustice were merely a result of some bias due to stable individual differences. With regard to the current study, individuals high in trait hostility or negative affect might have reported higher injustice not because they actually experienced more unfair treatment but rather because they tended to view events in a negative light (see LeBlanc & Barling, 2004; Smith, Sanders, & Alexander, 1990). To address this issue, we examined whether interpersonal justice was significantly related to measures of trait hostility, negative affect, and positive affect. As shown in Table 1, interpersonal justice was not significantly related to trait hostility (for significant other-rated trait hostility, $\hat{r} = -.24$; for self-rated trait hostility, $\hat{r} = -.16$) or negative affect ($\hat{r} = -.22$). Although interpersonal justice was positively correlated with positive affect ($\hat{r} = .40, p < .05$), controlling for positive affect did not change the significance of

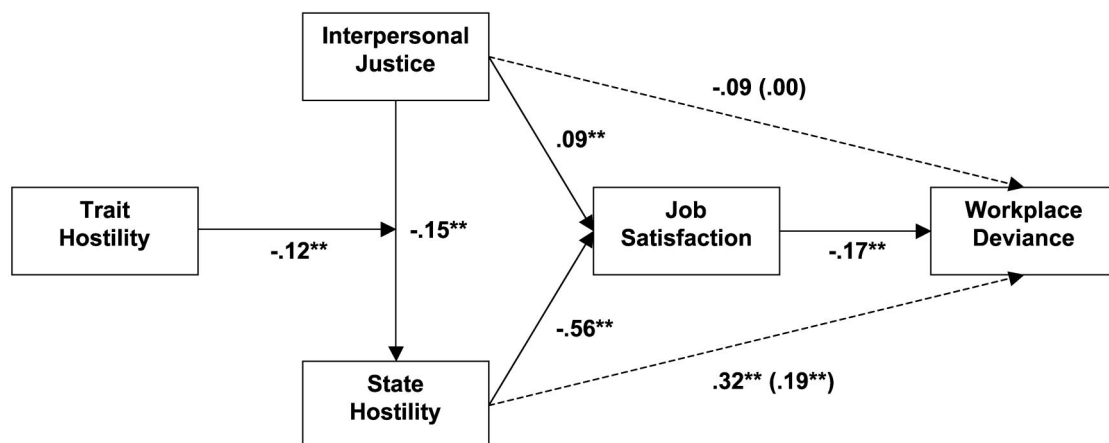


Figure 3. Summary of results. Results are standardized, obtained from separate regressions predicting state hostility, job satisfaction, and deviance. For state hostility and interpersonal justice, values in parentheses reflect total effects before job satisfaction was controlled. $** p < .01$.

the relation of interpersonal justice and job satisfaction or interpersonal justice and workplace deviance. Taken together, these results provide some evidence that reports of injustice were not confounded with the individual differences measured in this study.

Another potential concern with ratings of interpersonal justice is that by completing daily measures over a 2-week period, individuals could have been cued to notice justice more. As a result, ratings of interpersonal justice might have increased artificially over time. To address this concern, we regressed ratings of interpersonal justice on time, within-individuals. Time was not a significant predictor of interpersonal justice ($\beta_u = 0.00$). This result suggests that, within-individuals, ratings of interpersonal justice were not influenced by time.

Discussion

Though the literature on workplace deviance is still in a nascent state, research on the topic has accumulated rapidly and is currently proceeding at a "hectic pace" (Robinson & Greenberg, 1998, p. 24). However, considerable room for development remains; one area for further development is to study the dynamic nature of deviant behavior (Bennett & Robinson, 2003, p. 269). As Robinson and Greenberg (1998) noted, current conceptualizations of workplace deviance "fail to recognize how deviant behavior may shift in form and evolve over time" (p. 22). Indeed, though researchers have long noted intraindividual variations in behavior (Mischel & Shoda, 1998), research and theory on workplace deviance have focused exclusively on predicting individual differences in behaviors. Bennett and Robinson (2003) noted, "To date, almost all the theoretical and empirical models of workplace deviance have taken a snapshot or state perspective on this set of behaviors" (p. 266).

Drawing from AET (Weiss & Cropanzano, 1996), we attempted to address this void in the literature by modeling both inter- and intraindividual variation in deviant behavior. Our results reveal that, in fact, a substantial portion of the total variation in deviant behavior was intraindividual. That roughly half (53%) of the overall variation in deviant behavior was within-individual is noteworthy for several reasons. First, this is variation that has not been explainable in past research because researchers have not separated the dynamic and static portions of deviance. Given the results of this study, it appears that we can explain more of the variation in deviant behavior than has been implicitly assumed. For example, Iverson and Deery (2001) found that a comprehensive set of variables (demographic, job related, environmental, and dispositional) explained roughly 14% of the variability in counterproductive (tardiness, early departure, absenteeism) behaviors. Similarly, Lee and Allen (2002) found that, cumulatively, affect, job cognitions, and demographics explained 10% of the between-individual variability in workplace deviance. Though these studies were not designed to model within-individual variability in behavior, it is likely that these and other research studies would explain more variability in deviant behavior if researchers examined both within- and between-individuals variability in behavior.

Documenting intraindividual variation is one thing; explaining it is another. Indeed, beyond showing the dynamic nature of workplace deviance, we were able to explain the intraindividual variation in the behavior with other statelike variables—state hostility and job satisfaction. Hostility has been studied extensively in

psychology, most intensively in health psychology and neuropsychology. In these literatures and in the psychological literature more generally, very little research has used state hostility measures. Similarly, with a few exceptions (Lee & Allen, 2002), there has been a paucity of research on hostility in organizational behavior, and we are aware of no organizational behavior research that has focused on state hostility. Given the importance of state hostility to workplace deviance, further study of state hostility and its implications for other dynamic processes is warranted.

As for job satisfaction, these results add to a growing literature on intraindividual variation in job satisfaction (see Hulin & Judge, 2003, for a review). These earlier efforts have focused on predicting within-individual variation in job satisfaction. The present study reveals that within-individual variation in job satisfaction can be predicted by other state variables (state hostility, interpersonal justice) and that job satisfaction is an important predictor of within-individual variation in workplace deviance. Thus, not only are individual differences in job satisfaction related to workplace deviance (Robinson & Greenberg, 1998), within-individual variation in job satisfaction also predicts workplace deviance.

Another important set of findings pertains to interindividual differences in the patterns of employees' emotional responses to injustice across time. Our strategy for examining the intraindividual relation between justice and state hostility across time and investigating interindividual differences in the magnitude of the intraindividual relation in an integrated research framework allowed us to uncover a much richer picture of how employees react to injustice, compared with traditional studies of individual differences in behavior. We found that individuals' personality influenced not only their average hostility but also the magnitude of their discrete hostile reactions to injustice at work. Although the practical constraints of an ESM design limited us to the examination of interpersonal justice, as stated previously, it is likely that interactional forms of justice exhibit greater variability on a daily basis than distributive or procedural forms of justice. Future research that examines whether there is sufficient day-to-day variation in the fairness of outcomes and procedures not only may address the issue of variability but also may uncover differential effects compared with those found in the current investigation. Indeed, if distributive and procedural forms of justice fail to exhibit substantial day-to-day variability, then effects typically found at the between-individual level may not generalize to the within-individual level. Future research that can address these issues is needed to increase our understanding of justice effects at different levels of analysis.

At the broadest level, because the link between injustice and state hostility largely reflects a situational influence, by examining the effects of trait hostility, injustice, and their interaction on state hostility we have, in fact, modeled person and situation effects in an integrated multilevel framework. In this respect, our findings show that modeling within-individual relations can indeed move personality theory beyond the person-situation debate (see Fleenor, 2004). Future research should capitalize on the opportunities for integrating theory on personality traits with situational explanations for intraindividual variability in affect, attitudes, and behavior at work; as illustrated by the results presented here, such studies have the potential to enrich our understanding of employees' experiences and behavior.

Implications

Practically, the substantial within-individual component to deviant behavior suggests limits on the degree to which one can control workplace deviance by simply selecting out applicants predisposed to deviance or terminating employees on the basis of acts of deviance. Even if an organization were able to eliminate the most deviance-prone individuals, given that much of workplace deviance lies within-individuals, deviant behavior would still occur. This leads to the question of how within-individual variation in workplace deviance might be influenced. One means of reducing workplace deviance suggested by the results is via interpersonal justice. Though the effect appeared to work entirely through state hostility and job satisfaction, employees in this study did appear to respond to perceived interpersonal injustices by engaging in deviant behavior. Thus, one means of containing workplace deviance is to ensure that supervision is fair, respectful, and interpersonally sensitive. Judging from the study results, the other mechanisms by which within-individual deviant behavior can be contained operate through state hostility and job satisfaction.

As for state hostility, the results suggest that organizations that care about reducing daily manifestations of deviant behavior would benefit from reducing employee hostility. Beyond reducing hostility by lessening interpersonal injustice, the question is how corporations can best accomplish this. AET (Weiss & Cropanzano, 1996) provides one suggestion. If one considers our results from the vantage point of AET, one practical implication is that organizations should attend to the specific events at work that engender hostility on the part of employees. Some examples are reducing personal conflict, alleviating stressful working conditions, and considering the potential costs (in terms of hostility) generated by punishments and sanctions.

Limitations

We need to note several potential limitations of the study. A possible concern with the results is that they are inflated by common source variance. In particular, because most of the core variables were necessarily self-reported, one may wonder whether the relations are inflated. This concern is particularly acute in the case of workplace deviance, because many of the items are sensitive in nature (i.e., involve behavior that is, e.g., illegal and/or against many companies' policies). Moreover, it is possible that our measurement approach caused a form of self-generated validity (Feldman & Lynch, 1988), in which responses to one part of a survey are reactive to another. That is, it is possible that participants' responses to questions at the beginning of the daily survey might have influenced their responses to questions later in the survey. Two aspects of the analysis and data are on point here. First, we centered the within-individual variables relative to individuals' mean scores, which means that the relations were net of any between-individual differences, such as personality and stable mood differences. Thus, many of the common method/source explanations—such as general response biases or affectivity—are eliminated in this design. Of course, intraindividual biases may exist, but, presumably, the main source of intraindividual bias—short-term affect—is precisely what we are studying. For those who study generalized constructs in nomothetic designs, this may indeed be a bias (Schmidt, Le, & Ilies, 2003). However, in this

study, it is a valid source of variability that is explained by and explains other constructs. Second, following the methodological convergence suggested by Robinson and Greenberg (1998), we collected supervisor ratings of deviance to validate the self-reports, and we collected self-ratings of trait hostility to validate the significant other reports. As stated previously, the self- and other ratings of both workplace deviance and trait hostility were strongly correlated (see Table 1), which suggests that the supervisor and significant other ratings exhibited convergent validity with the self-reports. Thus, although we attempted to eliminate several common method/same source explanations, researchers should estimate the impact of such measurement effects on within-individual relations as well as counterbalance daily measures when feasible.

A second and related limitation is that ESM designs, although they have many advantages, do not provide the degree of control present in experimental studies. Like all such studies, it is possible the inferences made were biased by the omission of unmeasured variables, alternative associations among the variables, and other causal limitations. Although the proposed model is one possible representation of the data, other, alternative representations are possible. We did not test these alternative models in this study. Accordingly, the reader should exercise caution in interpreting the associations as causal effects. Future researchers should test alternative models and also use experimental methods that permit a more internally valid test of the associations embedded in the model.

Third, with respect to our labeling interpersonal justice as an event, strictly speaking, we did not measure events as defined by AET (Weiss & Cropanzano, 1996). Although one could construe instances of fair or unfair treatment as events, we measured individuals' perceptions of interpersonal justice. Indeed, one might wonder whether the measure simply reflects the quality of the relationship one has with one's supervisor. Although the two concepts are certainly related, research has distinguished interactional justice from the quality of leader-member exchange (Masterson, Lewis, Goldman, & Taylor, 2000). Nevertheless, future research testing AET would benefit from testing supervisor-related events, beyond the more general perceptions included in this study.

Fourth, our sample was predominately (72%) female, which limits generalizability of our findings to men. Although we did show that, in our sample, gender did not affect the relations of interest, because of the relatively small number of men in the sample, these tests might not have had sufficient power. Accordingly, future researchers should investigate gender differences more thoroughly.

Finally, our momentary measure of affect did not immediately follow the experience of justice events. Thus, the two measures lack correspondence. Conversely, our choice to measure momentary affect is in keeping with mood research, which cautions against the use of retrospective reports in assessments of state mood. The process of forming retrospective judgments of prior emotions is a complex one, subject to many biases (Fredrickson & Kahneman, 1993). Watson (2000) termed the reliance on retrospective reports of mood as a "serious problem" (p. 138) in interpreting patterned cyclicity of moods and emotions. Lucas and Fujita (2000) noted that momentary reports of emotions "are not subject to the biases involved in making global reports of emotions

(and, hence, are more valid)” (pp. 1051–1052). Thus, though we do acknowledge that in some ways it would have been beneficial to have the report of affect correspond to the report of interpersonal justice, we think there were good reasons to measure affect as we did.

Conclusion

The present study suggests that researchers can fruitfully study employee deviance as both an intra- and an interindividual phenomenon and that transient states in the form of state hostility, interpersonal justice, and job satisfaction are related to daily deviant behavior at the intraindividual level. Moreover, the results suggest that a between-individuals variable—trait hostility—affects individuals’ sensitivity to perceived interpersonal justice violations. Future research could build on these results and AET, through the formulation and testing of rich intraindividual models linking events, affect, and attitudes to a range of behavioral outcomes important for organizational success, such as citizenship behavior, attendance, and creativity.

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