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Exploring Relationships Among Anger, Perceived Organizational Support, and Workplace Outcomes

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The present study examines anger within a perceived organizational support (POS) theory framework. Using structural equation modeling, the authors explored relationships among POS, anger, and workplace outcomes in a sample of 1,136 employees in 21 stores of a U.S. retail organization. At both individual and store levels, low POS was directly associated with greater anger. At the individual level, anger partially mediated relationships among low POS and turnover intentions, absences, and accidents on the job. Anger had direct and indirect effects on alcohol consumption and health-related risk taking. At the store level, anger had direct negative effects on inventory loss and turnover. The authors interpret these findings in light of social exchange theory and emotion regulation theory.

Keywords: anger, perceived organizational support, turnover, health, multilevel models

Anger is a strong emotion of displeasure or antagonism, stimulated by injury or insult to one's self or others, or by the perceived intent to do such harm (Ilfeld, 1978). According to one study, people report feeling angry anywhere from a few times a day to a few times a week (Averill, 1983). Both scholars and managers have an interest in anger because it appears to be a direct antecedent to workplace aggression (Glomb & Liao, 2003; Hershcovis et al., 2007). Although eliminating workplace violence remains an important goal for many organizations, Averill (1983) estimates that only 10% of incidents involving anger result in aggressive or violent outcomes. Indeed, the most frequent responses to feelings of anger are nonaggressive in nature, but may be detrimental to the individual and organization in other ways.

From an empirical perspective, there is considerable ambiguity concerning the role of anger in the workplace. One area of ambiguity is whether anger is an antecedent or a consequence of employees' perceptions of conditions or events in the workplace. At issue is whether employees' negative perceptions of the organization elicit feelings of anger, or whether anger filters employees' perceptions. Although the most commonly held belief is the former (i.e., employees' perceptions cause anger), there are equally sound conceptual reasons to believe the reverse may be true as well (e.g., Barsky & Kaplan, 2007). Another area of ambiguity concerns the consequences of anger for employees and the organization. Although the consequences of anger have been widely investigated in other research domains (e.g., Berkowitz, 1993; Booth-Kewley & Friedman, 1987; Maiuro, Cahn, & Vitaliano, 1988; Orth & Wieland, 2006), research on anger in the workplace has been primarily limited to incidence of retaliation in response to workplace equity violations (e.g., Barclay, Skarlicki, & Pugh, 2005; Weiss, Suckow, & Cropanzano, 1999; cf. Geddes & Callister, 2007). Clinical psychology research shows, however, that not only can reactions to anger be directed outward toward the source of the anger, they can also be directed inward in ways that are destructive to oneself (e.g., Deffenbacher, Oetting, Lynch, & Morris, 1996).

To examine the relationship between anger and employees' perceptions of workplace conditions, as well as to explore a broader range of workplace outcomes affected by anger, we adopt an organizational support theory framework (i.e., Eisenberger, Huntington, Hutchison, & Sowa, 1986). Our goal is to contribute to an understanding of anger within the framework of perceived organizational support (POS) theory in at least three ways. First, although

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there is extensive evidence that POS influences workplace outcomes directly, many studies conceptualize POS only as a buffer variable. To address this gap, we examine both direct and indirect relationships among POS, anger, and several workplace outcomes of practical and theoretical importance. Second, although some research has begun to examine the role of emotions in explaining the relationship between negative workplace conditions and employee behavior (Barclay et al., 2005; Weiss et al., 1999), little empirical research has examined the mediating role of emotions in the relationship between low POS and workplace outcomes. In fact, there has been a dearth of research examining the impact of POS on discrete emotions, such as contentment and anger. This lack of attention to specific emotions is surprising given the explosion of interest in organizational emotions (Barsade, Brief, & Spataro, 2003) and the well-established association between POS and generalized positive and negative affect (Rhoades & Eisenberger, 2002). A third way in which we contribute to the literature is by testing a multilevel model in which both individual-level and unit-level POS and anger influence individual- and store-level outcomes. In so doing, our aim is to expand the POS and anger literature, which has almost exclusively concentrated on antecedents and consequences of these constructs at the individual level of analysis.

Anger as an Antecedent and as a Consequence

A commonly held belief is that negative perceptions of workplace conditions cause feelings of anger (Judge, Scott, & Ilies, 2006; Kiefer, 2005; Rupp & Spencer, 2006; Stecher & Rosse, 2005; Weiss et al., 1999). Although there are sound conceptual reasons underlying that belief, there are equally sound reasons, though less widely known or accepted, to explain why the opposite causal pathway may exist as well; that is, anger may filter employees' perceptions and reactions to organizational events (e.g., Barsky & Kaplan, 2007). To address this ambiguity, we examine the relationship between anger and POS.

POS refers to employees' basic, global beliefs concerning the extent to which their organization values their contributions and cares about their well-being (Eisenberger et al., 1986). Historically, POS has been conceptualized as a relatively broad construct and, as such, is typically examined in relation to similarly broad constructs, such as favorable job conditions. However, the consequences of low POS for *employee affect*, a general term that includes constructs such as trait affect, generalized moods, and discrete emotions, are well established in the empirical literature. Meta-analytic results reveal that POS is positively associated with positive mood (Rhoades & Eisenberger, 2002). POS has also been shown to be associated with discrete emotions such as depression (Bryne, Kacmar, Stoner, & Hochwater, 2005). Taken together, these findings suggest a range of affective responses that may be influenced by differing levels of POS. However, we would not expect all emotions to be causally related to POS. According to appraisal theories of emotions (e.g., Smith & Ellsworth, 1985), discrete emotions are associated with fundamentally different cognitive attributions. For example, sadness is a relatively low intensity negative emotion that is associated with impersonal circumstances for which "nothing can be done to set it right" (Smith & Ellsworth, 1985, p. 834). In contrast, anger is a more intense negative emotion caused by another person or entity and associated with a strong desire to clarify or resolve the situation (Averill, 1983; Smith & Ellsworth, 1985; Smith & Kirby, 2004). Another way to conceptualize this difference is the distinction between "outward-focused" and "inward-focused" emotions (Barclay et al., 2005). Previous research has found that outward-focused emotions such as anger are a direct consequence of the perception that one has been treated unfairly by someone, else whereas inward-focused emotions such as sadness involve blame directed at oneself (Tiedens, 2001). Thus, although POS is likely to be associated with a range of negative emotions, anger is more likely to be a direct consequence of low POS because anger involves blaming another entity for conditions that, as we will argue below, can be redressed by employees.

In terms of the theoretical rationale underlying the relationship of POS and negative affect, social exchange theory (i.e., Blau, 1964; Emerson, 1976) is typically invoked to explain the association, and also points to anger as the most relevant emotion to examine in conjunction with low POS. According to social exchange theory, the relationship between employees and employers involves a series of interactions that generate obligations (Cropanzano & Mitchell, 2005). Employees' actions are contingent upon the organization fulfilling its obligations to employees (Gouldner, 1960), also known as the psychological contract (Rousseau, 1995). Employees perform at high levels and remain committed to the organization and its goals to the extent that the organization

cares for its employees. On the other side, employees experience negative affect when they perceive that the organization is depriving them of something to which they feel entitled. In the case of low POS, employees perceive a lack of concern for their own well-being. Because employees feel entitled to receive support from the organization, they would naturally blame the organization for its lack of support. Following this logic, the social exchange perspective would logically result in conceptualizing low POS as a cause of anger.

While the majority of empirical research implicitly assumes that low POS precedes anger, a competing viewpoint is that anger actually drives perceptions of low organizational support. Support for this notion comes from affect-as-information theory (Schwarz & Clore, 1983) and mood-congruency theory (Bower, 1981). According to affect-as-information theory, emotions serve as a signal regarding the positivity or negativity of the environment, which subsequently influences perceptions of it. Congruency of affect and perceptions occurs by means of an inferential association between an elicited emotion and an object requiring judgment or evaluation. Mood congruency refers to the tendency to recall information in a way that is consistent with mood. Positively valenced material is more accessible when individuals are in a positive mood, whereas negatively valenced material is more accessible when individuals are in a negative mood. Both explanations assume that people do not have access to the real reasons for their attitudes or judgments and instead infer judgments based on salient but irrelevant cues. Applied to the present study, these theories would posit that when angry employees are asked to evaluate the level of organizational support, anger negatively skews their perceptions, even when it is caused by something unrelated to the organization (i.e., an angry disposition, health problems, personal problems at home).

There is support for this argument in the empirical literature. Recent meta-analytic evidence indicates that both trait and state affect can filter perceptions of the social environment (Barsky & Kaplan, 2007). Experimental studies highlight the distinct consequences of anger for perceptions of the environment. For example, Dunn and Schweitzer (2005) found that participants induced to feel anger were less likely to trust others than happy participants. Feeling angry also influences information processing and causal judgments; in comparison to sad and neutral subjects, angry subjects were more likely to use heuristic rather than systematic information processing (Bodenhausen, Sheppard, & Kramer, 1994), to base their judgments on superficial cues in the environment (Tiedens & Linton, 2001), and to perceive negative events as caused by other people (Keltner, Ellsworth, & Edwards, 1993). Taken together, this empirical evidence provides support for the argument that anger may actually be an antecedent to low POS.

In our view, the two viewpoints outlined above are not competing perspectives. Indeed, we view them as complementary and propose that anger is both influenced by and influences perceptions of organizational events.

> *Hypothesis 1:* The relationship between POS and anger at the individual level is negative and reciprocal.

Individual-Level Consequences of Anger

The second question concerning the role of anger in the workplace is its consequences to the individual and the organization. As noted earlier, behavioral reactions to anger can be directed both outward toward the source of the anger, as well as inward toward oneself. In the clinical psychology literature, this distinction is sometimes conceptualized in terms of "anger-out" and "anger-in" (Deffenbacher et al., 1996). Once again, organizational support theory provides an illustrative starting point.

From meta-analytic results, we know that low POS is directly associated with a wide range of behaviors that could be characterized as anger-out behaviors. Symptoms of organizational withdrawal, such as turnover intentions and absenteeism, are commonly associated with low POS (Rhoades & Eisenberger, 2002). In addition, low POS has been shown to affect safety-related behavior and the safety climate of an organization (Haines, Merrheim, & Roy, 2001; Hofmann & Morgeson, 1999; Hofmann, Morgeson, & Gerras, 2003). Social exchange theory postulates that the associations between absence of POS and these outcomes are indicative of implicit reciprocity norms that exist between employees and the organization (Gouldner, 1960). Employees reciprocate POS by calibrating their effort to meet organizational goals (Eisenberger et al., 1986). On the other side, the perception that the organization does not care about its employees causes feelings of anger among employees, which subsequently leads to behaviors that undermine organizational effectiveness. Based on this logic, anger can be conceptualized as a proximal mechanism through which low POS leads to behaviors that reflect a lack of concern for the organization's

welfare and unwillingness to help the organization meet its objectives.

Although the social exchange motive is helpful in understanding the relationship of low POS to organizational withdrawal behaviors and accidents on the job, there is another equally plausible explanation for such behaviors. Emotion regulation theory (Grandey, 2000; Gross, 1998b) posits that individuals are motivated to avoid or eliminate the experience of negative emotions, particularly anger, because the emotion taxes or exceeds the physiological and psychological resources of the individual (Folkman & Lazarus, 1988; Gross, 1998a). Individuals attempt to attenuate or eliminate the experience of negative emotions by engaging in behaviors that allow them to distract themselves from their feelings or displace their emotions onto some other target. According to this perspective, intentions to quit, absenteeism, and accidents on the job can be viewed as emotion regulation strategies involving avoidance (Gross, 1998a). The first two outcomes are commonly used to measure organizational withdrawal (Rhoades & Eisenbergerer, 2002), while the third measure, accidents on the job, reflects employee neglect (Neal & Griffin, 2006) and disengagement (Harter, Schmidt, & Hayes, 2002) on the job.

Taken together, social exchange theory and emotion regulation theory both provide rationales for why the relationship of low POS and anger would result in anger out behaviors such as absences, turnover, and accidents on the job, all of which have been shown to be associated with low POS. To test the direct and indirect effects of POS and anger on these outcomes, we propose partial mediation hypotheses premised on the reciprocal relationship between POS and anger proposed in Hypothesis 1 (James, Mulaik, & Brett, 2006). The first partial mediation hypothesis, derived from a POS-to-anger link, connotes that part of the effect of POS on turnover intentions, absences, and accidents is direct, whereas a separate part passes through anger. The second partial mediation hypothesis, premised on an anger-to-POS link, implies that part of the effect of anger on turnover intentions, absences, and accidents is direct, whereas a separate part passes through POS.

> *Hypothesis 2a:* The relationship of POS to turnover intentions, absences, and accidents at the individual level is partially mediated by anger.

> *Hypothesis 2b:* The relationship of anger to turnover intentions, absences, and accidents at the individual level is partially mediated by POS.

In addition to challenging the assumption that social exchange is the primary motive underlying anger-induced employee withdrawal, emotion regulation theory contributes to our understanding of the consequences of anger in the workplace by extending the scope of behavioral outcomes that are potentially affected by anger. As noted earlier, clinical psychologists distinguish between anger-out forms of behavior directed outward toward the source of the anger, and anger-in forms of behavior directed inward toward oneself (Deffenbacher et al., 1986). Inward-directed behaviors highlight emotional regulation as an integral theoretical perspective. One example of an inward-directed behavior associated with being emotionally distraught is poor choices regarding health and well-being (Baumeister & Scher, 1988; Gross, 1998b). Tice, Bratlavsky, and Baumeister (2001), for example, found that the desire to escape emotional distress was directly associated with consumption of excessive amounts of alcohol. In addition, Leith and Baumeister (1996) found that angry individuals were more likely to prefer a high-risk, high-payoff lottery than a low-risk, low-payoff lottery than other individuals were. Finally, in a study of escalation of commitment, Wong, Yik, and Kwong (2006) found that individuals experiencing negative emotions committed additional resources to a failing course of action as a way of escaping the unpleasant experience associated with negative emotions.

By highlighting individuals' motivation to escape unpleasant emotional experiences, emotion regulation theory offers a compelling rationale for why angry employees would engage in anger-in behaviors such as excessive drinking and risky health practices, which do not serve an obvious social exchange function. Though organizational research involving these outcomes is far less extensive than on anger out outcomes, there is some evidence that POS may also have a direct relationship to these behaviors. A study of nurses found that low POS was associated with negative health outcomes (Bradley & Cartwright, 2002). In addition, Rhoades and Eisenberger (2002) found a main effect of low POS on such health strains as fatigue and headaches, which are related to alcohol consumption and high-risk health behaviors (Goetzel et al., 1998). Taken together, these studies suggest both direct and indirect effects of POS and anger on alcohol consumption and high-risk health behaviors. To test these relationships, we propose two partial mediation hypotheses. Once again, the hypotheses

are premised on reciprocal relationships between POS and anger.

> *Hypothesis 3a:* The relationship of POS on alcohol consumption and high-risk health behaviors at the individual level is partially mediated by anger.

> *Hypothesis 3b:* The relationship of anger on alcohol consumption and high-risk health behaviors at the individual level is partially mediated by POS.

Unit-Level POS and Unit-Level Anger

The current section addresses two research questions: (1) Is there evidence for unit-level differences in POS and anger? and (2) If so, could between-unit variability in POS and anger have implications for unit-level outcomes? With respect to the first question, there is strong support in the literature for conceptualizing POS and anger as aggregate constructs. Extensive empirical evidence affirms the existence of shared perceptions at the organizational level of analysis, also known as organizational climate (e.g., Scheider, Hanges, Smith, & Salvaggio, 2003; Schneider, White, & Paul, 1998; Zohar & Luria, 2004). Although units within a large corporation may share the same practices and policies, research suggests that individual units are basically autonomous and heavily influenced by the policies and procedures as dictated locally by store management (Schneider, 1987). As such, employees at one particular unit may operate in a very supportive environment whereas those at another may not be in such an environment. Because POS refers to the practices and policies of units as a whole, we would expect that individuals within the same unit would share perceptions (Schneider & Reichers, 1983).

It is also likely that there would be meaningful differences between units with respect to anger. Empirical evidence points to emotional convergence among individuals who interact frequently (Barsade, 2002; Bartel & Saveedra, 2001; George, 1990; Totterdell, Wall, Holman, Diamond, & Epitropaki, 2004). Moreover, research suggests that the enactment of anger, which has a universally understood corresponding facial expression (Ekman, 1972), activates visceral, subconscious processes of facial efference (Adelman & Zajonc, 1989) and emotional contagion (Hatfield, Cacioppo, & Rapson, 1994). Relative to other emotions such as guilt or sadness, anger may be particularly likely to spread to the unit level because expressions of anger involve more exaggerated behaviors (e.g., yelling, red face, clenched teeth; Barsade, 2002; Bartel & Saveedra, 2000).

In summary, we expect that both POS and anger will aggregate to the unit level. Extending the logic of social exchange theory (Blau, 1964; Emerson, 1976) as the basis for predicting a POS–anger link and the logic of affect-as-information theory (Schwarz & Clore, 1983) and mood-congruency theory (Bower, 1981) for predicting an anger-POS link, we also propose testing the hypothesis that there will be a negative and reciprocal relationship between POS and anger at the unit level of analysis. This hypothesis test is premised on the results of Hypothesis 1 at the individual level of analysis.

> *Hypothesis 4:* The relationship between POS and anger at the unit level is negative and reciprocal.

With respect to the second question pertaining to unit-level outcomes impacted by unit-level POS and anger, we expect negative associations among POS, anger, and two measures of unit-level performance, turnover, and inventory loss. With respect to unit-level POS, if individuals experience high turnover intention because of low POS, and some aspect of individual-level POS driven by a climate for POS, then there is greater likelihood that individuals in low POS climates will collectively act upon their intention to leave than those working in high POS climates. Similarly, although organizations cannot always detect the causes of inventory loss, a segment of it is because of employee negligence (Greenberg, 1988). Because employee negligence is linked to low POS (Rhoades & Eisenberger, 2002), one would expect greater inventory loss in units characterized by relatively low POS climates.

With respect to unit-level anger, we expect positive associations between anger and turnover and inventory loss. Again, it stands to reason that if some amount of individual variance in anger is attributable to climate, then one must consider the collective consequences of anger across all individuals who have shared perceptions of the organization (van Zomeran et al., 2004). As stated above, if angry individuals experience high turnover intentions, we would expect a greater likelihood of following through on that intention in units characterized by "angry" climates than in units sharing less anger. Similarly, we would expect greater collective negligence in units within an angry climate than in less angry units.

Consistent with the model being tested at the individual level of analysis, we propose testing two partial mediation hypotheses premised on the reciprocal relationship proposed in Hypothesis 4. Hypothesis 5a states that part of the effect of POS on unit-level turnover rates and unit-level inventory loss is direct, whereas a separate part passes through anger. Hypothesis 5b states that part of the effect of anger on unit-level turnover rates and unit-level inventory loss is direct, whereas a separate part passes through POS.

Hypothesis 5a: The relationship of unit-level POS and unit-level turnover rates and inventory loss is partially mediated by anger.

Hypothesis 5b: The relationship of unit-level anger to unit-level turnover rates and unit-level inventory loss is partially mediated by POS.

Method

Sample

Respondents were 1,136 employees from 21 stores of a national retail organization headquartered in the southeastern United States. There were a total of 4,274 employees across the 21 locations; 1,495 people (35%) completed the survey and, of those, 76% provided usable responses for purposes of this study. Unusable surveys were primarily those with nonrandom data missing. In summary, 27% of all employees in the 21 locations provided usable data. The average number of respondents per store was 71, with a range of 36 to 138.

Surveys were administered on two consecutive workdays at each store. Participation was encouraged but voluntary. As an incentive, employees were given time on the clock to participate as well as a quiet environment (a training room) in which to complete the survey. Employees were assured that their responses would be kept anonymous. Completed questionnaires were deposited by the respondent into locked storage boxes to reinforce the confidentiality of the information. Further, respondents observed the researchers leaving the premises with the locked boxes.

Within the sample, 21% had supervisory responsibilities, 70% were male, 57% had spouses or partners, 97% had a high school education or higher, and 78% were White. Among the non-White respondents, 2% was Asian, 7% were African American, 6% were Hispanic, and 1% were Native American. Individuals indicated their age by selecting the age range to which they belonged. In the current sample, the average age range was from 35 to 40 years old. Respondents worked an average of 40 hours per week, and all were full-time employees with benefits (i.e., not temporary employees or part-time employees).

Measures

Exogenous variables. The two primary exogenous variables, POS and anger, were operationalized using established scales. We used Eisenberger et al.'s (1986) nine-item short form measure to capture POS. Sample items include: "The organization is willing to extend itself to help me perform my job to the best of my ability," "The organization cares about my general satisfaction," and "The organization shows very little concern for me" (reverse-coded). The alpha reliability coefficient was .94.

We measured anger through Ilfeld's (1978) four-item clinical anger scale. Using ratings of 1 (never) to 4 (very often), individuals reported how often they did the following over the past month: "lose your temper," "feel easily annoyed or irritated," "feel critical of others," and "get angry over things that are not important." The alpha reliability coefficient was .88.

Individual-level endogenous variables. There were five endogenous variables at the individual level of analysis. Two of the endogenous variables measured employee withdrawal: turnover intention and absences. *Turnover intention* refers to individuals' own (subjective) probabilities that they would be permanently leaving the organization at some point in the near future (Mobley, 1982; Mowday, Porter, & Steers, 1982). In this vein, individuals in the current study responded to the following item: "What is the probability that you will leave this organization for another organization in the next 6 months?" The question was anchored with (1) 0–20%, (2) 21–40%, (3) 41–60%, (4) 61–80%, and (5) 81–100%. This item has been shown to successfully predict turnover in previous studies (e.g., Bentein, Vandenberg, Vandenberghe, & Stinglhamer, 2005). The mean was 2 (*SD* 1.34). *Absences* were measured by asking respondents to denote how many days they were absent in the last month when scheduled to work, not including scheduled days off. The scale for this measure ranged from 1 (no days missed when scheduled to work) to 5 (four or more days missed when scheduled to work). The *M* was 1.76 and the *SD* was 1.09.

The remaining three endogenous variables—alcohol consumption, high-risk health behaviors, and accidents on the job—were adapted from the U.S.

Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance Survey (CDC, 1999). The *alcohol consumption measure* provided an overall measure of total alcohol consumption during a 30-day period. It was the combination of responses to drinking frequency (number of days alcohol consumed per month) multiplied by quantity (number of drinks typically consumed on a day that alcoholic beverages were consumed). The *M* was 18 and the *SD* was 44.1. *High-risk health behaviors* was the sum of high-risk behaviors participants engaged in (e.g., tobacco product use, not having regular physical examinations) divided by the total number of high risk behaviors. There was a particular emphasis on detecting high blood pressure, high cholesterol, and diabetes. The scoring system accounted for the fact that females had more high-risk health categories than males. Thus, a score of 1 in both cases means that individuals checked off all of the categories and would be considered at very high risk. Lower scores mean fewer categories were checked off. The *M* was .29 and *SD* was .245.

Finally, *accidents* were represented by having respondents note how many accidents they were involved in on the job over the past 12 months ($M = 1.80$; $SD = .55$). Because accidents on the job were infrequent occurrences, this variable was measured by the organization yearly rather than monthly.

Store-level endogenous variables. We examined two measures of organizational performance: turnover and inventory loss. *Turnover* is the percentage of employee turnover for the first full financial quarter following data collection. Turnover records are maintained within each store, and no distinction is made by the organization between voluntary and involuntary turnover. Turnover, thus, is the percentage of employees lost relative to the total employees within the store in that quarter. *Inventory loss* is a financial measure of inventory lost within the 21 stores collected for the first full financial quarter after the survey was completed. It is a dollar-based index, summarizing the loss of inventory because of such factors as employee mishandling, damage, theft, disappearance, being sold at a loss, or being returned. Higher dollar values denote greater loss for a given store in a given quarter.

Control variables. Individual responses to the exogenous and endogenous variables were controlled for supervisory/managerial status, tenure, age, education, gender, and race in all analyses. *Supervisory/Managerial status* was coded as 0 (does not have supervisory/managerial responsibility) or 1 (does have supervisory/managerial responsibility). *Tenure* was responses to "how long have you worked for ORGANIZATION'S NAME," and operationalized using a 1 (less than 3 months) to 5 (more than 5 years) scale. *Age* was measured by selecting the appropriate 5-year interval in which the person's actual age was contained. *Education* was operationalized using a 1 (some high school) to 7 (postgraduate degree) scale. *Gender* was coded as 0 (female) and 1 (male). Finally, three dummy-coded *race* variables were included: White, Black, and Hispanic. These were coded as 1 or 0, and as such, those with all zeros fell into ethnic categories other than the three main ones.

We examined whether there were significant differences among the 21 stores on the exogenous and endogenous variables by using random coefficients modeling. Only POS, $\chi^2[20] = 74.62$, $p < .001$ and anger, $\chi^2[20] = 81.43$, $p < .001$ had significant between-store variation. We controlled for that variation in our individual-level analyses.

Instrumental variable. It was necessary to introduce an additional variable into the individual-level model for identification purposes. Specifically, one or more instruments or instrumental variables are required to statistically identify (i.e., provide unique solutions for) parameters in which a reciprocal relationship is to be estimated (Rigdon, 1995; see Vandenberg & Lance, 1992 for an application). An instrumental variable is one that: (1) has direct effect on only one of the two reciprocally related variables; and (2) is not caused by any of the endogenous variables.

For purposes of the current study, we selected organizational policies for involvement as an instrumental variable (Jamieson & O'Mara, 1991; Vandenberg, Richardson, & Easton, 1999). High involvement in the workplace is largely perceived by employees as signs of respect for the individual and his or her contributions (Richardson & Vandenberg, 2005); thus, we positioned it in the model as having a direct effect on POS, but not anger. All items began with "To what extent does your company or organization as a whole have specific policies and/or programs in place for," followed by 10 policies and practices for high involvement work practices (e.g., incorporating changes or innovations suggested by employees or employee groups; involve employees in major decisions that directly affect their work). The reliability of this scale was $\alpha = .93$. Scale responses ranged from 1 (none) to 5 (a great many). The mean was 3.3 and the *SD* was .87.

Results

The means, *SD*s and correlations among the variables are presented in Table 1. For most of the remaining analyses, we used the *Mplus* latent variables program (Muthén & Muthén, 2006). *Mplus* easily permits the control of systematic sources of between-unit variance in testing models where the primary focus is on individual differences. Further, following standard practices, we evaluated overall model fit first before drawing inferences about individual parameters. Based on recommendations from Lance and Vandenberg (2001), in addition to the chi-square goodness of fit test, overall model fit was evaluated through use of the following indices: (1) the comparative fit index (CFI: $>.90$), (2) the root mean square error of approximation (RMSEA: $<.08$), and (3) the standardized root mean square residuals (SRMSR: $<.10$). The values within the parentheses represent recommended minimum or maximum cut-off values for each index.

The analytical model is presented in Figure 1.[1] As seen in Figure 1, rather than use items as the manifest indicators of the latent variables, we used the scale mean. However, a confirmatory factor analysis (CFA) was conducted on the items belonging to our measure of high organizational involvement policies, POS, and anger before testing the model in Figure 1. Although the chi-square test was statistically significant, $\chi^2[249] = 1591.38$, $p < .0001$, the descriptive fit indices supported an optimal fit to the data (CFI = .92; RMSEA = .06; SRMSR = .04). Further, standardized factor loadings supported the restrictions of items to three latent variables: (1) for the POS items, .72 to .87; (2) for the high involvement items, .65 to .81; and (3) for the anger items, .77 to .79. Finally, the three factor theoretical model was compared to a single-factor model, and a two-factor model in which the items for high involvement and perceived organizational support were allowed to load together. These results are available upon request from the authors. In both cases, the models fit very poorly to the data, and were significantly worse in fit relative to the theoretical CFA model.

With respect to testing the model in Figure 1, the fit indices support a strong fit of the model to the data. Because it is extremely difficult to obtain statistically nonsignificant chi-square values (indicating optimal fit to the data) with large samples, it is standard practice to examine the chi-square in combination with the other fit indices (Lance & Vandenberg, 2001). In the current case, all of the descriptive fit indices supported a strong fit of the model to the data (CFI = .96; RMSEA = .06; SRMSR = .02). The chi-square was statistically significant, $\chi^2[15] = 71.30$, $p < .0001$. While the chi-square value was less than optimal, the other fit indices supported reasonable fit of the tested model to the data, and thus, we felt comfortable interpreting the parameter estimates underlying the paths in the model. Although not shown in Figure 1, the parameter estimates representing the paths from the control variables to the exogenous and endogenous variables are presented in Table 2.

There are two noteworthy aspects to the findings in Table 2. First, as a whole, the exogenous and endogenous variables were influenced by at least one of the control variables. Second, with the exception of the three ethnicity control variables, the remaining control variables influenced at least three out of the nine exogenous and endogenous variables.

Individual-Level Hypotheses Tests

Tests of the individual-level hypotheses are presented in Table 3. Before presenting these findings, it should be noted that the path from high involvement to POS was statistically significant ($\beta = .69$), accounting for a large proportion (48%) of the variance in the POS latent variable. With respect to the hypotheses, Hypothesis 1 proposed that the association between POS and anger would be negative and reciprocal. As seen in Table 3, this hypothesis was not supported. Only the path from POS to anger was statistically significant, accounting for 15% of the variance in the anger latent variable.

Hypotheses 2a and 2b were partial mediation hypotheses. James et al. (2006) reserve the term partial mediation for structural equation models in which an exogenous variable has both direct effects and indirect effects through its association

[1] Rectangles denote observed or manifest variables whereas ellipses represent latent variables. To account for measurement error, we fixed the path from the latent variable to the manifest variable to the square root of the measure's reliability, and the error term associated with the manifest variable to the value "1" minus the reliability times the measure's variance (Williams & Hazer, 1986). We followed this practice for no other reason than to simplify an already complex model. Not shown in Figure 1 are age, education, gender, and the three race control variables. The control variables were simultaneously included in the analysis of the primary hypotheses. They would each be represented by their own rectangles in Figure 1, and would have paths to the two exogenous and six endogenous variables.

Table 1
Means, SDs, and correlations

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Anger	1.80	.67	*.88*																	
2. POS	3.03	.90	−.26	*.94*																
3. High-risk behaviors	.30	.24	.10	−.01	—															
4. Accidents	1.80	.55	.16	−.11	.05	—														
5. Turnover intention	2.01	1.34	.18	−.39	−.01	.10	—													
6. Total alcohol	18.06	44.11	.16	−.02	.14	.06	.10	—												
7. Absence	1.76	1.09	.17	−.11	.06	.20	.12	.10	—											
8. Age	3.87	1.72	−.18	.03	.03	−.13	−.13	−.07	−.14	—										
9. Supervisor/managerial responsibility	.78	.44	−.08	.03	.04	−.03	.03	−.06	.05	.05	—									
10. Education	3.19	1.17	−.04	−.11	−.12	−.05	.08	−.04	−.07	.13	.05	—								
11. Tenure	3.48	1.24	.11	−.24	−.02	−.02	.04	.01	−.01	.25	−.30	−.01	—							
12. Gender	.692	.46	−.06	−.04	.10	.03	.09	.10	−.06	.03	−.06	.10	−.01	—						
13. White	.78	.41	.09	−.02	.04	−.01	−.04	.04	−.01	.08	−.01	.04	.05	.01	—					
14. Black	.08	.27	−.04	.01	−.01	.01	.01	−.04	−.02	−.06	−.02	−.01	−.05	−.04	−.58	—				
15. Hispanic	.06	.24	−.06	.01	−.05	.01	.01	−.02	.03	−.09	.05	−.01	−.03	.02	−.48	−.08	—			
16. Inventory loss	4,391,430	611,504	.48[a]	−.86[a]	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
17. Unit turnover	.30	.09	.52[a]	−.39[a]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.56	
18. High involvement	3.30	.87	−.21	.63	−.01	−.09	−.36	−.08	−.05	−.02	.01	−.12	−.30	−.07	−.09	.09	.02	—	—	.93

Note. Internal consistency values are in italics. Any correlation in Rows 1 through 15 (n = 1,136) with an absolute value of .05 or greater is statistically significant at $p < .05$. The correlations in Rows 16 through 18 (n = 21) are statistically significant at $p < .05$. POS = perceived organizational support.

[a] These correlations represent the relationships of the between-level index of anger and POS with the inventory loss and turnover variables. The other correlations in this column are between the pooled within-group index of anger and POS (individual level controlling for store-level variation) and the stated variables.

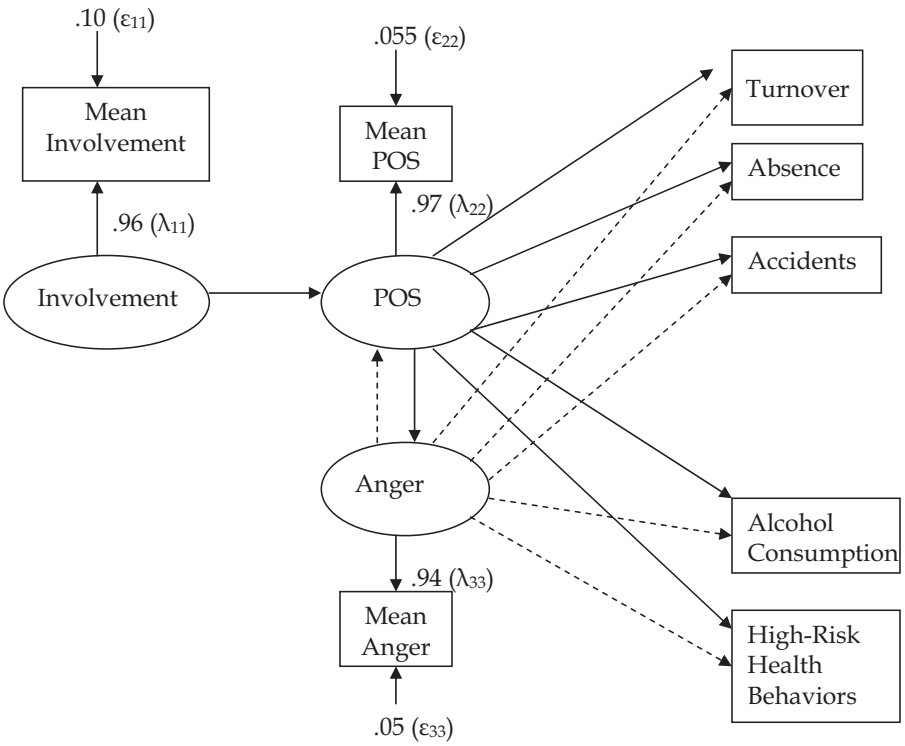


Figure 1. Analytical model. Note: Solid versus dashed arrows simply differentiate between effects because of POS (perceived organizational support) versus anger, respectively. The values for the loadings (λ) are fixed values representing the square root of the reliabilities as are the error terms (ε) representing the value 1 minus the reliability times the variance of the measure. The remaining paths were freely estimated and are reported in Table 3.

with another exogenous variable upon the outcome variables. Hypothesis 2a proposed relationships, partially mediated by anger, between POS and turnover intention, absences, and reported work accidents. Hypothesis 2b was not testable because of the nonsignificant path from anger to POS. As described in James et al. (2006), Hypothesis 2a is confirmed if three conditions are met: (1) POS has direct negative associations with turnover intention, absence, and reported work accidents, (2) POS has indirect negative associations through anger with turnover intention, absences, and reported work accidents, and (3) anger has direct positive associations with turnover intention, absence, and reported work accidents. As seen in Table 3, this hypothesis was supported. Considering collectively the direct effects of POS and anger as well as the indirect effects of POS on the variables through anger, statistically significant amounts of variances were accounted for in turnover intention (22%), absences (6%), and accidents (5%).

Hypothesis 3a proposed relationships, partially mediated by anger, between POS and alcohol consumption and high-risk health behaviors. Once again, Hypothesis 3b was not testable because of the nonsignificant path from anger to POS. Similar to the previous hypothesis, Hypothesis 3a is confirmed if three conditions are met: (1) POS has direct negative associations with alcohol consumption and high-risk health behaviors, (2) POS has indirect negative associations through anger with alcohol consumption and high-risk health behaviors, and (3) anger has direct positive associations with alcohol consumption and high-risk health behaviors. As seen in Table 3, this hypothesis was not supported because the direct effects of POS onto high-risk behaviors and alcohol consumption were statistically nonsignificant. However, the

Table 2
Standardized Parameter Estimates for the Control Variables

Variable	POS	Anger	Turnover intention	Accidents	Absences	Alcohol use	High-risk behaviors	High involvement
Supervisor/managerial status	.01	−.04	.06*	−.01	.06*	−.04	.04	−.12*
Tenure	−.06*	.06*	−.02	−.04	.01	−.02	−.03	−.38*
Age	.08*	−.19*	−.11*	−.09*	−.11*	−.04	.06	.12*
Male	.02	−.06	.07*	.03	−.04	.12*	.12*	−.07*
Education	−.03	−.04	.06*	−.05	.04	−.04	−.15*	−.14*
White	.01	.07	−.10*	.07	.02	.02	.03	−.07
Black	−.04	−.01	−.05	.07	−.01	−.04	.04	.04
Hispanic	.02	−.05	−.05	.04	.04	.01	−.04	.01

Note. POS = perceived organizational support.
* Statistically significant at $p < 05$, $n = 1{,}136$.

indirect effects of POS through anger onto high risk and alcohol consumption and the direct effects of anger on high-risk behaviors and alcohol consumption were statistically significant, accounting for 4% of the variance in each variable.

Unit-Level Hypotheses Tests

Tests of the unit-level hypotheses are presented in Table 4. To explore the effects of POS and anger on store-level outcomes, we specified a multilevel structural equation model in which the individual-level model was identical to the one used to test the hypotheses, but with systematic variation because of individuals being controlled. We used random coefficients modeling procedures to test the model. Specifically, we used the multilevel analytical feature of M*plus* (Muthén & Muthén, 2006). Although random intercepts and slopes may be modeled at the unit level, only the intercepts of POS and anger were used to represent their respective latent variables at the between unit level. Muthén and Muthén (1998-2006)

Table 3
Tests of Hypotheses

Hypotheses	Step	Paths	Standardized estimates
Hypothesis 1		POS → anger	−.32*
		Anger → POS	.04
Hypothesis 2a	1	POS → turnover intention	−.41*
		POS → absence	−.08*
		POS → accidents on the job	−.11*
	2	POS → anger → turnover intention[a]	−.02
		POS → anger → absence[a]	−.04*
		POS → anger → accidents on the job[a]	−.04*
	3	Anger → turnover intention	.06*
		Anger → absence	.13*
		Anger → accidents on the job	.12*
Hypothesis 3a	1	POS → monthly alcohol consumption	.01
		POS → high-risk health behaviors	−.03
	2	POS → anger → monthly alcohol consumption[a]	−.04*
		POS → anger → high-risk health behaviors[a]	−.05*
	3	Anger → monthly alcohol consumption	.17*
		Anger → high-risk health behaviors	.14*

Note. POS = perceived organizational support.
[a] The effects here are indirect effects; otherwise, all estimates represent direct effects. Hypotheses 2b and 3b were not testable.
* Statistically significant, $p < .05$.

Table 4
Tests of Between-Unit Hypotheses

Variable	Step	Paths	Standardized estimates
Hypothesis 4		POS → anger	−.70*
Hypothesis 5a	1	POS → turnover	.46
		POS → inventory loss	−.18
	2	POS → anger → turnover[a]	.43
		POS → anger → inventory loss[a]	−.61
	3	Anger → turnover	.61*
		Anger → inventory loss	.86*

Note. POS = perceived organizational support.
[a] The effects here are indirect effects; otherwise, all estimates represent direct effects. Hypotheses 5b was not testable.
* Statisticallly significant, $p < .05$.

interpret the intercepts at the higher-order level as unobserved variables derived from the observed manifestation of the variable at the lower-order level.

Before testing the model, we justified the use of POS and anger at the higher-order level by following the process recommended by Raudenbush and Bryk (2002, pp. 69–72). The first step in that process, which involves testing the assumption that not all stores differed in terms of their means for POS and anger, was reported in the description of the control variables. As reported, the chi-squares were statistically significant, indicating store-level differences in POS and anger. Next, using the means for each variable, we calculated the intraclass correlations coefficients (ICC) and found them to be .07 for POS and .09 for anger. Thus, approximately 7% of the variance in POS and 9% of the variance in anger was because of between-store differences. The average reliability of the store means was .60 for POS and was .52 for anger, indicating that the sample means are moderately good indicators of the true means for each store. Overall, stores differed reliably in terms of employees' combined levels of POS and anger. As an additional test, we calculated the R_{wg} values of individual stores for POS and anger using the items for each measure. We found that the mean R_{wg} for anger to be .82 and the mean R_{wg} of POS to be .90.

The correlations among the additional variables and the aggregated POS and anger variables are presented in the bottom portion of Table 1. With respect to model fit, the fit indices are similar to the individual-level model. Once again, the chi-square was statistically significant, $\chi^2[4] = 45.84, p < .001$. The remaining descriptive fit indices supported a strong fit of the model to the data (CFI = .99; RMSEA = .07; Between-level SRMR = .08; Within-Group SRMR = .001). Given the strength of these indices, we felt comfortable interpreting the parameter estimates underlying the paths in the model. The findings are presented in Table 4.

Hypothesis 4 proposed a reciprocal and negative relationship between POS and anger. However, in light of the findings from Hypothesis 1, the unit-level model specified only a path from POS to anger. Consistent with the findings at the individual level, the path from store-level POS to store-level anger was statistically significant and negative. Hypothesis 5a proposed relationships, partially mediated by anger, between POS and unit-level turnover rates and unit-level inventory loss. Hypothesis 5b was not testable because the relationship of POS to anger was reciprocal. Similar to the procedure used to confirm the partial mediation hypotheses at the individual level, Hypothesis 5a was supported if three conditions were met: (1) unit-level POS has direct negative associations with unit-level turnover and unit-level inventory loss, (2) POS has indirect negative associations through anger with unit-level turnover and unit-level inventory loss, and (3) anger has direct positive associations with unit-level turnover and unit-level inventory loss. As shown in Table 4, this hypothesis was not supported because POS did not have a direct or indirect association with unit-level turnover and inventory loss. Store-level anger displayed significant positive associations with both turnover and inventory loss. Using the unstandardized coefficients to interpret the direct effects alone, this means that for every unit increase in anger, store turnover increases by 23%, and loss increases by $2.8 million.

Discussion

Key Findings and Theoretical Contributions

The goal of the current study was to extend organizational support theory through an examination of anger in the workplace. We first examined whether anger was an antecedent or a consequence of employees' perceptions of conditions or events in the workplace. Although a negative reciprocal relationship between anger and POS was hypothesized, only the negative relationship from POS to anger was supported. The relationship of POS and anger lends support to the social exchange perspective; anger seems to result from employees' negative perceptions of workplace conditions rather than anger serving as a filter for negative perceptions of the organization, as suggested by affect-as-information and mood-congruency theories.

Specifying the direction of the POS-anger relationship enabled us to extend POS in three ways: (1) by demonstrating both the direct and indirect consequence of POS for a number of workplace outcomes, (2) by examining the mediating role of emotions in the relationship of POS and workplace outcomes, and (3) by testing a model of the relationships of POS, anger, and workplace outcomes at the organizational level of analysis. Results indicate that POS and anger were associated with a number of work-related anger-out and anger-in behaviors. With respect to anger-out behaviors, we found that anger partially mediated the relationship of low POS and two common measures of organizational withdrawal, namely, turnover and absenteeism. We also found that anger partially mediated the relationship of low POS and anger to a common measure of organizational safety, accidents on the job. Perhaps of greater importance to both individuals and the organization, however, are the associations of anger to anger-in behaviors, specifically, alcohol consumption and high-risk health behaviors. Although we only found an indirect relationship between POS and these behaviors, for every unit increase in anger, individuals increase alcohol consumption by 3.2 drinks per month and increase their engagement in high-risk health behaviors by 13%. Adding to outcomes of theoretical and practical importance were findings indicating unit-level consequences of store-wide anger on turnover and inventory loss. Although store-level POS is an antecedent to store-level anger, anger was clearly the driving factor behind turnover and inventory loss. These findings at the store level of analysis are particularly notable, first, given that each store included 77 respondents on average and, second, because the data are longitudinal. Although evidence of shared organizational perceptions has been demonstrated in previous research (e.g., Schneider et al., 1998, 2003; Zohar & Luria, 2005), this is the first study to our knowledge that has aggregated perceived organizational support to the store level of analysis. Similarly, most studies of group-level emotion have examined groups consisting of three to eight people (e.g., Barsade, 2002; Bartel & Saveedra, 2000).

To summarize, our study contributes to a greater understanding of anger within a perceived organizational support framework. Our study expands the organizational behavior literature by focusing on organizational support, rather than injustice (e.g., Barclay et al., 2005), as an organizationally based predictor of anger. This distinction is important because whereas organizations are obligated to provide justice to employees, they are not necessarily obliged to provide support. In addition, because organizational support has been examined less frequently, it allows us to expand the range of outcomes in the organizational context affected by organizational emotions. Several of these outcomes—alcohol consumption and high-risk health behaviors, for example—are rarely examined in the organizational context. Our study also expands the literature by integrating a complementary perspective, that of emotion regulation, into organizational support theory. Although social exchange theory is frequently used to account for the impact of POS on many workplace outcomes (e.g., withdrawal behaviors), it is less helpful in explaining alcohol consumption and high-risk health practices, which, our results show, are indirect consequences of POS.

Limitations of Present Research

The results of this study must be considered in relation to its limitations. Most notably, the design of the study precludes drawing causal inferences at the individual-level of analysis. Hence, a stronger test of these relationships is needed, particularly in light of potential reciprocity between POS and anger. Another limitation of this study was that most of the variables were self-report measures. Although much of the concern with percept-percept bias is largely overstated (Spector, 2006), there are a number of factors offsetting its possible impact in the current study. Not all of the variables were anchored with the same response format, and many tapped into very different constructs and behaviors (e.g., POS vs. accidents). Moreover, the multilevel analysis indicated

that there were significant between-store differences on POS and anger. Unless one is willing to argue that percept-percept bias would also vary systematically between stores, then it is unlikely to have had a strong presence at the individual level of analysis. In addition, our analysis indicated that low POS and anger had longitudinal associations with one another and, in the case of anger, with store-level effectiveness indices. A final limitation is that our anger measure did not capture feelings of anger specifically directed toward the organization or its members. In this way, our conceptual model is not perfectly aligned with the operational definitions of the variables. As an initial field study of these relationships, the research design used in the present study seems reasonable. Nonetheless, future studies should seek alternative means of collecting data.

Implications for Practice

In addition to the theoretical implications of our findings, the practical consequences for individuals and to organizations are quite important. Absenteeism and turnover are extremely costly for organizations. From a health perspective, engaging in excessive alcohol consumption and high-risk health behaviors can have long-term, irreversible health consequences. Finally, the direct and indirect costs associated with human resources and health-related outcomes can be staggering for an organization. The good news is that if an organization successfully influences employees' perceived organizational support, anger, withdrawal behaviors, accidents, and high-risk behaviors will decline. Anger reduction is particularly important for the organization, as highlighted by the costs in terms of employee turnover and loss of inventory.

Conclusion

The present study deepens our understanding of anger within a perceived organizational support framework by examining the direct and indirect relationships among POS, anger, and workplace outcomes of practical and theoretical importance. Our study clarifies the direction of the relationship between low POS and anger and the costly implications of this relationship for individuals as well as organizations.

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