An Attributional Analysis of Counterproductive Work Behavior (CWB) in Response to Occupational Stress

by

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An Attributional Analysis of Counterproductive Work Behavior (CWB) in Response to Occupational Stress

Angeline Goh

ABSTRACT

The purpose of this study was to investigate the influence of hostile attribution style (HAS) on the processes linking job stressors and CWB. Self and peer data were collected via online questionnaires from employed participants recruited from undergraduate classes and non-student employees. Using data from 147 dyads of employees and coworkers, the effects of HAS on three areas were examined: the influence of HAS on the appraisal of psychosocial (incivility, interactional justice, and interpersonal conflict) and nonsocial (organizational constraints and workload) stressors; HAS as a moderator of the link between stressors and CWB; and HAS as mediator of the link between CWB and the individual difference variables of negative affectivity (NA), trait anger, and Machiavellianism. Regarding appraisals, HAS was more strongly related to psychosocial stressors than to workload (nonsocial stressor). However, results regarding the comparisons of the HAS-psychosocial stressor correlations with the HAS-organizational constraints (nonsocial stressor) correlations were mixed. Moreover, contrary to what was hypothesized, correlations of HAS with interpersonal constraints and job context constraints were not significantly different in magnitude. HAS was shown to moderate the relationship between CWB and the stressors of interpersonal conflict and organizational constraints. Individuals high on HAS engaged in more CWB when stressors were high, whereas individuals low on HAS engaged in low levels of CWB overall. HAS partially mediated the relationship between NA and CWB, in addition to the relationship between trait anger and CWB. It fully mediated the relationship between Machiavellianism and CWB. The influence of Machiavellianism on the.
occupational stress process also was explored. It was expected that high Machiavellians would appraise and respond to stressors in a negative fashion. However, contrary to what was expected, Machiavellianism was positively associated with informational justice and negatively related to incivility and CWB. Furthermore, it was negatively associated with NA and HAS. An alternative explanation for the results regarding Machiavellianism was presented. Although all hypotheses regarding the effects of HAS were partially supported, results of this study were generally demonstrative of the merits of including attributional processes (i.e., hostile attribution style) in CWB research within the occupational stress framework.
Chapter 1 - Introduction

In recent years organizational scientists have examined counterproductive work behavior (CWB), or behavior that harms or intends to harm organizations and their stakeholders, within the occupational stress framework. However, this research (e.g., Fox, Spector, & Miles, 2001) has focused mainly on CWB as an emotion-based strain response to job stressors. Although the strain response is contingent upon an individual’s appraisal of environmental stressors, few studies have directly assessed people’s appraisal and attributional processes or explicitly examined their influence on the occupational stress process. Using the occupational stress framework, the current study attempted to elucidate the influence of attributional processes on CWB. Specifically, the purpose of this study was to examine the effects of attributional style (i.e., hostile attribution style) on the processes that link job stressors (e.g., incivility and organizational constraints) with CWB.

The Occupational Stress Process and CWB

A job stressor is a condition or situation that requires an adaptive response on the part of an employee (Jex & Beehr, 1991). It can be anything an individual interprets as threatening to his or her psychological or physical well-being (Spector, 2002). A job strain is an aversive reaction to a stressor (Jex & Beehr, 1991). Strains refer to the negative ways employees may respond to a stressor, and can be psychological, physical, or behavioral in nature (Jex, 1998; Jex & Beehr, 1991). Examples of psychological strains are anxiety, frustration, depression, job dissatisfaction, commitment, and intent to quit. Physical reactions include physical symptoms such as dizziness, headaches, and stomach aches, and illnesses such as cardiovascular disease and cancer. Behavioral responses include substance abuse, absenteeism, accidents, and turnover. Job stressors
are linked to strains by an individual’s perception and interpretation (i.e., cognitive appraisal) of environmental conditions (e.g., Lazarus, 1995). Appraisals are central to an individual’s “stress” response to stressors as it is the individual’s interpretation of the significance of an event for his well-being that determines whether a strain response will occur (Lazarus, 1982; Lazarus & Folkman, 1984). An event that is not perceived as a threat to an individual’s well-being will not result in a stress reaction (Lazarus, 1995; Lazarus & Folkman, 1984).

Spector (1998) and Spector and Fox (2002) developed a job stress/emotion/CWB model that suggests CWB is an emotion-based response to stressors at work. According to Spector and colleagues (1998, 2002), job stressors represent events that are interpreted as threats to well-being and result in negative emotional reactions, such as anger or anxiety. In addition, negative emotions mediate the relationship between job stressors and CWB, which is a behavioral manifestation of strain (Fox et al., 2001). Negative emotions, such as anger and anxiety, have been shown to mediate the relationship between CWB (both organizational and personal forms) and job stressors such as organizational constraints, interpersonal conflict, and procedural justice (Fox et al., 2001). Fox et al. (2001) also found evidence that negative emotions mediated the relationship between distributive justice and organizational CWB. Lee (2003) examined the effect of conflict source (supervisor vs. coworker) on CWB target (organizational vs. personal). She found some support that negative emotions mediated the relationship between conflict with one’s supervisor and organizational CWB. In contrast, negative emotion partially mediated the relationship between conflict with coworkers and interpersonal CWB.

An Attribution-Based Model of CWB

Occupational stress researchers (e.g., Spector & Fox, 2002) generally use Lazarus’ (1995) transactional, appraisal-centered, approach when examining the relationships between job stressors and strains. Occupational stress research, however, mainly focuses on the stressors and strains rather than the actual process that links them (Dewe, 1991). There exists some research on
the emotional processes connecting stressors with strains (see Spector & Goh, 2001). However, research on the mental processes linking stressors to strains is lacking. For example, appraisals (i.e., the meanings people attribute to work events) are rarely assessed directly even though they are “an important mediating process in the occupational stress process” (Spector & Jex, 1998, p. 359). Dewe (1991) examined the role of appraisals (primary and secondary) and coping in stressful work encounters. He asked participants to describe an event or situation at work that had been stressful for them, and to answer a series of questions regarding the event that were quantified into measures of primary appraisal, secondary appraisal, and coping. Dewe found that primary appraisal was a significant predictor of two strains, tension (e.g., felt nervous or irritated as a result of the event) and constraints (e.g., felt frustrated with what goes on at work). Dewe’s research is significant in that it provided statistical evidence regarding the role of appraisals in the occupational stress process. However, his study did not include a measure of attributions, which affect an individual’s appraisal processes (Segovis, Bhagat, & Coelho, 1985).

Perrewé and Zellars’ (1999) transactional attributional model of the occupational stress process can be used as a framework to guide research on the mental processes connecting stressors and strains. Their model incorporated attribution research (e.g., Weiner, 1985) with Lazarus’ (1991, 1995) transactional occupational stress model. Perrewé and Zellars (1999) suggest that attributions play an important role in how people appraise and respond to situations. They affect threat assessment (i.e., significance of an event for one’s well-being) (Schaubroeck, 1999), experienced emotion, and the behavioral response to an event. For example, “the attributional antecedent for anger is an ascription of a negative, self-related outcome or event to factors controllable by others” (Perrewe & Zellars, 1999, p. 746). Therefore, upon receiving an insult, an individual may become angry and retaliate because he or she interprets the insult as a threat to well-being. In contrast, another person may ignore the insult and not retaliate because he or she did not appraise it as a threat.
Attributions versus attributional style. Attributions refer to an individual’s perceptions of the causes behind other people’s behaviors (Baron & Byrne, 2003), whereas attributional style (or bias) refers to a person’s tendency to make certain type of attributions (Peterson, Semmel, Von Bayer, Abramson, Metalsky, & Seligman, 1982). Generally, there are three dimensions along which behavior is explained: locus (internal-external), stability (stable-unstable), and controllability (controllable-uncontrollable) (Weiner, 1985). An internal explanation focuses on one’s own traits, motives, and intentions, whereas an external one focuses on some aspect of the social or physical environment. A stable cause is perceived to be permanent or enduring, whereas an unstable cause is temporary or fluctuates. Lastly, a controllable cause is under the volitional control of the individual, whereas an individual cannot change or influence when the cause is uncontrollable.

Globality and intentionality are two other dimensions along which behavior might be explained (Weiner, 1985). Globality refers to whether the cause of an event is situation specific or generalizable to other settings (Abramson, Seligman, & Teasdale, 1978). Intentionality has to do with the difference between effort and strategy (Weiner, 1979). An individual can purposefully or knowingly exert insufficient effort, whereas one does not intentionally use an improper, bad strategy.

Attribution styles influence the attributions people make for positive and negative events. For example, individuals with an optimistic explanatory style have the tendency to attribute positive events to internal, stable, and global causes, and to attribute negative events to external, unstable, and specific causes (Seligman, 1990). Individuals with a pessimistic explanatory style have the tendency to make attributions in the exact opposite pattern. Within the organizational context, hostile attribution style has been defined as the tendency to attribute negative workplace events to external, stable, controllable, and intentional causes (Douglas & Martinko, 2001). Other
researchers have defined hostile attribution style as the tendency “to interpret the intent of others as hostile when social cues fail to indicate a clear intent” (Epps & Kendall, 1995, p. 161).

**Attribution research on the occupational stress process.** Zellars, Perrewé, Ferris, and Hochwarter (2004) examined the role of attributions regarding stressors and emotions in the occupational stress process. Specifically, they investigated the effect of attributions regarding the cause of work-family conflict (experienced stress) on emotions and coping behaviors in a sample of female lawyers. They found that attributions to others (external, controllable) as the cause of felt stress (i.e., work-family conflict) were related to negative emotions, such as frustration ($r = .31$), shame ($r = .26$), anger ($r = .22$), and guilt ($r = .21$), and with both emotion-focused ($r = .22$) and problem-focused ($r = .23$) coping behaviors. In addition, attributions to organizational policies (external, controllable) as the cause of experienced stress (i.e., work-family conflict) were related to anger ($r = .44$), shame ($r = .31$), guilt ($r = .21$), and emotion-focused coping behaviors ($r = .19$).

Harvey and Martinko (2005) recently examined the role of hostile attribution style in the experience of stress and turnover intentions. They proposed that an individual’s hostile attributions regarding a negative outcome lead to increased levels of stress, and that stress mediates the relationship between attributions and increased turnover intentions. They found that hostile attribution style was positively related to experienced stress (psychological strain) and to turnover intentions. Moreover, stress was confirmed as a mediator between hostile attributions and turnover intentions.

Keashly and Harvey (2005), when discussing CWB research within the occupational stress framework, suggested that an instigator’s intent should be examined from the target’s perspective in addition to the role that attributions of the instigator’s intent play in appraisal and coping processes. For example, Keashly and Rogers (2001) found that targets perceived events as more threatening when they interpreted the instigator’s actions as containing malevolent intent.
Similarly, Cortina, Magley, Williams, and Langhout (2001) suggested that cognitive appraisal and attributions mediate the effects of workplace interpersonal mistreatment (e.g., incivility) on employee strains (psychological, physical, and behavioral). There is evidence regarding the influence of attributions and attribution style within the occupational stress framework (e.g., Harvey & Martinko, 2005; Zellars et al., 2004); however, there exists no research that directly examines the effect of attribution style (i.e., hostile attribution style) on the relationship between job stressors (e.g., incivility and organizational constraints) and CWB. Therefore, the main goal of this study was to examine the influence of hostile attribution style on the processes that link job stressors with CWB.

Support for the attributional approach can be found from attributional research on general aggression (e.g., Weiner, 1995). For example, Rudolph, Roesch, Greitemeyer, and Weiner (2004) meta-analyzed the relationship of cognitions (i.e., attributions of controllability and responsibility) with emotional reactions (i.e., anger) and aggressive behavior. They found that perceptions of controllability were related to both anger and aggression (mean correlations of .61 and .49, respectively). In addition, anger was associated with aggression (mean correlation of .56). Using path analysis, Rudolph et al. (2004) also found that attributions of controllability and emotions were both proximal determinants of aggressive behavior. Attributions were also a distal determinant of aggression; emotions (i.e., anger) mediated the relationship between cognitions (i.e., attributions of controllability) and aggressive behavior. Similarly, Betancourt and Blair (1992) found that attributions (i.e., perceptions of intentionality and controllability) for a conflict situation were related to the emotional reaction of anger and violence level of an aggressive response. Attributions of intentionality \( r = .53 \) had a stronger relationship with violent reactions than perceptions of controllability \( r = .32 \). Furthermore, emotions (i.e., anger) were shown to mediate the relationship between attributions and violent reactions.
Counterproductive Work Behavior (CWB)

Counterproductive work behavior (CWB) represents volitional acts that can be aimed at the organization itself or people in the organization (e.g., supervisor, coworker, subordinates) and either harm or are carried out with the explicit intention to harm (Spector & Fox, 2005). Keashly, Trott, and MacLean (1994), in their study of abusive behavior in the workplace (a form of CWB), found that all participants had experienced at least one incident of nonsexual, nonphysical abusive behavior. Respondents also indicated that supervisors were the most common perpetrator, followed by coworkers and subordinates. Moreover, they reported feeling more disturbed by abuse from supervisors than from coworkers (Keashly & Neuman, 2002). Relatedly, 32% of participants in Bjorkqvist, Osterman, and Hjelt-Back’s (1994) study of harassment at work reported that they had observed others being mistreated. Respondents also indicated that individuals in superior positions harassed others in lower positions more often than those in lower positions harassed others in superior positions.

In their study of employee aggression, Greenberg and Barling (1999) found that 82%, 74%, and 76% of participants reported having psychologically aggressed at least once against a coworker, subordinate, and supervisor, respectively. Gossiping about or arguing with the target were the most frequent forms of psychological aggression. Less than 1% of participants reported engaging in physical aggression against a target.

Psychological reactions to CWB include feelings of depression and anxiety (Bjorkvist et al., 1994). Psychosocial problems (Kaukiainen, Salmivalli, Bjorkqvist, Osterman, Lahtinen, Kostamo, & Lagerspetz, 2001); emotional exhaustion (O’Brien & Vandello, 2005; Tepper, 2000); life dissatisfaction (Tepper, 2000); and decrements in emotional well-being (LeBlanc & Kelloway, 2002; Schat & Kelloway, 2000), self-esteem, and self-confidence (Price Spratlen, 1995) are other psychological strains. Work-related psychological reactions are job dissatisfaction, work-to-family conflict, family-to-work conflict (Tepper, 2000), and decrements
in job-related affect (Schat & Kelloway, 2003), normative commitment, and affective commitment (Tepper, 2000). Physical reactions include physical symptoms (Kaukiainen et al., 2001) and decrements in psychosomatic well-being (LeBlanc & Kelloway, 2002; Schat & Kelloway, 2003).

Behavioral reactions to CWB include turnover (LeBlanc & Kelloway, 2002) and decrements in communication with supervisors and productivity (Price Spratlen, 1995). More importantly, being the target of aggression is related to engaging in aggression (i.e., CWB). For example, participants in Baron and Neuman’s (1998) study of workplace aggression reported being the victim of aggression from their immediate supervisor, other superiors, coworkers, and subordinates significantly more often than they aggressed against such persons. However, when the victims became perpetrators, participants reported aggressing towards coworkers most (44.5%), followed by immediate supervisors (31.4%), other superiors (26.8%), and subordinates (22.2%). Moreover, respondents rated their aggression as being significantly more justified than that of fellow employees, regardless of the hierarchical status of the others (i.e., superior, coworker, or subordinate). Similarly, O’Brien and Vandello (2005) found that perceptions of mobbing (i.e., being victimized) were related to engaging in CWB ($r = .53$).

**Forms of CWB.** As early as 1978 Spector suggested that aggression in the workplace can be directed at either people or the organization itself. Organizational CWB represents acts directed at the organization as a whole (e.g., stealing money from the cash register), whereas personal CWB is directed at individuals within the organization (e.g., taking credit for a coworker’s idea). Evidence for this assertion can be found in Robinson and Bennett’s (1995) research on deviant workplace behaviors. Workplace deviance represents behaviors that are voluntary, violate organizational norms, and can potentially harm the organization (Bennett, Aquino, Reed, & Thau, 2005). Specifically, Robinson and Bennett (1995) found that deviant workplace behaviors vary along two dimensions: severity (minor vs. serious) and target
Deviant behaviors can be grouped into four distinct categories based on the two dimensions: production deviance (e.g., leaving early or intentionally working slowly), property deviance (e.g., sabotaging equipment or lying about hours worked), political deviance (e.g., gossiping about or blaming coworkers), and personal aggression (e.g., verbally abusing or stealing from coworkers).

Buss’ (1961) taxonomy of aggression (physical vs. verbal; active vs. passive; and direct vs. indirect) also can be used to describe CWB. Verbal aggression harms the target through words (e.g., making a sarcastic remark about a subordinate), whereas physical aggression includes overt behavior that is intended to hurt the victim (e.g., pushing a coworker). Passive aggression harms the intended target by withholding behaviors or actions (e.g., not passing along information a coworker needs for a project), whereas active aggression harms by performing some behavior (e.g., refusing a subordinate’s request). Indirect aggression involves inflicting harm by attacking something or someone the person values (e.g., damaging a coworker’s personal laptop), whereas direct aggression directly harms the intended target (e.g., rescinding a promised promotion).

Baron and Neuman (1996) applied Buss’ (1961) taxonomy when examining the incidence of experienced and witnessed aggression in a sample of full-time employees from organizations in both the public and private sectors. For both witnessed and experienced aggression they found that verbal, passive, and direct forms of aggression were used significantly more frequently than physical, active, and indirect forms.

Covert aggression consists of behaviors that allow one to harm others with little risk of censure or retaliation from coworkers or the organization (Baron, 1996). Covert counterproductive job performance consists of interpersonal, unobtrusive behavior that is difficult to detect, and includes interpersonal acts such as spreading false rumors, manipulating others, withholding important information from a coworker, and taking credit for someone else’s work (Collins & Griffin, 1998). The person’s aggressive intentions are disguised or the identity of the
aggressor is concealed (Baron, 1996; Collins & Griffin, 1998). In contrast, overt counterproductive job performance is concrete and observable, and includes behaviors such as verbal harassment, physical assault, tardiness, absenteeism, and property theft or damage (Collins & Griffin, 1998). Research on workplace aggression has found that covert forms of aggression are used significantly more often than overt forms of aggression (Baron, Neuman, & Geddes, 1999).

Baron et al. (1999) found that aggressive behavior consists of three dimensions: expressions of hostility, obstructionism, and overt aggression. Expressions of hostility are symbolic in nature and consist primarily of verbal behaviors (e.g., belittling a coworker’s opinion or giving a coworker dirty looks). Obstructionism is passive in nature and consists of behaviors intended to impede the target’s performance (e.g., failing to return a coworker’s phone call or showing up late for a meeting). Overt aggression consists of behaviors typical of workplace violence (e.g., physically attacking a coworker). Research has shown that expressions of hostility and obstructionism are the two most frequently used forms of aggression, whereas overt aggression is used least (Baron et al., 1999; Baron & Neuman, 1998). Similarly, research by Spector and colleagues (Fox & Spector, 1999; Spector, Fox, Penney, Bruursema, Goh, & Kessler, 2006) has shown that behaviors such as threatening another employee with violence or physically attacking an employee occur infrequently.

Recent research on the dimensionality of CWB has shown that it can be divided into five categories: abuse against others, sabotage, production deviance, theft, and withdrawal (Spector et al., 2006). Abuse against others represents harmful behaviors that can be psychological or physical in nature. Examples are making nasty comments about coworkers or undermining a coworker’s ability to work effectively (Spector et al., 2006). Sabotage affects physical property belonging to the organization (i.e., defacing or destroying the physical workplace), whereas production deviance represents behaviors that destroy the work process (e.g., purposefully
performing one’s work incorrectly) (Spector et al., 2006). Moreover, production deviance is
generally passive in nature, whereas sabotage is more active. Theft can be considered a form of
aggression against the organization (Neuman & Baron, 1997) even though it usually results from
economic need, injustice, or job dissatisfaction (Mustaine & Tewksbury, 2002). Withdrawal
consists of behaviors that reduce the amount of time one works to less than what the organization
requires (e.g., leaving early or taking longer breaks than allowed; Spector et al., 2006).

Psychosocial Stressors versus Nonsocial Stressors Related to CWB

Psychosocial factors represent “aspects of the work environment having to do with
interactions with other people” (Jex, 2002, pp. 180-181). Psychosocial stressors involve aspects
of the more abstract social environment and arise in part or whole from interactions amongst
employees (Spector, 2003; Spector & Jex, 1998). Interpersonal conflict refers to how well an
individual gets along with others at work (e.g., how often others are rude, nasty, or yell at you)
(Spector & Jex, 1998), and is one psychosocial stressor that has been associated with CWB
(Miles, Borman, Spector, & Fox, 2002). Incivility and organizational justice (i.e., interactional
justice) also can be considered psychosocial job stressors (see Fox et al., 2001; Penney, 2002;
Penney & Spector, 2005), and have been related to CWB as well (Marcus & Schuler, 2004;
Penney, 2002). Incivility refers to relatively mild, insensitive, rude, or discourteous behavior
toward others at work (Pearson, Andersson, & Wegner, 2001), whereas interactional justice refers
to polite, respectful, or courteous behavior shown by a supervisor during the enactment of
organizational procedures (Bradfield & Aquino, 1999; Folger & Baron, 1996; LeBlanc &
Barling, 2004). Incivility, interactional justice, and interpersonal conflict all involve perceptions
of interpersonal mistreatment, but the perceived (benign, benevolent, or malevolent) intent of the
instigator varies with each. For example, the underlying motive of incivility is ambiguous,
whereas there is clear hostile intent with interpersonal conflict (Penney & Spector, 2005). That is,
conflict refers to volitional acts with the intent to harm, whereas acts of incivility represent
harmful behaviors that are not necessarily intentional or malicious. Both incivility and conflict involve mistreatment from any member of an organization (i.e., superiors, coworkers, or subordinates), whereas interactional justice entails mistreatment only from a supervisor or others in authority. In addition, interactional justice is restricted only to situations involving the enactment of organizational procedures, whereas both incivility and conflict are not limited to formal procedural contexts.

Nonsocial stressors arise from the more concrete and objective aspects of the work environment. Organizational constraints refer to situations that interfere with an individual’s job performance (Spector & Jex, 1998), and are nonsocial stressors that have been associated with CWB (Fox & Spector, 1999). Examples of constraint sources are lack of budgetary support, information, or materials and supplies necessary for the job. Workload is another nonsocial stressor. It represents the amount of work an employee is required to do (Jex, 1998). However, research on workload has shown very weak support for its relationship with CWB (see Chen & Spector, 1992).

Interpersonal Conflict at Work

Interpersonal conflict refers to negatively charged interactions with others in the workplace (Jex, 2002). Conflict ranges in severity from minor disagreements to physical fights (Spector & Jex, 1998). The conflict can be covert (e.g., spreading rumors about a coworker) or overt (e.g., yelling at a coworker) in nature. In addition, conflict can be broken into active (e.g., arguing with a coworker) or passive (e.g., deliberately not returning a coworker’s phone calls) forms (Jex, 2002).

In a study of interpersonal mistreatment amongst university faculty and staff, 23% of respondents reported having been the victim of mistreatment during an 18-month period (Price Spratlen, 1995). Environmental mistreatment was the most common form of conflict experienced at work. Examples are being treated in a rude, hostile, or demeaning manner; being talked down
to in front of others; or being ignored. The majority of respondents also reported experiencing verbal mistreatment. Examples are being yelled or sworn at; receiving demeaning comments; being threatened with injury; or being verbally assaulted. Moreover, instigators of mistreatment were supervisors more often than coworkers.

In 1985 Keenan and Newton asked engineers about incidents at work that had been stressful for them. Seventy-four percent of all events reported included social interactions with supervisors, coworkers, and subordinates. Interpersonal conflict was the second most cited source of stress. These negative interpersonal encounters involved behaviors that can be classified as verbal aggression or covert hostility. Narayanan, Menon, and Spector (1999b) also asked individuals in different occupational groups (academic, clerical, and sales) about stressful incidents at work. Interpersonal conflict was the most frequently reported source of stress for the academic and sales groups. In contrast, it was the third most cited source of stress for the clerical group.

In a cross-cultural study of job stressors and strains for employees holding comparable jobs (i.e., clerical) in two countries, Narayanan, Menon, and Spector (1999a) found that interpersonal conflict was the third most cited source of stress for American respondents. In contrast, it was the fourth most cited source of stress for Indian participants. In 2003 Liu conducted another cross-cultural study of stressors and strains for employees holding comparable jobs; however, she used Chinese and American employees, and the sample consisted of university professors and administrative support staff. Chinese professors reported significantly higher levels of interpersonal conflict than American ones. Similarly, they experienced higher levels of conflict with supervisors than American professors. Chinese professors also reported higher levels of conflict with coworkers; however, the difference was not statistically significant.

Liu (2003) also divided interpersonal conflict into direct and indirect forms. Direct conflict involves direct confrontation between people, whereas indirect conflict involves indirect
actions such as doing nasty things to someone behind their back. Chinese respondents experienced significantly more indirect conflict than American ones. In contrast, American participants experienced significantly more direct conflict than Chinese ones.

Reactions to interpersonal conflict include negative emotions (Fox et al., 2001) and other feelings such as anger (Chen & Spector, 1991), anxiety, frustration (Spector, 1987), and being upset (e.g., discouraged, frightened, furious, and gloomy) (Spector et al., 2006). Other related psychological strains are perceptions of stress (Chen & Spector, 1991), depression (Heinisch & Jex, 1997), work anxiety (Jex & Spector, 1996), job dissatisfaction (Spector, 1987), and intent to quit (Spector, Dwyer, & Jex, 1988). Conflict also has been related to physical strains such as physical symptoms (Spector, 1987) and doctor visits (Chen & Spector, 1991). Frone (2000) examined the effects of interpersonal conflict, separated by source (supervisor vs. coworker), on various psychological and organizational strains. Supervisor conflict was associated with increased job dissatisfaction and intent to quit and decreased organizational commitment. In contrast, coworker conflict was related to somatic symptoms, depression, and decreased self-esteem.

Interpersonal conflict and CWB. Results of a survey conducted by Northwestern National Life (NWNL) that was reported in VandenBos and Bulatao (1996) showed that supervisors and coworkers accounted for 86% of all workplace harassment, 33% of threats, and 25% of workplace attacks. Furthermore, interpersonal conflict was cited as the cause by 46% of victims of harassment and 27% of employees who had been threatened. Relatedly, 47% of respondents in Glomb’s (2002) study of workplace aggression cited interpersonal conflict as the cause of an aggressive encounter.

Bergmann and Volkema (1994) examined behavioral responses to interpersonal conflict at work. Responses such as avoiding the person; forming alliances; not talking with the person; or not cooperating with the person were more common when the source of conflict was a coworker...
versus a supervisor. In contrast, talking behind the person’s back, getting even, or committing sabotage were more common when the source of conflict was a supervisor versus a coworker.

Interpersonal conflict has been associated with an overall measure of CWB \( (r = .19) \) (Miles et al., 2002) in addition to organizational \( (r = .32) \) and personal \( (r = .40) \) forms (Fox et al., 2001). Conflict has also been related to other dimensions of CWB such as abuse \( (r = .54) \), production deviance \( (r = .28) \), sabotage \( (r = .26) \), theft \( (r = .19) \), and withdrawal \( (r = .14; \) Spector et al., 2006). Spector et al. (2006) noted that interpersonal conflict had stronger relations with personal forms of CWB (i.e., abuse and person CWB) than with organizational forms of CWB (i.e., production deviance, sabotage, theft, and withdrawal). Interestingly, conflict was more strongly related to theft from fellow employees \( (r = .26) \) than theft from the organization \( (r = .17) \).

Further evidence of the relationship between interpersonal conflict and CWB comes from multi-source studies of CWB. For example, Penney (2002) found self- and peer-reports of conflict to be related to both self- and peer-reports of CWB. In addition, Goh, Bruursema, Fox, and Spector (2003) found self-reported interpersonal conflict to be associated only with self-reported, personal CWB, whereas it was related to both organizational and personal forms of CWB as reported by peers. Similarly, peer-reported conflict was related to self-reported, personal CWB, whereas it was associated with both organizational and personal forms of CWB as reported by peers. For both self- and peer-reports, the relationship of interpersonal conflict with personal CWB was larger than that with organizational CWB.

Bruursema (2004) examined the relationship between source of interpersonal conflict (supervisor vs. coworker) and CWB (organizational and personal). She found that conflict with supervisors was more strongly related to organizational CWB \( (r = .46) \) than personal CWB \( (r = .39) \). Conversely, conflict with coworkers was more strongly associated with personal CWB \( (r = .41) \) than with organizational CWB \( (r = .24) \). Lee (2003) also investigated the relationship
between conflict source and form of CWB with self- and peer-reports. She found that self-reported, supervisor conflict was associated with organizational CWB as reported by both self and peers. Peer-reported, supervisor conflict was related to both organizational and personal forms of CWB as reported by peers. In general, supervisor conflict showed stronger relationships with organizational CWB than with personal CWB for both self- and peer-reports. Self-reported, coworker conflict was related to both organizational and personal forms of CWB as reported by both self and peers. Similarly, peer-reported, coworker conflict was associated with both organizational and personal forms of CWB as reported by both self and peers. Coworker conflict generally showed stronger relationships with personal CWB than with organizational CWB except when both coworker conflict and CWB were assessed with peer-report.

**Incivility**

Incivility represents a milder form of psychological mistreatment where the intention of the perpetrator is obscure (Cortina et al., 2001). Specifically, Pearson et al. (2001) defined workplace incivility as “low-intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviors are characteristically rude and discourteous, displaying a lack of regard for others” (p. 1397). Examples of incivility are speaking to someone in a demeaning manner; treating someone like a child; publicly undermining someone’s credibility; excluding someone from a meeting; not greeting someone; and cutting someone off when they are speaking (Pearson, Andersson, & Porath, 2000).

Acts of incivility may occur when one desires to harm the target and/or the organization or to benefit oneself; however, uncivil acts can occur without any malevolent intent (Pearson et al., 2001). Incivility is a social interaction that can be interpreted differently by the parties involved because the intent of the harm-doer is ambiguous in the eyes of the target, observers, or even the instigator (Pearson et al., 2000). For example, an individual may perceive that his supervisor constantly cuts him off when he speaks at departmental meetings. However, the
instigator may claim that any harm experienced was due to oversight or ignorance on his part (Pearson et al., 2000). Or, the instigator can deny harmful intent by claiming that the target has misinterpreted the behavior or that the target is hypersensitive. This is due to the fact that behavior “one person may perceive as cold, brusque, or rude, another may view as a no-nonsense, competent, or efficient manner” (Johnson & Indvik, 2001, p. 458).

Incivility can take non-escalating, spiraling, or cascading forms (Pearson et al., 2000). It can be a tit-for-tat exchange of behaviors of equal intensities (non-escalating, uncivil exchange) or it can escalate into a spiral of more aggressive behaviors with each exchange (escalating spiral of incivility). Alternately, incivility may be redirected towards a coworker or subordinate (direct displacement of cascading pattern of incivility) when the victim does not dare to retaliate directly against the instigator. This often happens when the instigator is of higher status (i.e., one’s supervisor) than the victim. Although the instigator of incivility can be at the same, higher, or lower level than the target (Pearson et al., 2001), instigators of incivility are three times more likely to be of higher status than the target (Pearson et al., 2000).

Cortina et al. (2001) examined the incidence of workplace incivility in public-sector employees, and found that 71% of participants reported experiencing some form of incivility within the previous 5 years. Specifically, 39% reported experiencing incivility once or twice, 25% responded sometimes, and 6% stated that they were often or many times the target of incivility. Furthermore, 10% of participants in a nationwide survey conducted by Pearson and Porath (2002) reported witnessing incivility on a daily basis, whereas 20% reported being the target of incivility at least once a week.

Reactions to incivility include psychological strains such as feelings of psychological distress and decrements in psychological well-being and life satisfaction (Lim & Cortina, 2005). Work-related strains include feelings of job stress, job dissatisfaction, and intent to quit (Lim & Cortina, 2005). Burnfield, Clark, Devendorf, and Jex (2004) found that incivility had a stronger
relationship with the threat component (e.g., feeling that the job is nerve-wracking) of work stress than with the pressure component (e.g., job demands are hectic). Incivility is also related to physical symptoms, which is one manifestation of physical strain (Burnfield et al., 2004). When examining the effect of customer incivility on interpersonal deviance at work Burnfield, Clark, Thornbury, Lodato, Jex, and Christopher (2005) found that customer condescension was related to psychological strains such as emotional exhaustion, depression, and job dissatisfaction.

_Incivility and CWB._ Withholding full commitment, retribution, or emulating incivility are three ways Zauderer (2002) suggested that victims of incivility can cope. The other two are rationalization (e.g., this job is bad, but it’s probably worse elsewhere) and seeking change (i.e., telling the instigator about uncivil acts committed, hoping that he or she will stop). When an individual withholds commitment he or she gives less to the organization, by not staying late to meet a deadline or stopping efforts to come up with innovative ways to improve the organization, for example. With retribution, a victim may try to undermine the instigator by withholding important information from the manager or telling coworkers about mistakes the manager has made. Lastly, a victim of incivility may start committing acts of incivility against other coworkers or subordinates.

Participants in Pearson et al.’s (2000) study of workplace incivility reported committing intentional acts such as reducing efforts at work (25%) and reducing one’s organizational commitment (33%). Respondents also intentionally avoided the instigator (25%), whereas some others decreased the amount of time spent at work. Twelve percent of participants actually quit their jobs in response to uncivil acts. Furthermore, 5% of respondents stole property from the instigator as retaliation for unfair treatment, whereas another 5% stole property from the organization itself. Lastly, targets of incivility have reported displacing their ill will on a coworker or by directing it at no one in particular (Pearson et al., 2001).
When a target of incivility is less powerful than his instigator he tends to avoid the instigator or makes attempts to damage the instigator’s reputation (Porath, Pearson, & Shapiro, 2002). A target may also direct his aggression towards the organization.

Johnson and Indvik (2001) suggested that rude behavior can lead to interpersonal conflict, which can be considered both a stressor and an example of escalatory aggression (i.e., result of an incivility spiral). Burnfield et al. (2004) found a strong relationship \( r = .65 \) between incivility and interpersonal conflict. Penney (2002) also found that incivility was related to interpersonal conflict using both self- \( r = .49 \) and peer- \( r = .59 \) reports.

Penney (2002) also examined the relationship between incivility and CWB, using both self- and peer-reports. Both self- and peer-reports of incivility were related to self-reports of CWB, whereas peer-reports of incivility were associated only with peer-reports of CWB. Furthermore, she found that both self- and peer-reports of incivility were associated with organizational and personal CWB as reported by self and peers. With self-reports, incivility was more strongly related to organizational than personal CWB. In contrast, the relationship of incivility to personal CWB was stronger than that with organizational CWB, as reported by peers.

Incivility has been examined mainly as stemming from interactions with individuals internal to one’s organization (i.e., supervisor, coworkers, or subordinates). However, Burnfield et al. (2005) investigated the relationship between incivility from external customers and CWB (defined as deviance) at work (e.g., Robinson & Bennett, 1995). They found that customer condescension and customer insults were associated with interpersonal CWB \( r = .16 \) and \( .27 \), respectively).

*Interactional Justice*

Organizational justice refers to an employee’s perception of fair treatment on the job. There are three major forms of organizational justice: distributive, procedural, and interactional. Distributive justice refers to the perceived fairness of decision outcomes. It is promoted by
following appropriate norms (e.g., equity) for allocating resources (e.g., pay raise) (Colquitt &
Greenberg, 2003). Distributive justice outcomes are generally economical (e.g., bonus), but they
can also be social (e.g., promotion; Tritschler & Steiner, 2005). Procedural justice refers to the
perceived fairness of the procedures used to make decisions. It is maintained by making decisions
in a consistent, accurate, and unbiased manner (Colquitt & Greenberg, 2003). Interactional justice
refers to the perceived fairness of how organizational decision-makers enact decisions, and
consists of two components (interpersonal and informational). The interpersonal component is
promoted with dignified and respectful treatment, whereas the informational one is maintained
with adequate and honest explanations (Colquitt & Greenberg, 2003). This is supported by Bies
and Moag’s (1986) criteria for fair interpersonal treatment; in order to be considered just, there
should be respect (courteousness), truthfulness (candid, honest communication), justification
(explanation of decisions), and propriety (avoidance of improper remarks or statements). It has
been suggested that interpersonal justice affects one’s reactions to decision outcomes, whereas
informational justice alters one’s reactions to procedures (Colquitt, Conlon, Wesson, Porter, &
Ng, 2001).

Interactional justice refers to the interpersonal side of organizational practices, focusing
on management’s interpersonal treatment of and communication with employees (Cohen-Charash
& Spector, 2001). Specifically, it focuses on the sensitivity and concern shown to individuals
when distributing the outcomes they receive or enacting organizational procedures (Folger &
Baron, 1996). It also refers to whether persons in authority (i.e., one’s supervisor) treat others
with dignity, respect, and courtesy (Bradfield & Aquino, 1999; Folger & Baron, 1996). Fair
interpersonal treatment is defined as “sincere communication between the supervisor and the
employee and interacting with individuals in a polite and respectful manner” (Tritschler &
Steiner, 2005, p. 15). Examples of unjust interpersonal treatment are disregarding the feelings,
needs and desires of others, or treating someone in an inconsiderate or unfriendly manner
(Mikula, Petri, & Tanzer, 1990). It is not surprising that Burnfield et al. (2004) found perceptions of incivility, especially those related to abusive supervision, to be negatively associated with perceptions of interpersonal justice.

Psychological reactions to interactional justice include increased job satisfaction and affective commitment and decreased turnover intentions (Cohen-Charash & Spector, 2001). Perceptions of stress are also affected by the interpersonal and informational components of interactional justice (Judge & Colquitt, 2004). Specifically, Judge and Colquitt (2004) found that perceived stress had a stronger relationship with interpersonal justice than with informational justice.

*Interactional justice and CWB.* In a study of workplace aggression episodes, Glomb (2002) found that 89% of respondents cited unjust behavior as leading to aggressive behavior. Furthermore, perceptions of organizational injustice (distributive, procedural, and interpersonal) have been shown to be associated with reports of being the target of aggression ($r = .36$) and having engaged in aggression ($r = .21$; Glomb & Liao, 2003). Interactional justice has been found to be associated with general counterproductive behavior ($r = .21$, Marcus & Schuler, 2004). Similarly, O’Brien and Vandello (2005) found that perceptions of organizational justice were related to an overall measure of CWB. However, Aquino, Lewis, and Bradfield (1999) found that perceptions of interactional justice were a stronger predictor of both organizational and interpersonal deviance than either distributive or procedural justice. Similarly, in their meta-analysis of organizational justice, Colquitt et al. (2001) found that interpersonal and informational justice were the two strongest predictors of negative employee reactions, such as theft and organizational retaliatory behaviors (corrected mean correlations of -.35 and -.33, respectively). In contrast, perceptions of procedural and distributive justice were the third and fourth strongest predictors of negative reactions (corrected mean correlation of -.31 and -.30, respectively).
Perceptions of interactional injustice have been shown to be associated with organizational retaliatory behavior (ORB; Skarlicki & Folger, 1997; Skarlicki, Folger, & Tesluk, 1999). In addition, Skarlicki and Folger (1997) found that at high levels of interactional justice (i.e., perception that supervisor is courteous and respectful), employers are more tolerant of a combination of distributive (e.g., inequitable bonuses) and procedural injustice (i.e., inconsistent compensation scales).

In their study of retaliation in the workplace, Kickul, Neuman, and Parker (1999) found that interactional injustice was related to anticitizenship behavior, or negative and destructive actions and tactics used by employees (e.g., avoiding work, talking back to the supervisor, or interfering with someone doing his job). Furthermore, when examining the role of injustice in workplace sabotage, Ambrose, Seabright, and Schminke (2002) found that respondents cited retaliation as the main goal when the primary cause of injustice was interactional. Saboteurs were equally likely to target both the individual and the organization. Similarly, Aquino et al. (1999) found that interactional injustice was associated with both interpersonal and organizational deviance. The relationship of interactional justice with interpersonal deviance was stronger than that with organizational deviance. In contrast, Aquino, Galperin, and Bennett (2004) found that interactional injustice was related to organizational deviance, but not interpersonal deviance. Furthermore, Aquino, Galperin, et al. (2004) found that the relationship between interactional justice and organizational deviance was stronger for employees with low hierarchical status (i.e., line staff) than those with high hierarchical status (i.e., managers and supervisors).

Perceptions of interpersonal injustice have also been related to aggression against one’s supervisor and the organization (Inness & Barling, 2002). Aquino et al. (1999) suggested that retaliating against the organization is a way of getting back at one’s supervisor without incurring future retribution. However, Inness, Barling, and Turner’s (2005) study of supervisor-targeted aggression in employees with two jobs showed that perceptions of interactional justice were
associated with aggression only towards the source (supervisor) of injustice. That is, injustice from the first job was related only to aggression towards the supervisor of the first job, whereas injustice from the second job was associated only with aggression towards the supervisor of the second job. Similarly, Day and Hamblin (1964) found that punitive supervision was related to verbal aggression towards the supervisor, and not coworkers.

Baron et al. (1999) also examined the effect of an individual’s perception of fair treatment from one’s supervisor on subsequent workplace aggression. Respondents’ perceptions of injustice were related to reports of having been the victim of workplace aggression and having aggressed against both the supervisor and the organization. Participants also reported that they would target an immediate supervisor or coworker most frequently, followed by subordinates, and then the organization. Perceived injustice was related most strongly to expressions of hostility, followed by obstructionism and overt aggression.

Organizational Constraints

Organizational constraints are “situations or things that prevent employees from translating ability and effort into high levels of job performance” (Spector & Jex, 1998, p. 357). Peters and O’Connor (1988) defined eleven sources of organizational constraints: job related information; budgetary support; required support; materials and supplies; required services and help from others; task preparation; time availability; work environment; scheduling of activities; transportation; and job-relevant authority. Performance may be inhibited due to the unavailability, poor quality, or inadequacy (or some combination thereof) of a constraint source (Jex, 2002).

Narayanan et al. (1999a) asked employees holding comparable jobs (i.e., clerical) in the United States and India about incidents at work that had been stressful for them. Equipment/situational constraints were the third most cited source of stress for Indian respondents; however, none of the incidents reported by American participants contained constraints as a source of stress. Similarly, Liu (2003) examined job stressors and strains
experienced by employees with comparable jobs (university professors and administrative support staff) in America and China. Organizational constraints, interpersonal conflict, and workload were the most frequently reported stressors for both American and Chinese employees. For American employees, constraints and workload tied as the most frequently reported stressor, whereas conflict and autonomy (i.e., lack of control) tied as the second most cited source of stress. In contrast, constraints were the most frequently reported stressor for Chinese employees, followed by conflict and workload as the second and third most cited sources of stress, respectively. American employees experienced significantly more organizational constraints than Chinese ones.

Liu (2003) also divided constraints into two forms: interpersonal and job context. Interpersonal constraints are comprised of issues related to one’s supervisor; other employees; inadequate help from others; and interruptions from other people. In contrast, job context constraints consist of issues related to conflicting job demands; lack of necessary information about what or how to do tasks; inadequate training; incorrect instructions; poor equipment or supplies; lack of equipment or supplies; and organizational rules and procedures. Liu found that American employees experienced significantly more interpersonal constraints than Chinese ones. There were no significant differences between American and Chinese employees for job context constraints.

Reactions to organizational constraints include negative emotions (Fox et al., 2001) and other feelings such as anger (Chen & Spector, 1991), anxiety, frustration (Spector et al., 1988), and being upset (e.g., discouraged, frightened, furious, and gloomy; Spector et al., 2006). Other psychological strains are perceptions of stress (Chen & Spector, 1991), job dissatisfaction, and intent to quit (Spector et al., 1988). Physical strains include physical symptoms and doctor visits (Spector et al., 1988). Work-related strains include absenteeism (Chen & Spector, 1991), turnover
(O’Connor, Peters, Pooyan, Weekley, Frank, & Erenkrantz, 1984), and performance decrements (Spector et al., 1988).

**Organizational constraints and CWB.** Organizational constraints have been associated with an overall measure of CWB ($r = .36$) in addition to organizational ($r = .37$) and personal ($r = .26$) forms (Fox & Spector, 1999). Constraints have also been related to other dimensions of CWB (Spector et al., 2006), specifically abuse ($r = .32$), production deviance ($r = .23$), sabotage ($r = .19$), theft ($r = .15$), and withdrawal ($r = .18$).

Goh et al. (2003) examined the relationship between constraints and CWB, using both self- and peer-reports. Self-reports of constraints were related to self-reports of organizational and personal CWB. Peer-reports of constraints were associated with organizational and personal CWB as reported by self and peers. Constraints were more strongly related to organizational CWB than personal CWB for both self-reports (self-self) and peer-reports (peer-peer). In contrast, constraints were more strongly associated with personal CWB than organizational CWB when constraints were peer-report and CWB was self-report.

**Workload**

Workload represents the volume of work required of an employee (Spector & Jex, 1998). Work overload can be quantitative or qualitative in nature (French & Caplan, 1973). Quantitative overload occurs when an individual has too much to do during a time period, whereas qualitative overload occurs when job tasks are too difficult for the employee.

In their study of stressful incidents at work in a sample of engineers, Keenan and Newton (1985) found that qualitative workload (too difficult vs. low level) and quantitative workload (too much or too little to do in a given time period) were the third and fourth most cited sources of stress. Liu (2003) examined job stressors and strains experienced by employees with comparable jobs (university professors and administrative support staff) in America and China. Workload and
constraints tied as the most frequently reported stressor for American participants. In contrast, workload was the third most cited source of stress for Chinese respondents.

Reactions to workload include negative emotions (Miles et al., 2002) and other feelings such as anger (Chen & Spector, 1991) and frustration (Spector & O’Connell, 1994). Other psychological strains are depression (Fortunato, Jex, & Heinish, 1999), perceptions of stress (Chen & Spector, 1991), work anxiety (Spector & O’Connell, 1994), job dissatisfaction (Spector, 1987), and intent to quit (Spector et al., 1988). Workload also has been related to physical strains such as physical symptoms (Spector et al., 1988) and doctor visits (Chen & Spector, 1991).

Regarding work-related strains, supervisors’ ratings of incumbents’ workload have been shown to be associated with their ratings of the incumbents’ job performance (Spector et al., 1988).

**Workload and CWB.** Workload has been associated with an overall measure of CWB ($r = .21$; Miles et al., 2002) and the hostility and complaints ($r = .13$) dimension of CWB (Chen & Spector, 1992).

*The Effects of Individual Differences in the Occupational Stress Process and on CWB*

“Individual differences have an impact on both the perception of stressors and the reactions to these stressors” (Jex, 1998, p.8). This is because there exists a certain amount of ambiguity in the job situation that allows people to interpret the context according to their (cognitive and affective) dispositions (Staw & Ross, 1985). Individual differences in attributional style (i.e., hostile attribution style) and affective dispositions (i.e., trait anxiety/NA and trait anger) have been related to the perception of and reactions to job stressors (Fox et al., 2001; Harvey & Martinko, 2005). Although the influence of Machiavellianism on the occupational stress processes has not been examined, it is likely that the characteristics (i.e., cynicalness and distrustfulness; Christie & Lehmann, 1970; Geis, Christie, & Nelson, 1970) of these individuals will affect their appraisals of and reactions to job stressors. Individuals high on Machiavellianism, trait anxiety/NA, and trait anger appear disparate initially, however, they share, with individuals...
high on hostile attribution style, the core tendency to appraise the job environment in a negative fashion (Christie & Lehmann, 1970; Epps & Kendall, 1995; Speilberger, 1983, 1999; Watson & Slack, 1993). Moreover, hostile attributional style, Machiavellianism, trait anxiety/NA, and trait anger have all been associated with the tendency to commit CWB (Fox et al., 2001; Giacalone & Knouse, 1990; O’Brien & Vandello, 2005).

**Hostile Attribution Style (HAS)**

Regarding intentionality, the field of aggression research (general and workplace) has focused mainly on the actual intent of the instigator. However, it is the intent (or lack of intent) perceived by the target that affects whether he or she responds aggressively. Innocent behaviors or actions may be misperceived as hostile, malevolent, or aggressive, whereas actual hostile behaviors may be interpreted as benign or accidental, or they may not be noticed at all (Neuman & Baron, 2005).

Attributions refer to the perceptions of the reasons behind others’ behavior (Baron, 1996). A hostile attribution is a judgment that the person responsible for a provoking event acted out of hostility or ill will (Homant & Kennedy, 2003). A hostile attribution style (HAS), or bias, refers to “an individual’s tendency to perceive a neutral or ambiguous stimulus as threatening or hostile when in reality it is not” (Williams, Lochman, Phillips, & Barry, 2003, p. 568). This hostile perception style is linked with the tendency to select aggressive behaviors as the appropriate response to perceived provocation (Dill, Anderson, Anderson, & Deuser, 1997).

Epps and Kendall (1995) studied hostile attribution style in adults. As found in previous research with children and adolescents (e.g., Dodge, 1980), participants inferred hostile intent in ambiguous situations. However, hostile attribution style was also found in clearly hostile and clearly benign situations. Based on these results, Epps and Kendall suggested that future research on hostile attribution style should not be restricted only to ambiguous situations.
Nickel (1974) investigated the relationship between attributed intent and aggression in a laboratory study, and found that subjects retaliated against others with high shocks when they believed that the others intended to harm them. Retaliation with high shocks occurred regardless of how much the subject was actually harmed (i.e., shocked) by the other. In another study of attack-instigated aggression, Ohbuchi and Oku (1979) suggested that an individual’s counter-aggression is determined by the maliciousness of the intent he attributes to the instigator. However, even attributions of hostile intent in a chance situation are related to an aggressive response (Lovas, Frankovsky, & Baumgartner, 1994). For example, Lovas et al. (1994) found that participants who evaluated the behavior of another in an incident of chance content (i.e., unintentional damage done by one person to another) as hostile were significantly more likely to respond with aggression than those who interpreted the behavior as non-hostile.

VanOostrum and Horvath (1997) investigated the effects of attributions on adolescents’ aggressive responses in dyadic social interactions where the intent of the antagonist was ambiguous. Specifically, they examined the influence of perceptions of hostile intentions, harm, and importance on aggressive behavior and level of aggressive responses. Of the three perceptions aforementioned, attribution of hostile intent was the only variable that significantly predicted both the aggressive reaction and the level of aggressiveness displayed. Orobio de Castro, Veerman, Koops, Bosch, and Monshouwer (2002) meta-analyzed the relationship between hostile attribution of intent and aggression, and found a weighted mean correlation of .17 between hostile attribution style and general aggressive behavior. In addition, indirect support for the effect of hostile attribution on aggression can be found in Hudley and Graham’s (1993) study of aggressive children. They created a program aimed at reducing perceptions of intent and responsibility for a hostile act that was ambiguous in intent. Reduction of perceptions of hostile intent was shown to lessen both aggressive response and anger experienced.
HAS and CWB. Homant and Kennedy (2003) examined the effect of hostile attribution style on employees’ justification of workplace aggression. They found that participants’ hostile attribution style predicted their support for workplace aggression in both ambiguous and definite (i.e., unambiguous) situations. Homant and Kennedy defined hostile attribution style as the tendency to attribute hostile intent to others in situations that don’t warrant it. Douglas and Martinko (2001) examined the role of attribution style in workplace aggression, and found that employees with a hostile attribution style had a higher rate of aggression than those with a weaker tendency to attribute hostile intent. Hostile attribution style was defined as the tendency to attribute causality of negative workplace events to other employees or the organization, and to believe that these negative outcomes result from external, stable, controllable, and intentional causes. Douglas and Martinko found a strong relationship \( (r = .60) \) between attribution style and incidence of workplace aggression. In a replication and extension of Douglas and Martinko’s (2001) study, Hepworth and Towler (2004) found that hostile attribution style was associated with aggressive workplace behaviors \( (r = .24) \) for a sample of employees from a wide range of occupations.

O’Brien and Vandello (2005) found that work hostile attribution style was associated with self-reports of CWB \( (r = .30) \). There was a non-significant correlation between work hostile attribution style and peer-reports of CWB, although it was in the direction hypothesized. Moreover, O’Brien and Vandello found that work hostile attribution style contributed unique variance to the prediction of CWB over and beyond that explained by neuroticism or negative affect.

Aquino, Douglas, and Martinko (2004) examined the moderator role of hostile attribution style on the relationship between outward expressions of anger in the workplace and perceived victimization, which is an “an employee’s perception of having been the target of harmful actions emanating from one or more coworkers” (Aquino, Douglas, et al., 2004, p. 152). The individual
perceives that s/he has been exposed, either momentarily or repeatedly, to these aggressive acts (Aquino & Bradfield, 2000). Perceived victimization can take direct (e.g., name-calling) or indirect (e.g., sabotaging work) forms. Aquino, Douglas, et al. (2004) found that hostile attribution style was associated with outward expressions of anger in the workplace and perceived victimization (both direct and indirect forms). Moreover, hostile attribution style moderated the relationship between direct perceived victimization and overt anger. Specifically, the relationship between direct victimization and overt expressions of anger was stronger for employees with hostile attribution styles than those with a weaker tendency to make hostile attributions.

Machiavellianism

Machiavellians are cold, amoral, and possess a covertly aggressive willingness and ability to manipulate others (Geis, Christie, & Nelson, 1970). Furthermore, they are power oriented, guileful, critical, and distrustful of people in general. Machiavellians are cynical, possessing a negative view of the world and the nature of man (Christie & Lehmann, 1970). Given their belief that other people are lazy, vicious, and untrustworthy, they are always questioning their motives (Geis et al., 1970).

Machiavellianism and CWB. Individuals high on Machiavellianism tend to demonstrate more aggressive behaviors (Repacholi, Slaughter, Pritchard, & Gibbs, 2003; Russell, 1974; Touhey, 1971). Similarly, McHoskey (1999) found that Machiavellianism was associated with self-reported antisocial behavior in a sample of undergraduate students. Furthermore, high Machiavellians are more likely to retaliate in response to aggressive behavior than low ones (Lake, 1967).

Giacalone and Knouse (1990) examined employees’ justification for organizational sabotage and found that individuals high on Machiavellianism and hostility showed greater justification for sabotage methods related to information manipulation and control. Examples of behaviors endorsed are spreading rumors, altering or deleting data, and placing false orders. Other
research on workplace aggression has found that Machiavellianism was associated with both interpersonal \((r = .39)\) and organizational \((r = .26)\) deviance (Bennett & Robinson, 2000).

*Machiavellianism and HAS.* High Machiavellians are more suspicious of others (Edelstein, 1966) and tend to rate them as being less trustworthy (Christie, Gergen, & Marlowe, 1970) than individuals low on Machiavellianism. Due to their cynical nature, Machiavellians may be more likely to perceive malevolent intent in the actions of others. For example, Repacholi et al. (2003) found that children high on Machiavellianism attributed more negative intent to the actions of another in ambiguous situations. Furthermore, high Machiavellians were more likely to predict negative outcomes (e.g., arguments) from the ambiguous situations than those low on Machiavellianism.

**Negative Affectivity (NA)**

Trait anxiety represents the tendency to perceive a wide range of situations as threatening or dangerous, and to respond to these situations with increased state anxiety (Spielberger, 1983). Individuals high on trait anxiety are hyper-responsive primarily to psychosocial threats (Spielberger, 1972). Therefore, high trait anxious individuals are more likely to experience an elevation in state anxiety in response to situations that involve interpersonal relationships (i.e., psychosocial stressors) or that threaten self-esteem. However, even a relatively benign situation may be interpreted as a threat to one’s self-esteem and well-being by an individual high on trait anxiety (Spector, 2003).

Watson and Clark (1984) expanded the construct of trait anxiety by including more general negative emotions and relabeled it as negative affectivity (NA). Individuals high on NA tend to report higher levels of negative affect across time and situations. Negative mood states that high NA individuals tend to experience are anger, anxiety, distress, fear, guilt, nervousness, sadness, and rejection (Watson & Clark, 1984; Watson, Clark, & Tellegen, 1988). Individuals high on NA are nonconformists, distrustful, hostile, distant, or demanding, and are sensitive to
minor irritations, frustrations, and failures (Watson & Clark, 1984). High NA individuals are negativistic, focusing on the negative side of others and the world (Watson & Slack, 1993). Given their cognitive and affective tendencies, it is likely that high NA employees perceive and experience the job negatively, regardless of actual environmental conditions (Watson, Pennebaker, & Folger, 1986).

NA and CWB. Employees’ level of NA is related to their workplace aggressive behaviors (Douglas & Martin, 2001; Hepworth & Towler, 2004). Aquino et al. (1999) found that NA was related to both organizational and interpersonal forms of deviance. NA has been associated with an overall measure of CWB ($r = .36$), in addition to organizational ($r = .40$) and personal ($r = .20$) forms (Fox & Spector, 1999). NA also has been related to other dimensions of CWB such as work avoidance, work sabotage, abusive behavior, threats, and overt acts (Fox, Spector, & Miles, 1999).

The effect of NA on the relationship between stressors and CWB. NA has been shown to moderate the relationship between interpersonal conflict and CWB (Penney, 2002). The relationship between conflict and CWB was stronger for high NA individuals than those low on NA. The moderator effect of NA on conflict held when CWB was broken into organizational and personal forms.

Penney (2002) also found that NA moderated the relationship between incivility and CWB, such that the relationship between the two variables was stronger for high NA individuals than those low on NA. Individuals high on NA reported more CWB when incivility was high than when incivility was low. Incivility did not affect CWB for low NA individuals; individuals low on NA engaged in low levels of CWB regardless of level of incivility. The moderator effect of NA on incivility held when CWB was broken into organizational and personal forms. Similarly, Burnfield et al. (2005) found that NA moderated the relationship between three dimensions of customer incivility (customer frustration, condescension, and insults) and interpersonal deviance.
NA also moderated the relationship between two dimensions of incivility (condescension and frustration) and organizational deviance. For both interpersonal and organizational deviance, the relationship between incivility and deviance was positive for high NA individuals, whereas there was no relationship between the two for individuals low on NA.

NA has been shown to moderate the relationship between perceived injustice and organizational retaliatory behaviors (i.e., CWB; Skarlicki et al., 1999). Specifically, Skarlicki et al. (1999) found that the combination of low interactional justice and low distributive justice was related to organizational retaliatory behavior for high NA individuals. In contrast, the interaction between interactional and distributive justice was not a significant predictor of retaliatory behaviors for individuals low on NA. Relatedly, Aquino et al. (1999) found that negative affectivity contributed unique variance to the prediction of interpersonal deviance over and above that explained by interactional justice.

Penney and Spector (2005) found that NA moderated the relationship between organizational constraints and CWB. The relationship between constraints and CWB was stronger for high NA individuals than those low on NA. Similarly, Fox et al. (2001) found that NA moderated the relationship between organizational constraints and personal CWB. Higher constraints were associated with higher personal CWB for individuals high on NA.

**NA and HAS.** Researchers have suggested that individuals high on NA are more likely to possess a hostile attribution style, and that the tendency to make hostile attributions may lead to increased conflict, anger, and aggression for high NA individuals (Homant & Kennedy, 2003; Martinko & Zellars, 1998). Homant and Kennedy (2003) found that NA was related to hostile attribution style ($r = .23$). Similarly, NA was associated with work hostile attribution style ($r = .31$; O’Brien & Vandello, 2005).
Trait Anger

Trait anger represents the tendency to perceive a variety of situations as annoying, frustrating, or provocative, and to respond to these situations with increased anger (Spector, 2003; Spielberger, 1999). Individuals high on trait anger often feel that they are treated unfairly by others and are likely to experience a great deal of frustration. In addition, high trait anger individuals experience state anger more often and with greater intensity than individuals low on trait anger.

Trait anger can be divided into two factors: angry temperament (T-Ang/T) and angry reaction (T-Ang/R; Spielberger, 1999). Individuals high on T-Ang/T readily express their angry feelings with little provocation, and often lack anger control. Individuals high on T-Ang/R are highly sensitive to criticism, and tend to experience intense anger in response to negative evaluation by others or perceived affronts.

Trait anger and CWB. Employees’ level of trait anger is related to their workplace aggressive behaviors (Douglas & Martinko, 2001; Hepworth & Towler, 2004). Trait anger has been associated with an overall measure of CWB (r = .59), in addition to organizational (r = .57) and personal (r = .50) forms (Fox & Spector, 1999). Fox and Spector (1999) found that both angry temperament (T-Ang/T) and angry reaction (T-Ang/R) were related to an overall measure of CWB (r = .43 and .48, respectively). In addition, T-Ang/T was more strongly associated with personal CWB (r = .42) than organizational CWB (r = .39). In contrast, T-Ang/R was more strongly related to organizational CWB (r = .48) than personal CWB (r = .36).

The effect of trait anger on the relationship between stressors and CWB. Fox et al. (2001) found that trait anger moderated the relationship between interpersonal conflict and personal CWB. Higher interpersonal conflict was associated with higher personal CWB for individuals high on trait anger.
Trait anger and HAS. Epps and Kendall (1995) found that an individual’s tendency to make attributions of hostile intent was related to his/her level of trait anger. Recently, Hazebroek, Howells, and Day (2001) examined how trait anger affects people’s cognitive processing of a provoking event. They found that individuals high on trait anger had greater tendencies to identify another person as an antagonist, to blame the antagonist, to identify the negative situation as being relevant to their own interests, and to respond with greater anger. In addition, high trait anger individuals tended to experience greater anger when the intent of the provocative situation was ambiguous; the anger intensity was close to that experienced in response to deliberate provocation. Trait anger has been related to work hostile attribution style ($r = .25$; O’Brien & Vandello, 2005).

The Current Study

Spector and Fox (2005) suggested that individual differences influence one’s perception, emotional responsiveness, and behavioral reactions to job stressors. Three potential areas where attributional style (i.e., hostile attribution style) might affect the processes linking job stressors and CWB were identified. The following is a brief discussion of each.

The appraisal of job stressors. Individual differences affect a person’s sensitivity, or vulnerability, to certain events in addition to his or her interpretation and reactions (Lazarus & Folkman, 1984). Moreover, the effect of individual differences on how events are appraised is amplified under conditions of ambiguity (Lazarus & Folkman, 1984). It has been suggested that the effect of individual differences on appraisal is stronger for “job stressors that involve aspects of the more abstract social environment rather than the more concrete and objective physical environment” (Spector, 2003, p. 34). Therefore, the appraisal of psychosocial stressors should be influenced more by individual differences than nonsocial stressors. For example, trait anxiety has been shown to have a stronger relationship with stressors that have an interpersonal component (i.e., interpersonal conflict) than with more objective stressors such as workload (Spector, 2003).
Incivility, interactional justice, and interpersonal conflict are all psychosocial stressors that involve perceptions of interpersonal mistreatment; however, the perceived (benign, benevolent, or malevolent) intent of the instigator varies with each. For example, the underlying motive of incivility is ambiguous, whereas there is clear hostile intent with interpersonal conflict (Penney & Spector, 2005). Hostile attribution style represents the tendency to infer hostile intent in neutral and ambiguous situations (Williams et al., 2003). Individuals with a hostile attribution style are more likely to interpret ambiguous or slightly negative information as threatening. Therefore, hostile attribution style should be more strongly related to psychosocial stressors (i.e., incivility, interactional justice, and interpersonal conflict) than nonsocial ones such as organizational constraints. However, organizational constraints can also be separated into social (interpersonal constraints) and nonsocial (job context constraints) forms (Liu, 2003). Inadequate help from others (e.g., coworkers) is an example of an interpersonal constraints source, whereas poor equipment or supplies is an example of a job context constraints source. Given that interpersonal constraints are due to aspects of the abstract social environment, and that job context constraints reflect aspects of the objective physical environment, hostile attribution style should be more strongly related to interpersonal constraints than to job context constraints. It was expected that the relationship of hostile attribution style with psychosocial (ambiguous) stressors would be stronger than that with nonsocial (unambiguous) stressors. Therefore, the following hypothesis was proposed:

**Hypothesis 1:** Hostile attribution style will be more strongly related to psychosocial stressors (i.e., incivility, interactional justice, and interpersonal conflict) than to nonsocial stressors (i.e., organizational constraints and workload).

**Hypothesis 1a:** Hostile attribution style will be more strongly related to interpersonal constraints (social) than to job context constraints (nonsocial).
The link between job stressors and CWB. Hostile attribution style is associated with the tendency to attribute hostile intent in benign, ambiguous, and clearly hostile situations (Epps & Kendall, 1995). In addition, it has been related to attributions of hostile intent in negative social interactions (Lovas et al., 1994; VanOostrum & Hovarth, 1997). Individuals with a strong tendency to attribute hostile intent have a higher incidence of workplace aggression than those with a weaker tendency to make hostile attributions (Douglas & Martinko, 2001). Moreover, individuals with a hostile attribution style have a greater tendency to respond to perceived aggressive events (i.e., perceived victimization, an individual’s perception that s/he has been the target of harmful actions from another employee; Aquino & Bradfield, 2000; Aquino, Douglas, et al., 2004) with aggression (Aquino, Douglas, et al., 2004). Incivility, interactional justice, and interpersonal conflict all involve perceptions of mistreatment; they refer to negative social interactions where the intent of the “instigator” is not necessarily evident. It was expected that individuals with a strong tendency to attribute hostile intent would be more likely to respond to perceived mistreatment with CWB than those with a weaker tendency to make hostile attributions. However, individuals with a hostile attribution style also have the tendency to attribute hostile intent in benign, or unambiguous, situations. Therefore, it is possible that these individuals might attribute hostile intent to the source of an organizational constraint (e.g., the organization itself, a supervisor, or coworkers) and to respond with CWB. It was expected that individuals with a hostile attribution style would be more likely to respond to job stressors with CWB than those with a weaker tendency to make hostile attributions. Therefore, the following hypothesis was proposed:

Hypothesis 2: Hostile attribution style will moderate the relationship between job stressors (incivility, interactional justice, interpersonal conflict, organizational constraints, and workload) and CWB.
Hypothesis 2a: The relationship between job stressors (incivility, interactional justice, interpersonal conflict, organizational constraints, and workload) and CWB will be stronger for individuals with a stronger tendency to make hostile attributions than those with a weaker tendency to attribute hostile intent.

The link between other individual difference variables with negative perceptual tendencies and CWB. Machiavellianism, NA, and trait anger all share the core tendency to perceive and/or appraise the environment in a negative fashion. There are some similarities amongst these three variables. However, there are also distinct differences in terms of the cognitive and affective tendencies associated with each. Regardless, all three seem to converge in their influence on an individual’s attributional tendencies. The following is a brief discussion of the linkages amongst Machiavellianism, NA, trait anger, and hostile attribution style.

Although different terms are used to characterize Machiavellians and individuals high on NA, they have some tendencies in common. Machiavellians are described as being cold, whereas high NA individuals are described as being distant. Both terms describe an unfriendly and remote manner of interacting with others. In addition, Machiavellians are described as being cynical (Christie & Lehmann, 1970), whereas high NA individuals are described as being negativistic (Watson & Slack, 1993). As a result, both share a negative view of other people and the world. Both also are distrustful (Geis et al., 1970; Watson & Clark, 1984), questioning the motives of others. However, individuals high on Machiavellianism differ from those high on NA (and trait anger) in terms of their emotional detachment (Geis & Christie, 1970). They are not emotionally involved in their interactions with other people and, thus, are not affected by psychosocial threats (i.e., negative social information).

NA and trait anger are similar in that persons high on these affective dispositions are sensitive to social information and experience negative emotions as a result of their negative perceptual tendencies. For example, high NA individuals tend to experience anxiety in response
to their interactions with other people (Spielberger, 1972). Similarly, high trait anger individuals tend to experience anger in response to perceived intentional slights, insults, or offenses (Spielberger, 1999). In addition, both tend to perceive stressful, psychosocial situations in a negative fashion (Spielberger, 1983). For example, high NA individuals tend to perceive situations as threatening or dangerous (Spielberger, 1983), whereas high trait anger individuals tend to perceive situations as annoying, frustrating, or provocative (Spector, 2003; Spielberger, 1999).

Machiavellianism, NA, and trait anger all have a negative cognitive orientation (i.e., negative perceptual tendency) as a common denominator. However, empirical evidence regarding the linkages amongst the three variables is mixed. There is weak empirical support for the relationship between Machiavellianism and NA. For example, Machiavellianism (as measured with the Mach IV, Christie & Geis, 1970) was associated with NA in two separate studies (Christie, 1970; Nigro & Galli, 1985). However, social desirability affects people’s responses to the Mach IV (Christie & Geis, 1970), so Christie and Geis (1970) reassessed the relationship between the two variables using the Mach V (Christie & Geis, 1970). The Mach V is not affected by social desirability, and the relationship between Machiavellianism and NA became non-significant. I could not locate any empirical studies linking Machiavellianism with trait anger.

The lack of evidence regarding the relationship between Machiavellianism and affective disposition (i.e., NA and trait anger) is not surprising, given the emotional detachment of high Machiavellians (Geis & Christie, 1970). However, there is empirical support for the relationship between NA and trait anger. Correlations between the two variables range in magnitude from .23 to .46 (Douglas & Martinko, 2001; Fox et al., 2001; Fox & Spector, 1999; Hepworth & Towler, 2004; O’Brien & Vandello, 2005). In addition, Fox and Spector (1999) found that NA was associated with the angry temperament (T-Ang/T) and angry reaction (T-Ang/R) factors of trait anger ($r = .16$ and .33, respectively).
The negative cognitive orientation of Machiavellians and individuals high on NA and trait anger appears to influence their attributional style. Specifically, research has shown that high Machiavellian, NA, and trait anger individuals have a stronger tendency to make attributions of hostile intent. For example, high Machiavellians have been shown to attribute negative intent to the actions of others in ambiguous situations (Repacholi et al., 2003). In addition, NA and trait anger have both been related to hostile attribution style (O’Brien & Vandello, 2005).

Cognitive styles associated with individual differences affect a person’s perception of situations (Cantor, 1990). An individual’s attribution style (i.e., hostile attribution style) affects his appraisal of an ambiguous situation (Segovis et al., 1985). However, individuals with a tendency to make hostile attributions “may continually interpret a wide range of otherwise innocent social behaviors as threatening and provocative, and may consistently react to such behaviors as if they had been justifiably provoked” (Topalli & O’Neal, 2003, p. 169).

Aggression that is in response to behavior that is perceived as provocative is known as hostile, or reactive, aggression (Dodge & Coie, 1987; Neuman & Baron, 2005). In contrast, aggression that is used as a way of obtaining some desired end is known as instrumental, or proactive, aggression (Dodge & Coie, 1987; Neuman & Baron, 2005). Dodge and Coie (1987) found that hostile attribution style was related to reactive aggression (i.e., CWB) and not proactive aggression. They suggested that reactive, or retaliatory, aggression is a defense reaction to a perceived threatening stimulus (i.e., job stressor) and a way to relieve the perceived threat (i.e., coping behavior; see Lazarus & Folkman, 1984). This complements Penny and Spector’s (2005) supposition that CWB is used by some individuals (e.g., those high on NA) as a way of coping with job stressors.

It has been suggested that attributional processes mediate the relationship between individual difference variables and CWB (Martinko, Gundlach, & Douglas, 2002). For example, Dodge (1985) proposed that individuals who are predisposed towards a negative affective state
Machiavellianism, NA, and trait anger are related to an individual’s tendency to make attributions of hostile intent (O’Brien & Vandello, 2005; Repacholi et al., 2003), and hostile attribution style is associated with the tendency to commit CWB (Douglas & Martinko, 2001; O’Brien & Vandello, 2005). In addition, Machiavellianism, NA, trait anger, and hostile attribution style all have been directly related to CWB (Bennett & Robinson, 2000; Fox & Spector, 1999; O’Brien & Vandello, 2005). Given the linkages amongst these variables, the following hypothesis was proposed:

**Hypothesis 3:** Hostile attribution style will mediate the relationship between individual difference variables with negative perceptual tendencies (i.e., Machiavellianism, NA, and trait anger) and CWB.

**Summary.** To summarize, the main objective of the current study was to examine the influence of hostile attribution style on the processes that link job stressors with CWB. Three areas were evaluated: the appraisal of job stressors, the link between job stressors and CWB, and the link between other individual difference variables with negative perceptual tendencies and CWB. The other purpose of this study was to explore the influence of Machiavellianism on the processes linking job stressors and CWB. Machiavellianism has been associated with CWB (Bennett & Robinson, 2000). However, its role in the occupational stress process has not been examined yet. Given Machiavellians’ cynical nature (Geis et al., 1970), it was expected that they would appraise and respond to stressors in a negative fashion. No other hypotheses were generated regarding Machiavellianism as it was included in this study for exploratory purposes.

In general, research on attributional style (i.e., hostile attribution style) has been limited to single source participant reports. The use of self-report data is an efficient means of assessing individual perceptions and personality. However, data gathered with a cross-sectional, self-report methodology may be affected by some unmeasured third variable, inflating the observed
relationships (Lee, 1993). For example, the observed relationships might be due to biases shared across measures, response sets, or unrecognized personal characteristics (Spector & Fox, 2005). All the individual difference variables included in this study involve negative perceptual tendencies. For example, hostile attribution style reflects the tendency to perceive hostile intent in others’ actions. It is possible that this negative perceptual tendency might affect relationships amongst perceived stressors and resulting experienced strains (e.g., CWB). Therefore, in attempt to integrate another, more objective source of data, this study utilized coworker reports of the incumbent’s job stressors and CWB.
Chapter 2 - Method

Participants

Participants were employed persons taking courses at the University of South Florida (USF) and other employed individuals who were invited to participate in the study with snowball sampling. All persons had to work a minimum of 20 hours per week in a single job and be between the ages of 18 and 64 in order to be eligible to participate. Four hundred seventy-one employee surveys (419 USF and 52 snowball) and 180 coworker surveys (154 USF and 26 snowball) were submitted electronically. The overall response rate for coworkers was 38%; it was 37% for USF participants and 50% for the snowball sample. A response rate for the USF sample could not be calculated because it is impossible to know how many eligible students chose not to participate. Similarly, a response rate for the snowball sample could not be calculated because the vary nature of the methodology (i.e., individuals were asked to forward the employee survey link to other people) makes it impossible to know how many eligible individuals who received the employee survey link chose not to participate.

Both employee and coworker surveys were eliminated if they were incomplete (i.e., responses to more than half of the items on the entire survey were missing) or if participants (both employees and coworkers) did not meet the age criterion (18 to 64 years old). Surveys were also eliminated if the participant (employee) had worked in their current job less than two months. Using the above criteria, 44 employee surveys (33 USF and 11 snowball) and 19 coworker surveys (15 USF and 4 snowball) were eliminated from the initial sample, leaving 427 employee surveys (386 USF and 41 snowball) and 161 coworker surveys (139 USF and 22 snowball).
Therefore, 161 dyads of employee and coworker surveys (139 USF and 22 snowball) were available for analysis.

Dyads were excluded from analysis if either the employee or coworker failed to complete the CWB scale in its entirety. Therefore, 14 dyads (12 USF and 2 snowball) were excluded. There were 147 dyads of employee and coworker surveys (127 USF and 20 snowball) in the final sample. Table 1 summarizes the changes in sample size after the exclusion criteria were applied.

Table 1. Summary of Sample Size Changes Due to Exclusion Criteria

<table>
<thead>
<tr>
<th>Surveys submitted electronically</th>
<th>Surveys eliminated due to incompleteness (&gt; half of items on entire survey missing responses), age (&lt; 18 or &gt; 64 years old), or tenure (worked &lt; 2 months)</th>
<th>Surveys remaining from initial sample</th>
<th>Dyads available for analysis</th>
<th>Dyads excluded from analysis due to incomplete CWB scale</th>
<th>Dyads in final sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Employee Surveys]</td>
<td>[Coworker Surveys]</td>
<td>Dyads</td>
<td></td>
<td></td>
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<tr>
<td>USF</td>
<td>Snowball</td>
<td>Total</td>
<td>USF</td>
<td>Snowball</td>
<td>Total</td>
</tr>
<tr>
<td>Surveys submitted electronically</td>
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<td>52</td>
<td>471</td>
<td>154</td>
<td>26</td>
</tr>
<tr>
<td>Surveys eliminated due to incompleteness (&gt; half of items on entire survey missing responses), age (&lt; 18 or &gt; 64 years old), or tenure (worked &lt; 2 months)</td>
<td>33</td>
<td>11</td>
<td>44</td>
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<td>4</td>
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<tr>
<td>Surveys remaining from initial sample</td>
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<tr>
<td>Dyads available for analysis</td>
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<td>22</td>
<td>161</td>
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<td>22</td>
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<td>Dyads excluded from analysis due to incomplete CWB scale</td>
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<td>2</td>
<td>14</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Dyads in final sample</td>
<td>127</td>
<td>20</td>
<td>147</td>
<td>127</td>
<td>20</td>
</tr>
</tbody>
</table>

The final employee sample was predominately female (83%), and 2 individuals did not indicate their sex. Participants ranged in age from 18 to 53 years (mean age = 23.76 years, median age = 22 years). The tenure of employees ranged from 2 months to 296 months (mean tenure = 30.58 months, median tenure = 19 months). Forty-three percent reported working 30 or more hours per week, and 86% described their position as non-managerial.

The final coworker sample also was predominately female (63%), and 2 individuals did not indicate their sex. Coworkers ranged in age from 18 to 59 years (mean age = 28.12 years,
median age = 25 years), and 2 individuals did not indicate their age. No other demographic information was collected from coworkers.

Measures

The employee (self) survey included measures of job stressors (interpersonal conflict, incivility, interactional justice, organizational constraints, and workload), individual differences (hostile attribution style, Machiavellianism, negative affectivity, and trait anger), and counterproductive work behaviors (CWB). The coworker (peer) survey included measures of the employee’s job stressors (interpersonal conflict, incivility, organizational constraints, and workload) and CWB.

Interpersonal conflict. Spector and Jex’s (1998) 4-item Interpersonal Conflict at Work Scale (ICAWS; see Appendix A) was used to measure interpersonal conflict. This summated rating scale assesses how well respondents get along with others at work (e.g., how often respondents get into arguments with coworkers). Response options range from 1 (less than once per month or never) to 5 (several times per day), with high scores representing greater levels of conflict. Spector and Jex (1998) reported a coefficient alpha of .74 for this scale. Alpha for the conflict scale in this study was .76 for self-report, whereas it was .82 for peer-report.

Incivility. Cortina et al.’s (2001) 7-item Workplace Incivility Scale (WIS; see Appendix B) was used to measure incivility. This summated rating scale assesses how often participants experience disrespectful, rude, or condescending behaviors from superiors or coworkers. Response options range from 1 (never) to 5 (every day), with high scores representing greater levels of experienced incivility. Cortina et al. reported a coefficient alpha of .89 for this scale. Alpha for the incivility scale in this study was .91 for self-report, whereas it was .95 for peer-report.

Interactional justice. The interpersonal justice (4-items) and informational justice (5-items) subscales of Colquitt’s (2001) organizational justice measure (see Appendix C) were used
to measure interactional justice. The interpersonal justice items assess Bies and Moag’s (1986) respect and propriety criteria, whereas the informational items assess the truthfulness and justification criteria. Response options range from 1 (to a very small extent) to 5 (to a very large extent), indicating the extent to which an authority figure (e.g., one’s manager) has communicated sincerely with and treated the respondent in a polite and respectful manner. High scores on both subscales represent greater perceived levels of interactional justice. Judge and Colquitt (2004) reported coefficient alphas of .96 for the interpersonal justice subscale and .90 for the informational justice subscale. Alphas for the interpersonal and informational justice subscales in this study were .92 and .90, respectively.

*Organizational constraints.* Spector and Jex’s (1998) 11-item Organizational Constraints Scale (OCS; see Appendix D) was used to measure organizational constraints. This summated rating scale is based on the constraint areas identified by Peters and O’Connor (1980). Participants are asked to indicate how often they find it difficult or impossible to do their job because of each constraint. Response options range from 1 (less than once per month or never) to 5 (several times per day), with high scores representing high levels of constraints. Spector and Jex (1998) reported a coefficient alpha of .85 for this scale. The OCS was divided into two subscales based on Liu’s (2003) factor analysis of the eleven OCS items: interpersonal constraints (4 items) and job context constraints (7 items). Alphas for self-reported interpersonal constraints and job context constraints in this study were .78 and .85, respectively. Peer-reported interpersonal constraints had an alpha of .81, whereas it was .85 for job context constraints. Alpha for the total constraints scale was .90 for self-report and .89 for peer-report.

*Workload.* Spector and Jex’s (1998) 5-item Quantitative Workload Inventory (QWI; see Appendix E) was used to measure workload. This summated rating scale assesses respondents’ perceptions of work in terms of volume and pace. Response options range from 1 (less than once per month or never) to 5 (several times per day), with high scores representing a high level of
workload. Spector and Jex (1998) reported a coefficient alpha of .82 for this scale. Alpha for the workload scale in this study was .89 for both self-report and peer-report.

Hostile attribution style. O’Brien and Vandello’s 10-item (2005) Workplace Hostile Attribution Bias Survey (WHABS; see Appendix F) was used to measure hostile attribution style. The WHABS assesses an individual’s tendency to attribute aggressive characteristics to other people or situations at work. Response options range from 1 (strongly disagree) to 6 (strongly agree), with high scores representing higher levels of hostile attribution style. O’Brien and Vandello reported a coefficient alpha of .72 and a test-retest reliability coefficient of .71. Alpha for the hostile attribution style scale in this study was .79.

Machiavellianism. Bandelli, Kessler, Borman, and Nelson’s 19-item (2006) Organizational Machiavellianism Scale (OMS; see Appendix G) was used to measure Machiavellianism. The OMS assesses the degree to which an individual uses manipulation as a social strategy to achieve his/her desired ends in the context of the work environment. Response options range from 1 (strongly disagree) to 6 (strongly agree), with high scores representing higher levels of Machiavellianism. Bandelli et al. reported a coefficient alpha of .89 for this scale. Alpha for the Machiavellianism scale in this study was .88.

Negative affectivity. The 10-item NA scale from Watson, Clark, and Tellegen’s (1988) Positive and Negative Affect Schedule (PANAS; see Appendix H) was used to measure NA. This scale consists of words that describe negative emotions (e.g., irritable, upset, and scared). Participants are asked to indicate the extent to which they generally feel each emotion, with response options ranging from 1 (very slightly or not at all) to 5 (extremely). High scores indicate high levels of negative affect. Watson et al. (1988) reported a coefficient alpha of .87 and a test-retest reliability coefficient of .71. Alpha for the NA scale in this study was .87.

Trait anger. The 10-item Trait Anger (T-Ang) scale from Spielberger’s (1999) State-Trait Anger Expression Inventory-2 (STAXI-2) was used to measure trait anger. This scale assesses
how often people experience angry feelings over time. Participants are asked to indicate how they “generally feel,” with response options ranging from 1 (almost never) to 4 (almost always). High scores indicate high levels of trait anger. Spielberger (1999) reported that coefficient alpha ranged from .84 to .86 for a normal adult population. Alpha for the trait anger scale in this study was .88.

**Counterproductive work behavior.** The 33-item Counterproductive Work Behavior Checklist (CWB-C; see Appendix I) (Spector et al., 2006) was used to measure CWB. The CWB-C is a behavioral checklist compiled from a number of existing measures (Fox & Spector, 1999; Hollinger, 1986; Knorz & Zapf, 1996; Neuman & Baron, 1998; Robinson & Bennett, 1995; Skarlicki & Folger, 1997; Spector, 1975). Respondents indicate how often they engage in specific behaviors on the job. Response options range from 1 (never) to 5 (every day), with high scores representing higher incidence of CWB. In addition to the total scale, the CWB-C can be reduced to five subscales: abuse, production deviance, sabotage, theft, and withdrawal. Spector et al. (2006) reported that coefficient alphas ranged from .42 to .81 for the various subscales. Alphas for the self-reported CWB subscales in this study ranged from .69 to .89, whereas they ranged from .70 to .94 for the peer-reported CWB subscales. Alpha for the total CWB scale was .92 for self-report and .96 for peer-report.

**Demographics.** Information regarding employees’ sex, age, tenure, hours worked, and job type (managerial vs. non-managerial) were collected (see Appendix J). Coworkers were asked to report only their sex and age.

**Procedure**

Both employee and coworker surveys were administered online via SurveyMonkey.com. The researcher chose to collect data with an internet-based survey (IBS) instead of the traditional paper-and-pencil survey (PPS) after reviewing research that substantiated the comparability of IBS data and PPS data (e.g., Gosling, Vazire, Srivastava, & John, 2004; Hayslett & Wildemuth, 2004; Ritter, Lorig, Laurent, & Matthews, 2004). Regarding the psychometric properties of scales
administered in IBS format, measures of internal consistency have been shown to be similar to the scale reliabilities of data collected in PPS format (Pettit, 2002; Ritter et al., 2004; Yang, Levine, Xu, & Lopez Rivas, 2006). In addition, the measurement equivalence of some scales has been demonstrated by comparing data from measures administered in both IBS and PPS formats (Buchanan & Smith, 1999; Cole, Bedeian, & Field, 2006). Regarding results, univariate statistics (i.e., means) for scales have been shown to be similar when comparing IBS data with PPS data (Pettit, 2002; Ritter et al., 2004). More importantly, bivariate relationships (i.e., correlations) between variables measured in IBS format have been shown not to be significantly different than the correlations amongst the same variables when data were collected in PPS format (Pettit, 2002; Yang et al., 2006).

USF sample. Undergraduate psychology majors at USF who met the participation criteria were provided with a link to the survey from ExperimenTrak, the Psychology Department’s online participant pool program. After participants accessed the employee survey, they were provided with information about the study and their rights regarding participation (see Appendix K). Next, participants were asked to generate and enter a secret code (consisting of at least 6 digits, letters, or a combination of both), in addition to entering their first name and last initial, and the email address of a coworker they worked closely with. Items were then presented along with detailed instructions for completing each section of the survey. After participants submitted their survey, they were redirected to a website that thanked them for their participation and provided them with the researcher’s contact information so they could request more information about the study (see Appendix L).

The researcher sent an email invitation containing the participant’s first name and last initial, secret code, and the link for the coworker survey to the email address entered by the participant (see Appendix M). After coworkers accessed the coworker survey, they were provided with information about the study and their rights regarding participation (see Appendix N). Next,
coworkers were asked to enter the secret code created by the incumbent. Items were then presented along with detailed instructions for completing each section of the survey. After coworkers submitted their survey, they were redirected to the same website as participants, which thanked people for their participation and contained the researcher’s contact information (see Appendix L).

Participation was voluntary and anonymous for the USF sample. Students at USF received extra credit in exchange for their participation.

_Snowball sample._ Employed individuals who are acquainted with the researcher were sent an email asking them to participate in the study. The email provided a link to the employee survey. The procedure was identical to what was described for the USF participants once people accessed the employee survey. Individuals were also asked to forward the invitation email to people they know who they thought might be willing to participate in the study.

Participation was voluntary and anonymous for the snowball sample. Individuals were not given anything in exchange for their participation.
Chapter 3 - Results

Missing responses were examined in both employee and coworker surveys. Missing items were replaced with the mean value of the participant’s responses to the non-missing items on each scale. This procedure was used as long as the respondent answered at least two-thirds of the scale and for all variables except the scale measuring CWB. A score was not computed for a CWB subscale/scale if any item was missing on the subscale/scale, and dyads were excluded from analysis if either the employee or coworker failed to complete the CWB scale in its entirety. As a result, 14 dyads were excluded, leaving 147 dyads (127 USF and 20 snowball) in the final sample.

Analyses were conducted to determine if it was appropriate to combine the responses of the USF sample \(N = 127\) and the snowball sample \(N = 20\). Mean scores for all study variables were calculated for each group and compared via independent samples t-tests. There were no significant differences between the two samples, with the exception of the CWB production deviance subscale, age, and tenure. The mean level of production deviance reported by USF participants \(M = 3.92\) was significantly higher than the mean level reported by snowball participants \(M = 3.15; t(145) = -2.21, p < .05\). The mean age of snowball participants \(M = 33.95\) years) was higher than the mean age of USF participants \(M = 22.16\) years; \(t(145) = 10.13, p < .01\). The mean tenure of snowball participants \(M = 62\) months) was higher than the mean tenure of USF participants \(M = 25.63\) months; \(t(145) = 3.78, p < .01\). Given that the differences between the two samples on the main variables were minor, they were combined for further analysis.
Means, standard deviations, ranges (observed and possible), and Chronbach’s coefficient alpha for all study variables are displayed in Table 2.

Table 2. Descriptive Statistics for Study Variables

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<th>Variable</th>
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<th>Mean</th>
<th>SD</th>
<th>Observed Range</th>
<th>Possible Range</th>
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<td>33 - 165</td>
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Note. (S) = Self-report, (P) = Peer-report.
With the exception of some CWB subscales, all other measures displayed good internal consistency with reliabilities ranging from .76 (self-reported interpersonal conflict) to .95 (peer-reported incivility). Internal consistency estimates ranged from .69 (self-reported theft) to .94 (peer-reported abuse) for the CWB subscales. Coefficient alphas for CWB subscales of theft (self-reported), sabotage (self-reported), and withdrawal (peer-reported) were at or below the generally accepted minimum of .70 (Nunnally & Bernstein, 1994). However, it should be kept in mind that behavior checklists are considered causal indicator scales, and items in such scales are not interchangeable indicators of a single underlying construct (Bollen & Lennox, 1991; Edwards & Bagozzi, 2000). Therefore, causal indicator scales tend to display low internal consistencies because the items on these scales define the construct rather than being a reflection of the construct (Spector et al., 2006).

Pearson zero-order correlations were computed amongst all study variables. Correlations amongst the independent variables are shown in Table 3, whereas correlations amongst the dependent variables are displayed in Table 4. Correlations amongst independent and dependent variables are shown in Table 5. Tables 3, 4, and 5 collectively display correlations amongst all study variables.
Table 3. Correlations amongst Independent Variables

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WIS = Incivility, Justice-I = Informational Justice, Justice-P = Interpersonal Justice, ICAWS = Interpersonal Conflict, OCS-P = Interpersonal Constraints, OCS-J = Job Context Constraints, OCS = Organizational Constraints, QWI = Workload, WHABS = Hostile Attribution Style, OMS = Machiavellianism, PANAS = Negative Affectivity, T-Ang = Trait Anger. Note. (S) = Self-report, (P) = Peer-report; * = p < .05, ** = p < .01; N = 145 to 147.
Table 4. Correlations amongst Dependent Variables

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Note. (S) = Self-report, (P) = Peer-report; * = p < .05, ** = p < .01; N = 147.
Table 5. Correlations amongst Independent and Dependent Variables

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Note. (S) = Self-report, (P) = Peer-report; * = p < .05, ** = p < .01; N = 146 to 147.
Significant correlations (i.e., convergence) were found between self- and peer-reported stressors (see Table 3): incivility ($r = .49, n = 147$), interpersonal conflict ($r = .66, n = 147$), interpersonal constraints ($r = .45, n = 145$), job context constraints ($r = .48, n = 145$), organizational constraints ($r = .49, n = 145$), and workload ($r = .56, n = 147$). Convergence also was found between self- and peer-reported CWB (see Table 4): abuse ($r = .48, n = 147$), production deviance ($r = .20, n = 147$), sabotage ($r = .29, n = 147$), theft ($r = .42, n = 147$), withdrawal ($r = .32, n = 147$), and overall CWB ($r = .42, n = 147$).

Hypothesis 1: The Appraisal of Job Stressors

Hypothesis 1 predicted that hostile attribution style would be more strongly related to psychosocial stressors (i.e., incivility, interactional justice, and interpersonal conflict) than to nonsocial stressors (i.e., organizational constraints and workload). The zero-order correlations between hostile attribution style and the stressors (psychosocial and nonsocial) were examined in order to test this hypothesis. For self-reported stressors, HAS was most strongly related to interpersonal conflict ($r = .40$), followed by incivility ($r = .39$), interpersonal justice ($r = -.38$), and informational justice ($r = -.26$). Note that high scores on the informational and interpersonal justice subscales represent higher levels of perceived justice (not injustice), thus, negative relationships with HAS were expected. In contrast to the psychosocial stressors, HAS had slightly weaker associations with interpersonal constraints ($r = .35$) and job context constraints ($r = .31$), and a non-significant relationship with workload ($r = .15, n.s.$). For peer-reported stressors, HAS was most strongly related to incivility ($r = .27$), followed by interpersonal conflict ($r = .23$) and interpersonal constraints ($r = .17$). In addition, HAS had non-significant relationships with job context constraints ($r = .16, n.s.$) and workload ($r = .11, n.s.$).

The stressor-hostile attribution style correlations were compared between the (psychosocial and nonsocial) stressor categories using the Hotelling-Williams t-test for dependent correlations (Williams, 1959) for both self-report and peer-report. For self-report, correlations of
HAS with the psychosocial stressors of incivility \([t(144) = 2.77, p < .01]\), informational justice
\([t(144) = -3.18, p < .01]\), interpersonal justice \([t(144) = -4.44, p < .01]\), and interpersonal conflict
\([t(144) = 2.87, p < .01]\) were significantly stronger than the correlation of HAS with the nonsocial
stressor of workload. In addition, the correlations of HAS with the psychosocial stressors of
informational justice \([t(143) = -4.54, p < .01]\) and interpersonal justice \([t(143) = -5.68, p < .01]\)
were significantly different than the correlation of HAS with the nonsocial stressor of
interpersonal constraints. The correlation of HAS with interpersonal constraints was stronger than
the correlation of HAS with informational justice, whereas it was weaker than the correlation of
HAS with interpersonal justice. Similarly, the correlations of HAS with the psychosocial stressors
of informational justice \([t(143) = -4.22, p < .01]\) and interpersonal justice \([t(143) = -5.31, p < .01]\)
were significantly different than the correlation of HAS with the nonsocial stressor of job context
constraints. The correlation of HAS with job context constraints was stronger than the correlation
of HAS with informational justice, whereas it was weaker than the correlation of HAS with
interpersonal justice. Moreover, for the psychosocial stressors of incivility and interpersonal
conflict, no significant differences were found between the HAS-psychosocial stressor
correlations and the HAS-constraints (both nonsocial stressors of interpersonal constraints and
job context constraints) correlations. No significant differences were found for peer-report.

To summarize, hypothesis 1 predicted that hostile attribution style would be more
strongly related to psychosocial stressors (i.e., incivility, interactional justice, and interpersonal
conflict) than to nonsocial stressors (i.e., organizational constraints and workload). This
hypothesis was partially supported as, for self-report, the HAS-psychosocial stressor (incivility,
informational justice, interpersonal justice, and interpersonal conflict) correlations were
significantly stronger than the HAS-workload (nonsocial stressor) correlation. In addition, the
HAS-interpersonal justice (psychosocial stressor) correlation was significantly stronger than the
HAS-constraints (both nonsocial stressors of interpersonal constraints and job context constraints)
correlations. However, the HAS-informational justice (psychosocial stressor) correlation was significantly weaker than the HAS-constraints (both nonsocial stressors of interpersonal constraints and job context constraints) correlations.

Hypothesis 1a predicted that hostile attribution style would be more strongly related to interpersonal constraints (social) than to job context constraints (nonsocial). For self-reported constraints, HAS was more strongly related to interpersonal constraints ($r = .35$) than to job context constraints ($r = .31$). For peer-reported constraints, HAS was positively associated with interpersonal constraints ($r = .17$), whereas it had a non-significant relationship with job context constraints ($r = .16, \text{n.s.}$). The correlations of HAS with interpersonal and job context constraints were compared using the t-test for dependent correlations, and no significant differences were found for self-report [$t(143) = .74, \text{n.s.}$] or peer-report [$t(143) = .16, \text{n.s.}$]. Therefore, hypothesis 1a was not supported.

**Hypothesis 2: The Link Between Job Stressors and CWB**

Hypothesis 2 predicted that hostile attribution style would moderate the relationship between job stressors (incivility, interactional justice, interpersonal conflict, organizational constraints, and workload) and CWB. Specifically, it was expected that the relationship between job stressors (incivility, interactional justice, interpersonal conflict, organizational constraints, and workload) and CWB would be stronger for individuals with a stronger tendency to make hostile attributions than those with a weaker tendency to attribute hostile intent. These relationships were tested with moderated regression, wherein CWB was regressed on the predictor (incivility, interactional justice, interpersonal conflict, organizational constraints, and workload), the moderator (hostile attribution style), and the product term of the predictor and moderator, respectively. Results were consistent with moderation when the beta for the product term was significant. Significant interactions were graphed according to Cohen, Cohen, West, and
Aiken (2003). Specifically, simple effects equations using values 1 standard deviation above and below the mean were used to plot the interactions.

HAS did not moderate the relationship between incivility (both self- and peer-report) and CWB when CWB was self-report or peer-report (see Table 6). No significant interaction effects were found between self-reported incivility and HAS when CWB was self-report ($\beta = .18$, n.s.) or peer-report ($\beta = -.19$, n.s.). In addition, the interactions between peer-reported incivility and HAS were not significant when CWB was self-report ($\beta = .55$, n.s.) or peer-report ($\beta = -.26$, n.s.).

Table 6. Moderated Regressions of CWB onto Incivility and HAS

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<th>Step</th>
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<th>SEB</th>
<th>$\beta$</th>
<th>$R^2$</th>
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<td>.12</td>
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<td>.02</td>
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Note. B = Unstandardized Coefficient, SEB = Standard Error of B, $\beta$ = Standardized Coefficient.

* = $p < .05$, ** = $p < .01$; $N = 147$

The relationship between informational justice and CWB was not significantly moderated by HAS when CWB was self-report or peer-report (see Table 7). No significant interaction effects were found between informational justice and HAS when CWB was self-report ($\beta = -.30$, n.s.) or peer-report ($\beta = -.03$, n.s.).
Table 7. Moderated Regressions of CWB onto Informational Justice and HAS

<table>
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Note. B = Unstandardized Coefficient, SEB = Standard Error of B, β = Standardized Coefficient. * = p < .05, ** = p < .01; N = 147

HAS did not moderate the relationship between interpersonal justice and CWB when CWB was self-report or peer-report (see Table 8). The interactions between interpersonal justice and HAS were not significant when CWB was self-report (β = -.26, n.s.) or peer-report (β = .34, n.s.).

Table 8. Moderated Regressions of CWB onto Interpersonal Justice and HAS

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<th>R²</th>
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Note. B = Unstandardized Coefficient, SEB = Standard Error of B, β = Standardized Coefficient. * = p < .05, ** = p < .01; N = 147

For self-reported CWB, significant interactions were found between HAS and self-reported interpersonal conflict (β = .98, p < .01) and between HAS and peer-reported interpersonal conflict (β = .83, p < .05; see Table 9). For both self-reported interpersonal conflict
(see Figure 1) and peer-reported interpersonal conflict (see Figure 2) the pattern of data showed that when HAS was high, the line depicting the relationship between interpersonal conflict and CWB (self) had a steeper slope than when HAS was low. For peer-reported CWB, no significant interactions were found between HAS and self-reported interpersonal conflict ($\beta = -.27, n.s.$) or between HAS and peer-reported interpersonal conflict ($\beta = -.05, n.s.;$ see Table 9). Because moderator tests have low power, the moderator effects of HAS with both self-reported interpersonal conflict (see Figure 3) and peer-reported interpersonal conflict (see Figure 4) on peer-reported CWB were graphed in order to determine if the relationships were in the expected direction. In contrast to results with self-reported CWB, the pattern of data did not suggest that HAS made any difference in the relationship between peer-reported CWB and both self-reported and peer-reported interpersonal conflict.

Table 9. Moderated Regressions of CWB onto Interpersonal Conflict and HAS

<table>
<thead>
<tr>
<th>Step</th>
<th>Criterion: CWB (Self)</th>
<th>B</th>
<th>SEB</th>
<th>$\beta$</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>-1.33</td>
<td>1.04</td>
<td>-.31</td>
<td>.21**</td>
<td>.21**</td>
</tr>
<tr>
<td>2</td>
<td>HAS</td>
<td>-.31</td>
<td>.26</td>
<td>-.22</td>
<td>.27**</td>
<td>.06**</td>
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<tr>
<td>3</td>
<td>Interpersonal Conflict (Self) x HAS</td>
<td>.11</td>
<td>.04</td>
<td>.98**</td>
<td>.31**</td>
<td>.04**</td>
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<tr>
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<td>.08**</td>
<td>.08**</td>
</tr>
<tr>
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<td>.27</td>
<td>-.06</td>
<td>.20**</td>
<td>.12**</td>
</tr>
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<td>.04</td>
<td>.83*</td>
<td>.23**</td>
<td>.03*</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Criterion: CWB (Peer)</th>
<th>B</th>
<th>SEB</th>
<th>$\beta$</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
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<td>.35</td>
<td>.15</td>
<td>.14**</td>
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<td>.05</td>
<td>-.27</td>
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</tr>
<tr>
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<td>.33</td>
<td>.08</td>
<td>.25**</td>
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<td>-.01</td>
<td>.05</td>
<td>-.05</td>
<td>.25**</td>
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</table>

Note. B = Unstandardized Coefficient, SEB = Standard Error of B, $\beta$ = Standardized Coefficient. 
* = $p < .05$, ** = $p < .01$; $N = 147$
Figure 1. HAS as moderator of the relationship between interpersonal conflict (Self) and CWB (Self).

Figure 2. HAS as moderator of the relationship between interpersonal conflict (Peer) and CWB (Self).

Figure 3. HAS as moderator of the relationship between interpersonal conflict (Self) and CWB (Peer).
For self-reported CWB, significant interactions were found between HAS and self-reported organizational constraints ($\beta = .63, p < .05$) and between HAS and peer-reported organizational constraints ($\beta = .65, p < .05$; see Table 10). For both self-reported organizational constraints (see Figure 5) and peer-reported organizational constraints (see Figure 6) the pattern of data showed that when HAS was high, the line depicting the relationship between organizational constraints and CWB (self) had a steeper slope than when HAS was low. For peer-reported CWB, no significant interactions were found between HAS and self-reported organizational constraints ($\beta = .23, n.s.$) or between HAS and peer-reported organizational constraints ($\beta = .06, n.s.;$ see Table 10). Because moderator tests have low power, the moderator effects of HAS with both self-reported organizational constraints (see Figure 7) and peer-reported organizational constraints (see Figure 8) on peer-reported CWB were graphed in order to determine if the relationships were in the expected direction. Similar to results with self-reported CWB, for both self-reported organizational constraints and peer-reported organizational constraints, the pattern of data showed a steeper slope between organizational constraints and CWB (peer) when HAS was high than when HAS was low.
Table 10. Moderated Regressions of CWB onto Organizational Constraints and HAS

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<th>Step</th>
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<th>R²</th>
<th>ΔR²</th>
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<td>.23**</td>
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<td>HAS</td>
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<td>.25</td>
<td>-.07</td>
<td>.29**</td>
<td>.06**</td>
</tr>
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<td>.01</td>
<td>.63*</td>
<td>.31**</td>
<td>.02*</td>
</tr>
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<td>.27</td>
<td>-.17</td>
<td>.11**</td>
<td>.11**</td>
</tr>
<tr>
<td>2</td>
<td>HAS</td>
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<td>.26</td>
<td>-.03</td>
<td>.23**</td>
<td>.12**</td>
</tr>
<tr>
<td>3</td>
<td>Organizational Constraints (Peer) x HAS</td>
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<td>.01</td>
<td>.65*</td>
<td>.26**</td>
<td>.03*</td>
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<td>Criterion: CWB (Peer)</td>
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<td>.35</td>
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<td>.08**</td>
</tr>
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<td>HAS</td>
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<td>.35</td>
<td>-.04</td>
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<td>.01</td>
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<td>.36</td>
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<td>.17**</td>
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<td>.34</td>
<td>.06</td>
<td>.18**</td>
<td>.01</td>
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<tr>
<td>3</td>
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<td>.02</td>
<td>.06</td>
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</table>

Note. B = Unstandardized Coefficient, SEB = Standard Error of B, β = Standardized Coefficient. * = p < .05, ** = p < .01; N = 146

Figure 5. HAS as moderator of the relationship between organizational constraints (Self) and CWB (Self).
Figure 6. HAS as moderator of the relationship between organizational constraints (Peer) and CWB (Self).

![Graph showing the relationship between organizational constraints (Peer) and CWB (Self) for High and Low HAB.]

Figure 7. HAS as moderator of the relationship between organizational constraints (Self) and CWB (Peer).

![Graph showing the relationship between organizational constraints (Self) and CWB (Peer) for High and Low HAB.]

Figure 8. HAS as moderator of the relationship between organizational constraints (Peer) and CWB (Peer).

![Graph showing the relationship between organizational constraints (Peer) and CWB (Peer) for High and Low HAB.]
HAS did not moderate the relationship between workload (both self- and peer-report) and CWB when CWB was self-report or peer-report (see Table 11). No significant interaction effects were found between self-reported workload and HAS when CWB was self-report ($\beta = .31, n.s.$) or peer-report ($\beta = -.22, n.s.$). In addition, the interactions between peer-reported workload and HAS were not significant when CWB was self-report ($\beta = .41, n.s.$) or peer-report ($\beta = -.12, n.s.$).

Table 11. Moderated Regressions of CWB onto Workload and HAS

<table>
<thead>
<tr>
<th>Step</th>
<th>B</th>
<th>SEB</th>
<th>$\beta$</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
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<tr>
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<td>.00</td>
<td>.07**</td>
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<td>.30</td>
<td>.18</td>
<td>.20**</td>
</tr>
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<td>3</td>
<td>Workload (Self) x HAS</td>
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<td>.02</td>
<td>.31</td>
<td>.21**</td>
</tr>
<tr>
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<td>-.17</td>
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<td>.32</td>
<td>.13</td>
<td>.17**</td>
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<td>.02</td>
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<td>.18**</td>
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<td>Criterion: CWB (Peer)</td>
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<td>Workload (Self)</td>
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<td>HAS</td>
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<tr>
<td>3</td>
<td>Workload (Self) x HAS</td>
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<td>.02</td>
<td>-.22</td>
<td>.03</td>
</tr>
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<td>Workload (Peer)</td>
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<td>HAS</td>
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<td>.43</td>
<td>.24</td>
<td>.03</td>
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<tr>
<td>3</td>
<td>Workload (Peer) x HAS</td>
<td>-.01</td>
<td>.03</td>
<td>-.12</td>
<td>.03</td>
</tr>
</tbody>
</table>

Note. B = Unstandardized Coefficient, SEB = Standard Error of B, $\beta$ = Standardized Coefficient.

* $= p < .05$, ** $= p < .01$; $N = 147$

To summarize, hypothesis 2 predicted that hostile attribution style would moderate the relationship between job stressors (incivility, interactional justice, interpersonal conflict, organizational constraints, and workload) and CWB. This hypothesis was partially supported as HAS was found to moderate the relationship between CWB and stressors of interpersonal conflict and organizational constraints. For self-reports of both stressors (interpersonal conflict and organizational constraints), significant interactions were found only for self-reported CWB, not peer-reported CWB. The interaction effects held even when the stressors (interpersonal conflict and organizational constraints) were peer-report. Hypothesis 2a predicted that the relationship
between job stressors (incivility, interactional justice, interpersonal conflict, organizational constraints, and workload) and CWB would be stronger for individuals with a stronger tendency to make hostile attributions than those with a weaker tendency to attribute hostile intent. This hypothesis was partially supported. For both interpersonal conflict and organizational constraints the slopes of the regression lines depicting the relationship between the stressor and CWB were steeper for individuals high on HAS than individuals low on HAS.

**Hypothesis 3: The Link Between Other Individual Difference Variables with Negative Perceptual Tendencies and CWB**

Hypothesis 3 predicted that hostile attribution style would mediate the relationship between individual difference variables with negative perceptual tendencies (i.e., Machiavellianism, NA, and trait anger) and CWB. Baron and Kenney’s (1986) procedure was used to test for mediation. Three regression models were examined: regression of (1) the criterion (CWB) on the predictor (Machiavellianism, NA, and trait anger), (2) the proposed mediator (hostile attribution style) on the predictor, and (3) the criterion on both the predictor and mediator. The regression of the criterion onto the predictor (Model 1) was compared with the regression of the criterion onto both the predictor and mediator (Model 3). If the beta of the predictor was significant in the first model, but substantially reduced or non-significant in the combined model (Model 3), then results were consistent with mediation. In addition, the Aroian version (1944/1947) of the Sobel test (1982) was performed to further test the significance of the mediation effect.

Support for the mediating role of HAS in the relationship between Machiavellianism and self-reported CWB was found (see Table 12). Machiavellianism ($\beta = -.23, p < .01$) became non-significant ($\beta = -.13, p > .05$) when HAS was entered into the equation ($\beta = .36, p < .01$), providing evidence for full mediation. Results of the Sobel test ($z = -2.69, p < .01$) also supported full mediation.
Results supported HAS as a partial mediator between NA and self-reported CWB (see Table 12). Specifically, the beta weight associated with NA decreased from .38 ($p < .01$) to .27 ($p < .01$) when HAS was entered into the equation ($\beta = .30, p < .01$). Results of the Sobel test ($z = 2.92, p < .01$) also supported partial mediation.

For trait anger, evidence for partial mediation also was found (see Table 12). The beta weight associated with trait anger decreased from .38 ($p < .01$) to .29 ($p < .01$) when HAS was entered into the equation ($\beta = .32, p < .01$). Results of the Sobel test ($z = 2.58, p < .05$) also supported HAS as a partial mediator between trait anger and self-reported CWB.

Table 12. Analysis of the Mediating Role of HAS

<table>
<thead>
<tr>
<th>Step</th>
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<th>β (Mediator)</th>
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<th>$R^2$</th>
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<td>.05**</td>
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<td>.36**</td>
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<td>.18**</td>
</tr>
<tr>
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<td>.38</td>
<td>.47</td>
<td>.22**</td>
</tr>
<tr>
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<td>Negative Affectivity, HAS</td>
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<td>.30**</td>
<td>.47</td>
<td>.22**</td>
</tr>
<tr>
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<td>Trait Anger</td>
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<td>.38</td>
<td>.49</td>
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<td>Trait Anger, HAS</td>
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<td>.32**</td>
<td>.49</td>
<td>.24**</td>
</tr>
</tbody>
</table>

* = $p < .05$, ** = $p < .01$; $N = 147$

To summarize, hypothesis 3 predicted that hostile attribution style would mediate the relationship between individual difference variables with negative perceptual tendencies (i.e., Machiavellianism, NA, and trait anger) and CWB. Evidence for full mediation was found with Machiavellianism, whereas evidence for partial mediation was found for both NA and trait anger. Therefore, hypothesis 3 was partially supported.

Machiavellianism and the Occupational Stress Process

In addition to the proposed hypotheses, the influence of Machiavellianism on the occupational stress process was explored. It was expected that high Machiavellians would appraise and respond to job stressors in a negative fashion. However, examination of the zero-order correlations of Machiavellianism with stressors and CWB revealed the opposite pattern.
Regarding job stressors, Machiavellianism was negatively related to self-reported incivility \( (r = - .17) \). In addition, it was positively associated with self-reported informational justice \( (r = .17) \). It should be noted that high scores on the informational justice subscale represents higher levels of perceived justice, not injustice. For self-reported CWB, Machiavellianism was negatively associated with abuse \( (r = -.23) \), sabotage \( (r = -.23) \), theft \( (r = -.23) \), and overall CWB \( (r = -.23) \). For peer-reported CWB, it was negatively related only to theft \( (r = -.18) \). The zero-order correlations of Machiavellianism with other individual difference variables with negative perceptual tendencies also were examined. Machiavellianism was negatively related to hostile attribution style \( (r = -.27) \) and NA \( (r = -.29) \). It had a non-significant association with trait anger \( (r = .07, n.s.) \).
Chapter 4 - Discussion

The main objective of this study was to investigate the influence of hostile attribution style on the processes that link job stressors with CWB. Specifically, three areas were examined: the appraisal of job stressors, the link between job stressors and CWB, and the link between other individual difference variables with negative perceptual tendencies and CWB. The other purpose of the current study was to explore the influence of Machiavellianism on the occupational stress process. Specifically, Machiavellians’ appraisal of and reactions to job stressors were examined.

The Appraisal of Job Stressors: Relations of HAS with Psychosocial and Nonsocial Stressors

It was expected that hostile attribution style would be more strongly related to psychosocial stressors (i.e., incivility, interactional justice, and interpersonal conflict) than to nonsocial stressors (i.e., organizational constraints and workload). Hypothesis 1 was partially supported. The HAS-psychosocial stressor (incivility, informational justice, interpersonal justice, and interpersonal conflict) correlations were significantly stronger than the HAS-workload (nonsocial stressor) correlation for self-report. The HAS-interpersonal justice (psychosocial stressor) correlation also was significantly stronger than the HAS-constraints (both nonsocial stressors of interpersonal constraints and job context constraints) correlations for self-report. However, the HAS-informational justice (psychosocial stressor) correlation was significantly weaker than the HAS-constraints (both nonsocial stressors of interpersonal constraints and job context constraints) correlations for self-report.

The results regarding the comparisons of the HAS-psychosocial stressor (incivility, informational justice, interpersonal justice, and interpersonal conflict) correlations with the HAS-workload (nonsocial stressor) correlation were consistent with previous research, which showed
the relationship between job stressors and other individual difference variables with the tendency to appraise the job environment in a negative fashion (i.e., NA and trait anger). For example, Spector and Jex (1998) found that NA was most strongly related to interpersonal conflict, followed by organizational constraints and workload (mean correlations of .33, .30, and .13, respectively). Similarly, Miles et al. (2002) found that trait anger was most strongly associated with organizational constraints, followed by interpersonal conflict and workload ($r = .28, .25$, and .21, respectively). In all cases, the relationship between individual differences and job stressors was stronger for abstract, social (i.e., psychosocial) stressors such as interpersonal conflict than for more concrete, objective (i.e., nonsocial) ones such as workload.

At first, it was surprising that the HAS-informational justice (psychosocial stressor) correlation was significantly weaker than the HAS-constraints (both nonsocial stressors of interpersonal constraints and job context constraints) correlations. However, these results are understandable given that some items used to measure informational justice easily could have been used to measure organizational constraints: explained the procedures thoroughly; provided you with reasonable explanations regarding the procedures; and communicated details in a timely manner. They appear to complement organizational constraints items such as inadequate help from others (interpersonal); incorrect instructions (job context); and lack of necessary information about what to do or how to do it (job context).

For self-reported incivility and interpersonal conflict, no significant differences were found between the HAS-psychosocial stressor (incivility and interpersonal conflict) correlations and the HAS-constraints (both nonsocial stressors of interpersonal constraints and job context constraints) correlations. However, the pattern of correlations was consistent with previous research, which showed the relationship between job stressors and other individual difference variables with negative perceptual tendencies (i.e., NA). For example, Penney (2002) found that NA was most strongly related to interpersonal conflict, followed by incivility and organizational
constraints ($r = .26, .24, \text{ and } .13$, respectively). Similarly, for peer-reported stressors, no significant differences were found between the (psychosocial and nonsocial) stressor categories when the HAS-stressor correlations were compared. In all cases, the correlations were not significantly different in magnitude. However, they were in the expected direction (i.e., HAS-psychosocial stressor correlations were generally larger than the HAS-nonsocial stressor correlations), providing some support for the supposition that the appraisal of psychosocial stressors should be influenced more by hostile attribution style than nonsocial stressors.

It also was expected that hostile attribution style would be more strongly related to interpersonal constraints (social) than to job context constraints (nonsocial). Hypothesis 1a was not supported. No significant differences were found between the HAS-interpersonal constraints correlation and the HAS-job context constraints correlation for self-report or peer-report. For both self-report and peer-report, the correlations were not significantly different in magnitude; however, they were in the expected direction, providing some support for the distinction between interpersonal constraints and job context constraints.

**HAS as a Moderator of the Link Between Job Stressors and CWB**

It was expected that hostile attribution style would moderate the relationship between job stressors (incivility, interactional justice, interpersonal conflict, organizational constraints, and workload) and CWB. Hypothesis 2 was partially supported. Hostile attribution style was found to moderate the relationship between CWB and the stressors of interpersonal conflict and organizational constraints. For self-reports of both stressors (interpersonal conflict and organizational constraints), significant interactions were found only for self-reported CWB, not peer-reported CWB. Significant interaction effects also were found for self-reported CWB, but not peer-reported CWB, when both stressors (interpersonal conflict and organizational constraints) were peer-report. When the stressors and CWB were self-report (self-self), peer-report (peer-peer), or mixed report (self-peer or peer-self), there was no support for the moderator
effect of hostile attribution style on the relationship between CWB and the stressors of incivility, interactional justice (informational justice and interpersonal justice), or workload.

It also was expected that the relationship between job stressors and CWB would be stronger for individuals with a stronger tendency to make hostile attributions than those with a weaker tendency to attribute hostile intent. Hypothesis 2a was partially supported. For both interpersonal conflict and organizational constraints, the pattern of data showed that the line depicting the relationship between the stressor and CWB had a steeper slope for individuals high on HAS than the line for individuals low on HAS. When low levels of interpersonal conflict or organizational constraints were perceived, individuals engaged in low levels of CWB overall. In contrast, when high levels of stressors (interpersonal conflict or organizational constraints) were perceived, individuals with a stronger tendency to make hostile attributions engaged in much higher levels of CWB than those with a weaker tendency to attribute hostile intent.

The results regarding hostile attribution style were consistent with previous research, which showed the moderator effect of other individual difference variables with negative perceptual tendencies (i.e., NA and trait anger) on the relationship between job stressors and CWB. For example, NA has been shown to moderate the relationship between CWB and the stressors of interpersonal conflict (Penney, 2002) and organizational constraints (Penney & Spector, 2005). Similarly, Fox et al. (2001) found that trait anger moderated the relationship between interpersonal conflict and personal CWB.

Hostile attribution style was not found to moderate the relationship between CWB and the stressors of incivility and interactional justice (informational justice and interpersonal justice). This was inconsistent with previous research, which showed the moderator effect of NA on CWB for the stressors of incivility (Penney, 2002) and interactional justice (Skarlicki et al., 1999). It is possible that individuals high on hostile attribution style tend to experience interpersonal conflict and organizational constraints as being more adverse than incivility or interactional justice.
Getting into heated arguments with others at work (i.e., interpersonal conflict) and having lack of information/equipment impede your performance (i.e., organizational constraints) are concrete situations/events with negative implications for one’s well-being. However, incivility (e.g., paid little attention to your statement) and interactional justice (e.g., treated you in a polite manner) both ask about behaviors that may or may not have been perceived as rude or disrespectful and are subjective in terms of their (positive or negative) significance to one’s well-being. It is possible that an individual may interpret another’s actions as being rude or disrespectful (i.e., uncivil or interactionally unjust), but s/he may not perceive malevolent intent behind those behaviors. For example, rude behaviors such as showing little interest in another’s opinion (i.e., incivility) or making “improper” remarks or comments (i.e., interactional justice) could be attributed to idiosyncratic tendencies of another rather than the malicious attempt to inflict harm by the “perpetrator.” Therefore, it appears that behaviors classified as incivility and interactional justice were not sufficient (in terms of implied threat to one’s well-being) to provoke individuals high on hostile attribution style to engage in CWB.

Lack of support for the moderator effect of hostile attribution style might have been due to the possibility that the effect occurs in the perception of the environment, and not post-perception (i.e., when the perception is assessed). That is, hostile attribution style moderates the relationship between the environmental stressor and the perceived stressor rather than between the perceived stressor and CWB.

The current study also might have lacked sufficient power to detect significant moderator effects. Moderator tests suffer from low statistical power (Aguinis, 1995; McClelland & Judd, 1993), and data were available for only 147 pairs of employees and coworkers. Therefore, it is possible that the sample size for this study might not have been large enough to allow for the detection of significant moderator effects in some cases. More research with larger samples is
needed in order to accurately determine the moderator effect of hostile attribution style on the relationship between CWB and both incivility and interactional justice.

HAS as Mediator of the Link Between Other Individual Difference Variables With Negative Perceptual Tendencies and CWB

It was expected that hostile attribution style would mediate the relationship between individual difference variables with negative perceptual tendencies (i.e., Machiavellianism, NA, and trait anger) and CWB. Hypothesis 3 was partially supported. Hostile attribution style was found to fully mediate the relationship between Machiavellianism and CWB. It was found to partially mediate the relationship between NA and CWB, in addition to the relationship between trait anger and CWB.

Results regarding NA and trait anger were supportive of Dodge’s (1985) supposition that individuals who are predisposed towards a negative affective state (i.e., NA and trait anger) will be more likely to infer hostile intent and to retaliate against a provocateur. Results regarding Machiavellianism also appear to support Martinko et al.’s (2002) proposition that attributional processes mediate the relationship between individual difference variables and CWB. However, it is possible that results regarding Machiavellianism were due to the choice of the scale used to assess Machiavellianism (i.e., Organizational Machiavellianism Scale, OMS; Bandelli et al., 2006). A brief discussion of the OMS is presented in the following section on Machiavellianism and the occupational stress process.

Hostile attribution style was shown to partially mediate the relationship between CWB and individual difference variables with negative perceptual tendencies and the concomitant predisposition towards negative emotional states (i.e., NA and trait anger). Given the negative perceptual tendencies of individuals with a hostile attribution style, it would be interesting if future research examines the relationships amongst hostile attribution style, emotions, and CWB. Previous research on hostile attribution style and emotions has shown that negative emotions
(e.g., angry, annoyed, or irritated) are a significant predictor of attributions of hostile intent (Topalli & O’Neal, 2003). However, it would be interesting to examine whether hostile attribution style leads to negative emotional reactions (e.g., anger) and whether emotions mediate the relationship between hostile attribution style and CWB. For example, Betancourt and Blair (1992) found that anger mediated the relationship between attributions of intentionality for a conflict situation and the violence level of an aggressive response.

**Machiavellianism and the Occupational Stress Process**

The influence of Machiavellianism on the occupational stress process also was explored. It was expected that high Machiavellians would appraise and respond to job stressors in a negative fashion. Regarding the appraisal of stressors, Machiavellianism was negatively associated with self-reported incivility and positively related to self-reported informational justice. That is, high Machiavellians were less likely to experience incivility and more likely to perceive that organizational decision-makers provided adequate and honest explanations.

Regarding reactions to stressors, Machiavellianism was negatively related to abuse, sabotage, theft, and overall CWB for self-report, whereas it was negatively associated with only theft for peer-report. That is, high Machiavellians were less likely to engage in CWB than those low on Machiavellianism. Results regarding CWB were consistent with those from a study by Kessler, Bandelli, Penney, and Spector (2006). Kessler et al. also used the Organizational Machiavellianism Scale (OMS; Bandelli et al., 2006) to measure Machiavellianism and found a negative relationship between Machiavellianism and CWB. This is contrary to previous research regarding the effects of Machiavellianism on general aggression (Repacholi et al., 2003; Russell, 1974; Touhey, 1971) and workplace aggression (i.e., CWB; Bennett & Robinson, 2000), which used Christie and Geis’ (1970) Machiavellianism measure (i.e., Mach IV or Mach V).

The relationship of Machiavellianism with other individual difference variables with negative perceptual tendencies also was examined. Machiavellianism was negatively associated
with NA and hostile attribution style, whereas it had a non-significant relationship with trait anger. That is, high Machiavellians were less likely to experience higher levels of negative affect or to attribute hostile intent. Results regarding NA were inconsistent with previous research, which found a positive relationship between Machiavellianism (as measured with the Mach IV) and NA (Christie, 1970; Nigro & Galli, 1985). However, Christie and Geis (1970) found a non-significant relationship between the two variables using the Mach V. Similarly, results regarding hostile attribution style were contradictory of previous research, which found that high Machiavellians attributed more negative intent to the actions of another in ambiguous situations (Repacholi et al., 2003).

Given the inconsistency of results with previous research regarding the relationship of Machiavellianism with aggression (general and workplace), NA, and hostile attribution style, it is possible that construct validity was an issue. The Organizational Machiavellianism Scale (OMS; Bandelli et al., 2006) is a new instrument with limited evidence regarding its validity as a measure of Machiavellianism (Bandelli et al., 2006). The OMS measures the degree to which an individual uses manipulation as a social strategy to achieve his/her desired ends in the context of the work environment. In contrast, Christie and Geis’ (1970) Machiavellianism measure (i.e., Mach V) assesses an individual’s agreement with Machiavelli’s (2003) ideas regarding interpersonal manipulation and cynical attitudes. Perhaps different results regarding the influence of Machiavellianism on the occupational stress process may be found if future researchers use Christie and Geis’ (1970) Machiavellianism measure (i.e., Mach V). Of interest will be the results regarding the effect of Machiavellianism on the appraisal of psychosocial stressors (e.g., incivility and informational justice) due to high Machiavellians’ cynical beliefs regarding the nature of man (Christie & Lehmann, 1970). Also of interest will be the relationship of Machiavellianism with counterproductive behaviors related to sabotage because previous research has shown that high
Machiavellians tend to endorse organizational sabotage more than those low on Machiavellianism (Giacalone & Knouse, 1990).

Convergence between Self and Peer Reports

The majority of research on hostile attribution style and CWB has been limited to single source participant reports. While self-report is the most practical means of assessing perceptions of environmental conditions and CWB, it is possible that the observed relationships may be inflated due to biases shared across measures, response sets, or unrecognized personal characteristics (Spector & Fox, 2005). Therefore, the current study utilized coworker reports of the incumbent’s job stressors and CWB in an attempt to integrate another, more objective source of data.

Self- (incumbent) and peer- (coworker) reports showed good convergence for all study variables for which multiple data sources were collected. Regarding job stressors, the highest convergence was found for interpersonal conflict. For CWB, the highest convergence was found for abuse. People who work closely together, therefore, appear to be the best judges of one another’s public, interpersonal behaviors. In fact, the correlations between peer-reports of stressors and overall CWB were larger than those of self-reports for stressors involving interpersonal behaviors (i.e., interpersonal conflict and incivility). However, coworkers may not be privy to more private behaviors such as purposely wasting the employer’s materials/supplies (i.e., sabotage) or purposely doing one’s work incorrectly (i.e., production deviance). Therefore, it is not surprising that production deviance and sabotage had the lowest levels of convergence.

In general, variables that were significantly related to self-reported, overall CWB also were significantly associated with peer-reported, overall CWB, and vice versa. The exceptions were workload, Machiavellianism, and trait anger. These findings appear to address the criticism that significant findings could be due to method variance shared among the measures rather than true relationships among the variables. However, moderator effects were found only with self-
reported overall CWB, and not peer-reported overall CWB. While the significant results with self-reported CWB could be attributed to common method variance, the fact that the moderator effects also were found with peer-reported stressors (interpersonal conflict and organizational constraints) suggests that this was not the case. Cross-source (self-peer) correlations also were generally smaller than the within source (self-self) correlations for the same variables. For example, hostile attribution style (self-report) had a .17 correlation with peer-reported overall CWB, whereas it had a correlation of .40 when overall CWB was self-report. One possible interpretation is that peer-ratings of CWB may be a deficient indicator of incumbents’ actual level of CWB. An alternative explanation has to do with lack of power. Moderator tests are low power, and data were available for only 147 peers. Therefore, a significant moderator effect might have been harder to detect, especially if peer-ratings of CWB were less accurate than self-reports.

Limitations and Future Research Directions

The current study had several limitations that might have affected the results. First, the sample consisted mainly of employed undergraduate students. Aside from age, tenure, and reports of production deviance, no differences were found between the employed students (USF sample) and the non-student employees (snowball sample). Similarly, Fox et al. (2001) compared employed students and non-student employees, and no differences between the samples were found regarding correlations of CWB with stressors (interpersonal conflict and organizational constraints) and personality (NA and trait anger). Regardless, it is unknown whether the responses of students would have been representative of other employed populations. Therefore, additional studies with different employed groups are needed in order to address concerns regarding generalizability of study results.

Response rates for both employees and coworkers might have been another factor. It is unknown how many employees or coworkers in both the USF and snowball samples chose not to participate for fear of being identified by the researcher (an issue especially with the snowball
sample) and due to the sensitive nature of the behaviors addressed. I had to access information regarding the employee’s first name and last initial and the coworker’s email address in order to email the coworker survey link to the individual chosen by the participant. Future online research could use an automated survey system whereby the coworker email is generated and sent automatically. Therefore, the researcher would not see information (e.g., email address) that could be used to identify the individual. Perhaps this sense of anonymity may increase response rate for both employees and coworkers.

It is possible that the nature of the relationship between the employee and coworker might have affected reports of stressors experienced and CWB displayed by the employee. Due to limited demographic data collected from coworkers, it was not possible to determine how long the employee and coworker had worked together and the amount of time they actually interacted with each other on a daily basis. Furthermore, it is possible that the employee chose a coworker who s/he got along with well to fill out the coworker survey instead of one who had the best opportunity to observe his/her behavior. In order to address this issue, future researchers may want to randomly select coworkers to provide peer ratings of the employees’ behaviors.

Lastly, the cross-sectional nature of the data might have limited the inferences regarding the effects of hostile attribution style on the causal flow between stressors and CWB. Future research could use a more longitudinal design whereby information is collected on personality, stressors, and CWB at various points in time. In addition, the research design of the current study did not allow for causal conclusions to be made. For example, in this study, CWB was examined as theoretically resulting from job stressors and the individual difference variables of hostile attribution style, Machiavellianism, NA, and trait anger. However, it is possible that people who engage in CWB may be rationalizing and/or justifying their actions by reporting hostile motives in others. Therefore, more research is needed to determine the true directionality of the relationships between the variables that were explored in this study.
There exists evidence regarding the emotional processes linking job stressors and CWB (e.g., Fox et al., 2001), and the current study provided evidence of the influence of attributional processes (i.e., hostile attribution style) on CWB. However, there exists no research that examines the joint effects of emotions and attributional style on CWB. Therefore, future researchers could concurrently examine the influence of both emotional and attributional processes on CWB. In addition, future studies could use a model testing procedure such as structural equation modeling to assess the viability of the proposed linkages.

**Conclusion**

To summarize, the current study examined the effects of hostile attribution style on the processes linking job stressors and CWB. Hostile attribution style was shown to differentially relate to the appraisal of psychosocial and nonsocial stressors. It also was shown to moderate the relationship between CWB and the stressors of interpersonal conflict and organizational constraints. In addition, evidence was found to support the possibility that hostile attribution style mediates the link between CWB and the individual difference variables of NA, trait anger, and Machiavellianism. Overall, this study provided good support for the inclusion of hostile attribution style in CWB research within the occupational stress framework. It is believed that this attribution-based approach will complement current emotion-based models of CWB (e.g., Spector & Fox, 2002) and, thus, deepen researchers’ understanding of the cognitive and emotional processes related to CWB.
References


Appendices
Appendix A: Interpersonal Conflict at Work Scale (ICAWS)

How often do the following events occur in your present job?

1 = Less than once per month or never
2 = Once or twice per month
3 = Once or twice per week
4 = Once or twice per day
5 = Several times per day

1. How often do you get into arguments with others at work? 1 2 3 4 5
2. How often do other people yell at you at work? 1 2 3 4 5
3. How often are people rude to you at work? 1 2 3 4 5
4. How often do other people do nasty things to you at work? 1 2 3 4 5
Appendix B: Workplace Incivility Scale (WIS)

In your CURRENT JOB, have you been in a situation where any of your superiors or coworkers:

<table>
<thead>
<tr>
<th>1 = Never</th>
<th>2 = Once or twice</th>
<th>3 = Once or twice a month</th>
<th>4 = Once or twice a week</th>
<th>5 = Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Put you down or was condescending to you</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Paid little attention to your statement or showed little interest in your opinion</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. Made demeaning or derogatory remarks about you</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. Addressed you in unprofessional terms, either publicly or privately</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. Ignored or excluded you from professional camaraderie</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. Doubted your judgment on a matter over which you have responsibility</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. Made unwanted attempts to draw you into a discussion of personal matters</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
Appendix C: Colquitt’s (2001) Organizational Justice Measure

When decisions are made about your job, to what extent has your **supervisor** …

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. treated you in a polite manner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. treated you with dignity?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. treated you with respect?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. refrained from improper remarks or comments?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. been candid in his/her communications with you?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. explained the procedures thoroughly?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. provided you with reasonable explanations regarding the procedures?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. communicated details in a timely manner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. seemed to tailor his/her communications to individuals’ specific needs?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix D: Organizational Constraints Scale (OCS)

How often do you find it difficult or impossible to do your job because of …?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Poor equipment or supplies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Organizational rules and procedures</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Other employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Your supervisor</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Lack of equipment or supplies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Inadequate training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Interruptions by other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Lack of necessary information about what to do or how to do it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Conflicting job demands</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. Inadequate help from others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Incorrect instructions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix E: Quantitative Workload Inventory (QWI)

How often do the following events occur in your present job?

<table>
<thead>
<tr>
<th>Event</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often does your job require you to work very fast?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>How often does your job require you to work very hard?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>How often does your job leave you with little time to get things done?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>How often is there a great deal to be done?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>How often do you have to do more work than you can do well?</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
Appendix F: Workplace Hostile Attribution Bias Survey (WHABS)

Please indicate the amount that you agree with each of the statements below using the following scale:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>1 = Strongly disagree</th>
<th>2 = Moderately disagree</th>
<th>3 = Slightly disagree</th>
<th>4 = Slightly agree</th>
<th>5 = Moderately agree</th>
<th>6 = Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>If a coworker ignores me, it is probably not on purpose.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>When coworkers leave me out of social events, it is to hurt my feelings.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>If coworkers do not appreciate me enough, it is because they are self-centered.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>If coworkers work slowly on a task I assigned them, it is because they don’t like me.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>If people are laughing at work, I think they are laughing at me.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>If coworkers bump into me, it is an accident.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>When coworkers leave me out of social events, there is a good reason.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>If coworkers ignore me, it is because they are being rude.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Coworkers deliberately make my job more difficult.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>When my things are missing, they have probably been stolen.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix G: Organizational Machiavellianism Scale (OMS)

Please indicate the amount that you agree with each of the statements below using the following scale:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Strongly disagree</td>
<td></td>
</tr>
<tr>
<td>2 = Moderately disagree</td>
<td></td>
</tr>
<tr>
<td>3 = Slightly disagree</td>
<td></td>
</tr>
<tr>
<td>4 = Slightly agree</td>
<td></td>
</tr>
<tr>
<td>5 = Moderately agree</td>
<td></td>
</tr>
<tr>
<td>6 = Strongly agree</td>
<td></td>
</tr>
</tbody>
</table>

1. An effective individual builds a powerbase of strong people. 1 2 3 4 5 6
2. A wise individual in power remains on the alert for dishonest employees. 1 2 3 4 5 6
3. When acquiring a new company it is important to spend time in it. 1 2 3 4 5 6
4. In order to keep power, it is important to establish one's power base on his/her own merits. 1 2 3 4 5 6
5. A person should read about the successful people and emulate their actions. 1 2 3 4 5 6
6. A person should take care to always appear to be merciful, upright, and humane. 1 2 3 4 5 6
7. A smart leader is the face behind any decisions that bring excessive grace to the organization. 1 2 3 4 5 6
8. A person in power should throw parties at appropriate times of the year. 1 2 3 4 5 6
9. It is important to recognize dishonest intentions at the beginning of any situation. 1 2 3 4 5 6
10. Effective individuals do what the situation calls for, not necessarily what they wish to do. 1 2 3 4 5 6
11. A wise person behaves kindly when possible, but must be prepared to act mercilessly when necessary. 1 2 3 4 5 6
12. Even the most insightful observers tend to judge others based on first impressions. 1 2 3 4 5 6
13. A person in power who consistently neglects his/her employees should fear repercussions. 1 2 3 4 5 6
14. It is important that an individual recognizes valuable opportunities when they present themselves. 1 2 3 4 5 6
15. One must know how to effectively deal with those who seek to take his/her position of power. 1 2 3 4 5 6
16. It is important to be both compassionate and ruthless, when appropriate, towards other people. 1 2 3 4 5 6
17. It is important to consistently maintain one's authority. 1 2 3 4 5 6
18. A minor disagreement should not get in the way of an otherwise strong alliance. 1 2 3 4 5 6
19. Sometimes acting severely is necessary to preserve good order within an organization. 1 2 3 4 5 6
Appendix H: Positive and Negative Affect Schedule (PANAS)

How often do you **generally feel** ...?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. scared</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. afraid</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. distressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. jittery</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. nervous</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. ashamed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. guilty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. irritable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. hostile</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix I: Counterproductive Work Behavior Checklist (CWB-C)

How often have you done each of the following things on your present job?

<table>
<thead>
<tr>
<th>1 = Never</th>
<th>2 = Once or twice</th>
<th>3 = Once or twice a month</th>
<th>4 = Once or twice a week</th>
<th>5 = Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Purposely wasted your employer’s materials/supplies.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Told people outside the job what a lousy place you work for.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Purposely did your work incorrectly.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Came to work late without permission.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Stayed home from work and said you were sick when you weren’t.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Purposely damaged a piece of equipment or property.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Purposely dirtied or littered your place of work.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Stolen something belonging to your employer.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Started or continued a damaging or harmful rumor at work.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Been nasty or rude to a client or customer.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Purposely worked slowly when things needed to get done.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Taken a longer break than you were allowed to take.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Purposely failed to follow instructions.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Left work earlier than you were allowed to.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Insulted someone about their job performance.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Made fun of someone’s personal life.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Took supplies or tools home without permission.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix I: (Continued)

How often have you done each of the following things on your present job?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Put in to be paid for more hours than you worked.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. Took money from your employer without permission.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. Ignored someone at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. Blamed someone at work for an error you made.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. Started an argument with someone at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. Stole something belonging to someone at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. Verbally abused someone at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. Made an obscene gesture (the finger) to someone at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. Threatened someone at work with violence.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. Threatened someone at work, but not physically.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. Said something obscene to someone at work to make them feel bad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29. Did something to make someone at work look bad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. Played a mean prank to embarrass someone at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31. Looked at someone at work’s private mail/property without permission.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32. Hit or pushed a person at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. Insulted or made fun of someone at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix J: Demographic Information

Sex: ___ Male ___ Female

Age: ___

How long have you worked at your current job? ____ years ____ months

Do you work: ___ 20-29 hrs a week ___ 30-39 hrs a week ___ 40 or more hours a week

Is your job: _____ Managerial _____ Non-managerial
Appendix K: Employee Survey Cover Letter

Dear Participant:

This survey forms the basis of a study of how people perceive and respond to the conditions of their jobs. The purpose of this study is to look at how people's perceptions of their workplace affect their feelings about their jobs and influence the various ways they behave at work.

To participate you must currently work a minimum of 20 hours per week in a single job. If you have two or more jobs, please answer questions with regards to the job that you work 20 hours or more per week in.

Please fill out the “Employee Survey” yourself based on your experiences on your present job. It will take between 10 and 20 minutes to complete. Please begin by entering a secret code, consisting of at least 6 letters, numbers, or a combination of both, in the space provided below. Next, select a coworker in your workgroup or department to rate your workplace conditions and behaviors. This person should be someone that you work with fairly closely on a regular basis (i.e., s/he should be someone familiar with your daily activities and conditions at work). Please enter the email address of the coworker you selected in the space provided below. Because of the prevalence of email spam you will be asked to enter a name (first name and last initial ONLY) that your coworker will recognize. An email will be sent to the address you provided. It will contain your name (first name and last initial), secret code, and the link to the “Coworker Survey”. Information regarding your name and coworker’s email address will not be retained. Only the secret code will be kept. It will be used to match your answers to the answers of your coworker.

Please enter your own secret code in the blank space below (The code should be at least 6 letters, numbers, or a combination of both).
Secret code _________________

Please enter the email address of your coworker in the blank space below.
Coworker’s email address _________________

Please enter a name (first name and last initial ONLY) for yourself that your coworker will recognize in the blank space below.
Name _________________

Please let your coworker know that s/he will be sent an email containing a link to the “Coworker Survey” and the secret code that you created. The subject line of the email will contain the following information: “Your first name and last initial has asked you to participate in the Workplace Behavior Study being conducted at the University of South Florida”. Please ask your coworker to answer all questions regarding your working conditions based on his/her observations, experiences, impressions, and conversations with you on your present job. The “Coworker Survey” is a shorter version of the “Employee Survey” and should take the coworker between 5 and 10 minutes to complete. Do not discuss these questions with your coworker before both of you have completed filling out the survey.
Appendix K: (Continued)

If you have already filled out a “Coworker Survey” for someone else in your workgroup or department, please do not fill out this “Employee Survey”.

Participation in this study is strictly voluntary and you can discontinue participation at any time. There will be no penalty or loss of benefits to which you are entitled if you choose not to participate. Your responses will not be tracked to you as an individual or to your workgroup.

Thank you in advance for your participation. Feel free to contact me if you have any questions.

Sincerely,

Angeline Goh, M.S.
Doctoral Candidate, Department of Psychology
University of South Florida
4202 E. Fowler Avenue, PCD 4118G
Tampa, FL 33620
agoh@mail.usf.edu
650.255.8588
Appendix L: Final Page Viewed By Participants (For Both Employees and Coworkers)

Thank you for participating in our study of work behavior!

If you have any questions or would like to receive a copy of the study results when they become available, please email me at: agoh@mail.usf.edu.

Angeline Goh, M.S.
Doctoral Candidate, Department of Psychology
University of South Florida
4202 E. Fowler Avenue, PCD 4118G
Tampa, FL 33620
agoh@mail.usf.edu
650.255.8588
Appendix M: Email Sent to Coworker

From: agoh@mail.usf.edu
To: Coworker’s email address that the incumbent provided in the “Employee Survey”
Subject: Incumbent’s first name and last initial has asked you to participate in the Workplace Behavior Study being conducted at the University of South Florida

Greetings!

Your coworker, incumbent’s first name and last initial, has volunteered to participate in a study of workplace behavior at the University of South Florida. As part of this study, s/he has requested that you fill out a short survey regarding his/her behavioral reactions to his/her job conditions and work environment. Below you will find a link to the “Coworker Survey”, hosted on SurveyMonkey.com. The survey itself will take between 5 and 10 minutes to complete.

To access the survey, please click on the link below or copy and paste the web address into your web browser:

SurveyMonkey “Coworker Survey” Link

You will be asked to enter a secret code before beginning the “Coworker Survey”. The secret code that your coworker created is secret code that the incumbent created in the “Employee Survey”.

Please do not identify yourself or your coworker (i.e., do not provide either your or your coworker’s full first name and last name). The information that your coworker provided regarding his/her name (first name and last initial ONLY) and your email address will not be retained. Only the secret code will be kept. It will be used to match your answers to the answers of your coworker.

Participation in this study is strictly voluntary and you can discontinue participation at any time. There will be no penalty or loss of benefits to which you are entitled if you choose not to participate. Your coworker will not see your answers. Your responses will not be tracked to you as an individual or to your workgroup.

Thank you in advance for your participation. Feel free to contact me if you have any questions.

Sincerely,

Angeline Goh, M.S.
Doctoral Candidate, Department of Psychology
University of South Florida
4202 E. Fowler Avenue, PCD 4118G
Tampa, FL 33620
agoh@mail.usf.edu
650.255.8588
Appendix N: Coworker Survey Cover Letter

Dear Coworker:

This survey forms the basis of a study of how people perceive and respond to the conditions of their jobs. The purpose of this study is to look at how people's perceptions of their workplace affect their feelings about their jobs and influence the various ways they behave at work.

You have been asked to fill out this survey by a coworker in your workgroup or department. Please begin by entering the secret code that your coworker created in the space provided below. Next, please answer how you see YOUR COWORKER'S job conditions and behaviors based on your observations, experiences, impressions, and conversations with YOUR COWORKER. Please answer the questions by yourself, without discussing them with your coworker. It will take between 5 and 10 minutes to complete.

Please enter the secret code created by your coworker in the blank space below.
Secret code __________________

Please do not identify yourself or your coworker (i.e., do not provide either your or your coworker’s full first name and last name). The information that your coworker provided regarding his/her name (first name and last initial ONLY) and your email address will not be retained. Only the secret code will be kept. It will be used to match your answers to the answers of your coworker.

Participation in this study is strictly voluntary and you can discontinue participation at any time. There will be no penalty or loss of benefits to which you are entitled if you choose not to participate. Your coworker will not see your answers. Your responses will not be tracked to you as an individual or to your workgroup.

Thank you in advance for your participation. Feel free to contact me if you have any questions.

Sincerely,

Angeline Goh, M.S.
Doctoral Candidate, Department of Psychology
University of South Florida
4202 E. Fowler Avenue, PCD 4118G
Tampa, FL 33620
agoh@mail.usf.edu
650.255.8588
About the Author

Angeline Goh received a Bachelor’s degree in Psychology from San Francisco State University (SFSU) in 1998. She graduated with College and University Honors from SFSU in 2000, where she was awarded a Master’s degree in Industrial/Organizational Psychology. In 2000, Angeline was accepted into the Industrial/Organizational Psychology doctoral program at the University of South Florida (USF). She taught a variety of courses while attending USF, and was awarded the Eve Levine Graduate Teaching Award in 2004. Angeline’s research interests include job satisfaction, occupational stress, counterproductive work behavior, and employee well-being. She has published research in the Journal of Vocational Behavior, the Journal of Criminal Justice, and the Journal of Nonverbal Behavior. She currently resides in the San Francisco Bay Area.