The Role of Irritability in the Relation between Job Stressors, Negative Emotions, and Counterproductive Work Behavior

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Abstract

Researchers have stressed the importance of assessing individual differences in personality as an approach to understanding aggressive and deviant conduct across different contexts. This study investigated the moderation role of irritability, a specific aggression-related disposition, in the process of work stressors that are conducive to counterproductive work behavior (CWB) within the stressor-emotion model. From a total sample of 1,147 Italian workers (53.5% women), high- and low-irritability groups were identified. Then, using a multi-group structural equations model, we simultaneously examined all the relations in both high- and low-irritability groups, and investigated whether these relations were different between them. Results showed that job stressors elicited negative emotions that, in turn, lead to CWB. Moreover, only in high-irritability group some job stressors influenced CWB also directly. Overall irritability moderated mainly the relation among job stressors and CWB but not the relation among job stressors and negative emotions, with the only exception of role conflict. As well, irritability did not moderate the relation between emotion and CWB. Thus, high-irritability employees may be more prone to react aggressively to job stressors via multiple functioning paths. The principal differences between low- and high-irritability individuals could be how they manage the impact of perceived stressors on emotions and behavior.

Keywords

Irritability, Counterproductive Work Behavior, Stressor-Emotion Model, Aggression, Personality

Introduction

A number of researchers have stressed the importance of assessing individual differences in personality as an approach to understanding aggressive and deviant conduct across different contexts (Anderson & Bushman, 2002; Bettencourt, Talley, Benjamin, & Valentine, 2006). Over the past three decades, personality variables, that is "dimensions of individual differences in tendencies to show consistent patterns of thought, feelings and action" (McCrae & Costa, 1995, p. 235), have been investigated in the context of studying major determinants and correlates of social adjustment and well-being, clarifying various mechanisms that are conducive to aggression (Bettencourt et al., 2006; Caprara, Barbaranelli, & Zimbardo, 1996). Indeed, the study of individual differences may pave the way toward a better understanding on how personality structures guide cognitive and affective processes governing aggressive behavior as well as identify potential individual vulnerabilities that may favour deviant conduct in stressful context. Moreover a stronger comprehension of the role of individual differences in aggression response could guide in designing appropriate interventions targeting specific subsets of employees.

Irritability is a specific aggression-related disposition attesting to dysregulation of negative affect in response to frustrating situations (Bettencourt, et al., 2006; Caprara, 1985; Caprara, Cinanni, D'Imperio, Passerini, Renzi, & Travaglia, 1985). It has been instrumental in examining the traditional frustration-aggression model developed by Dollard and his colleagues (Dollard, Doob, Miller, Mowrer, & Sears 1939). Furthermore it has been important in better appreciating the role of emotional regulation in various forms of aggression in both laboratory and natural settings (Berkowitz, 1962, 1993; Caprara, Paciello, Gerbino, Cugini, 2007; Caprara, Renzi, Amolini, D'Imperio, & Travaglia, 1984). In this study we combine the organizational literature with studies on individual differences in aggressive behavior. Specifically, we aim to examine the role of individual differences in irritability in understanding the process of job stressors that are conducive

to aggressive behavior in the workplace, which represents one of the most critical contexts in which aggression problems have persisted (Chappel & Di Martino, 2006). We believe that irritability could be crucial disposition to better understanding why some individuals could feel more negative emotion (i.e., anger) and react more aggressively than others in stressful contexts.

CWB and stressor-emotion model

In industrial and organizational psychology, deviance and aggressive behavior in the workplace have been variably conceptualized and labeled, including organizational aggression (Fox & Spector, 2005; Neuman & Baron, 1998; O'Leary, Griffin, & Glew, 1996), antisocial behavior (Giacalone & Greenberg, 1997), delinquency (Hogan & Hogan, 1989), deviance (Bennett & Robinson, 2000; Hollinger, 1986; Robinson & Bennett, 1995), retaliation (Skarlicki & Folger, 1997), revenge (Bies & Tripp, 2005), violence (Bulatao & VandenBos, 1996; LeBlanc & Kelloway, 2002), emotional abuse (Keashly, 1997) and mobbing/bullying (Zapf & Einarsen, 2005). Some authors introduced the term Counterproductive Work Behavior (henceforth, CWB), referring to both overt acts, such as aggression and theft, and covert (or "passive aggressive") acts, such as purposely failing to follow instructions or doing work incorrectly (Robinson & Bennet, 1995; Spector, Fox, Penney, Bruursema, Goh, & Kessler, 2006). More in details, CWB can be distinguished on the basis of the target: CWB against individuals in the organization (CWB-I) and CWB against the organization as a whole (CWB-O) (Robinson & Bennett, 1995). CWB-I is interpersonally oriented and is functionally equivalent to acts of aggression toward fellow coworkers, including verbal insults, spreading false rumors about or making fun of others, playing mean pranks, uttering racial slurs, and withholding crucial information from others. CWB-O is directed toward the organization and may take the form of enjoying excessive breaks, working on a personal matter instead of working for the employer, withholding effort, violating organizational policies or intentionally working slowly (Bennet & Robinson, 2000; Dalal, 2005; Mount, Ilies, & Johnson, 2006; Penney & Spector,

2008). Although these two domains of CWB are conceptually distinct, they are not independent. More specifically, CWB-O and CWB-I tend to co-occur (Dadal, 2005; Judge, Scott, & Ilies, 2006; Lee & Allen, 2002; Mount et al., 2006). Nonetheless, the magnitude of this relation is moderate, and each of these classes of behaviors shows different and specific patterns of correlations with relevant organizational variables, such as situational constraints, interpersonal conflicts, quantitative workload, role ambiguity, and role conflict, justice, and personality traits (Berry, Ones, & Sackett, 2007; Hershcovis, Turner, Barling, Arnold, Dupré, Inness et al., 2007; Spector & Fox, 2005).

Spector and Fox (2005; also, Spector, 1998) proposed the stressor-emotion model to understand the process that leads to CWB in organizations, considering how both situational and individual factors could operate in concert to elicit harmful organizational behaviors. In particular, their model integrates contextual organizational factors with emotional processes and includes different elements. The first element is a work context characterized by the presence of potential stressors, such as job overloading, interpersonal conflicts, lack of infrastructures, justice, role conflict, and role ambiguity. This notwithstanding, the existence of one or more of these conditions is not *per se* sufficient to lead to CWB. In fact, capitalizing on the frustration-aggression theory (Dollard et al., 1939) and on work stress theories (Jex & Beehr, 1991; Spector & Fox, 2005), they hypothesized that any frustrating conditions in an organizational context may be connoted as a stressor if they substantially interfere with goals, job activities and/or job performance. Hence, another fundamental element is workers' perception of these conditions in terms of how demanding or stressful they are. When the perception elicits negative feelings, people may in turn enact aggressive behaviors as a strategy to reduce their unpleasant emotional state (Penney & Spector, 2008; Spector, 1998). In sum, CWB represents an inefficacious behavioral response of strain aimed at managing a stressful situation and at reducing the consequent unpleasant negative emotions (Fox & Spector, 1999; Fox, Spector, & Miles, 2001; Krischer, Penney, & Hunter, 2010; Penney & Spector, 2008; Rodell & Judge, 2009; Spector, 1975, 1997).

A significant portion of the research on CWB has focused attention on the above-mentioned situations or conditions, which may be denoted as highly potential stressors (Chen & Spector, 1992; Fox & Spector, 1999; Fox, et al., 2001; Miles, Borman, Spector, & Fox, 2002; Peters & O'Connor, 1980; Spector, Dwyer, & Jex, 1988). In particular, these studies have highlighted some of the most typical conditions that are associated with the experience of negative emotion in relation to a job and CWB: the lack of resources, equipment, etc. restraining employees from completing their job (organizational constraints); the presence of high and unmanaged conflicts between people (interpersonal conflict) and the perception of high-level workload. Furthermore several researches have found that the exposure to role stressors can determine feelings of frustration and deviance behaviors. According to Rizzo and collaborators (Rizzo, House, & Lirtzman, 1970), role stressors include two factors, namely role conflict and role ambiguity. The former takes place when employees face contradictory role expectations on job (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964), whereas the latter takes place when employees are required to constantly juggle conflicting demands across the different roles they hold (Rizzo et al., 1970).

Yet, only a few researchers have investigated the contribution of negative emotions to the relation between stressors and behavior (i.e., Bowling & Eschleman, 2010; Fox et al., 2001; Rodell & Judge, 2009). Emotions play a pivotal role in the process of work stress, since they represent immediate reactivity to perceived stressful situations (Lazarus, 1991; Payne & Cooper, 2001), and facilitate behavioral responses and physiological activation (Cartwright & Cooper, 1997; Spector, 1998). For these reasons, negative emotions dimension is included as a mediator of the relation between stressors and behavior in the stressor-emotion model of CWBs (Fox et al., 2001). Nonetheless, there is a limited empirical support to the entire posited process from context to behavior through emotions (Bowling & Eschleman, 2010; Fox et al., 2001; Rodell & Judge, 2009).

In this process, a crucial feature is the modulating role of personality with respect to emotional and behavioral reactivities in stressful contexts (Spector & Fox, 2005; Weiss & Cropanzano, 1996).

Specifically, personality characteristics intervene in the perceptions, emotional responsiveness and behavioral reactivities: given the same conditions, not all individuals will perceive and respond to them in the same manner (Bolger & Schilling, 1991; Bolger & Zuckerman; 1995; Spector & Fox, 2005). Personality structures intervene in the process through which people appraise work context and link specific patterns of appraisal to specific emotions and behavioral tendencies (Caprara & Cervone, 2000; Lazarus, 1991; Lazarus & Smith, 1988). Even though the stressor-emotion model forecasts a process from environment to CWB through emotions, the majority of these studies examined the role of individual differences exclusively in the relation between stressors and CWB (see Fox et al., 2001, for trait anger; Penney & Spector, 2002, for narcissism; Perlow & Latham, 1993, for locus of control; Flaherty & Moss, 2007, for neuroticism; Bowling & Eschleman, 2010, for conscientiousness and negative affectivity trait). Only Yang and Diefendorff (2009) examined the contribution of personality in the entire process, finding that trait negative emotion moderates the relation between interpersonal justice and daily negative emotions but not the relation between this specific stressor and CWB.

Irritability

Irritability is a specific aggression-related personality disposition derives from the original frustration–aggression hypothesis as revised by Miller (1941), which states that frustration produces, among other things, an instigation toward aggression that tends to dissipate over time unless appropriate aggressive responses and targets are made available. Focusing on the instigation to aggress following frustration, irritability was defined as the tendency to react with aversive, impulsive and aggressive feelings and behaviors at the slightest frustration, disagreement or hassle (Caprara et al., 1985). The construct was substantially related to one's capacity to tolerate frustration and to dominate excitation and one's reactions in either real or apparent situations of danger, offense, or attack. Irritability is substantially relevant to understanding the influence of both

excitatory processes and defective control over emotion in fostering aggressive reactivities to provocative or otherwise aversive situations. In particular, irritability was extensively studied examining emotional processes conducive to aggression in experiments designed to investigate the frustration-aggression hypothesis (Miller, 1941), the cognate hypothesis such as the weapon effect (Berkowitz & LePage, 1967), the transfer of excitation (Zillmann, 1979) and the dissipation of aggression over time (Konecni, 1975). More specifically, in both general and experimental studies exploring the influence on aggression response of aggressive eliciting cues as slide portraying weapons (Caprara et al., 1984), of strenuous physical exercise increasing sympathetic excitation (Caprara, Renzi, D'Augello, D'imperio, Rielli, & Travaglia, 1986), and of passage of time between instigation and opportunity to aggress (Caprara, 1986) irritable individuals select higher shocks than others.

Findings clearly showed that irritability could amplify the effects of noxious stimulation by enhancing excitement, by hindering emotional-cognitive coping processes and/or by fostering the loss of personal control over the source of excitement. In this way, as attested in experimental studies, irritability could increase anger feelings and an aggressive response as a result of frustration. This is probably due to the quasi-automatic activation of a specific behavioral sequence (namely provocation – excitement – aggression), that facilitates aggressive reactivities to instigator situations (Caprara et al., 1985, Caprara, Perugini, & Barbaranelli, 1994). Furthermore as suggested by Bettencourt and colleagues (2006) irritable individuals are more incline to "being angrier in general and taking offence to the slightest provocation" (p. 755). In this sense they could be more vulnerable to frustrating situations due to a more hostile cognition and a more negative affective reaction. A large body of research has demonstrated the moderating role that individual differences in irritability exert on aggression as well as on others forms of deviant conduct across different ages and different domains of functioning (Caprara et al., 1985, 2007; Stanford, Greve, & Dickens, 1995). Recent longitudinal findings have shown that higher stability of irritability points to the

biological roots of anger regulation (Caspi, 2006; Caspi, Henry, Mc Gee, Moffit, & Silva, 1995; Colder & Stice, 1998; Rothbart & Bates, 1998). This is in accordance with the literature on personality that traces irritability to temperament. In fact, the high stability of irritability highlights its dispositional nature, and its consequent low susceptibility to being influence by contextual factors.

In studying the stressor-emotion model of CWB in the organizational setting, we believe that irritability is instrumental to better appreciating the role of both cognitive and affective processes involved in the emotional regulation, conducive to CWB in response to stressor situations. In fact, irritability may help to uncover the reason why some individuals more frequently and more intensely feel negative emotion than others in response to provocation, disagreement, or frustrations and why some individuals react to stressful situations more aggressively than their colleagues.

Aims and Hypotheses

Given these premises, the purpose of this study is to investigate the role of specific job stressors (namely interpersonal conflict, organizational constraints, workload, role ambiguity and role conflict), emotions and individual differences in irritability in explaining both CWB-I and CWB-O. In particular, we simultaneously investigate the *nomological* net among the different constructs specified within the frame of stressor-emotion model of CWB (see Figure 1) in two groups of employees: high and low irritable. We are not aware of any research that has examined all the stressor-emotion relations simultaneously while considering a specific aggression-related disposition. Moreover, to our knowledge this is the first study that validates this model within an Italian population.

Figure 1

Specifically we formulated the following hypotheses:

Hypothesis 1: Job stressors will be positively related to negative emotions, and negative emotions will be in turn positively related to both CWB-I and CWB-O (full mediation) in both high- and low-irritability groups.

Hypothesis 2: Irritability will moderate the relation between stressors and negative emotions. Those individuals that are more vulnerable to frustration and that are more inclined to be angrier and to be offensive and aggressive are more likely to react to job stressors with negative emotion.

Hypothesis 3: Irritability will moderate the relation between negative emotions and both CWB-I and CWB-O. Those individuals that are more vulnerable to frustration and that are more inclined to be angrier and to be offensive and aggressive are more likely to respond to negative emotion with both CWB-I and CWB-O.

Gender was considered as a covariate for all independent and dependent variables. A vast amount of literature considers males as more prone to react aggressively to provocation (Baron, Neuman, Geddes, 1999; Bettencourt & Miller, 1996; Eagly & Steffen, 1986; Rutter & Hine, 2005) and females as more prone to experience states of negative affectivity (Krampen, Effertz, Jostock, & Muller, 1990). Moreover, the literature on work stress has suggested that females can be more vulnerable to work stressors (differential vulnerability hypothesis) and more expose to work stressors (differential exposure hypothesis) (Day & Livingstone, 2003; McDonough & Walters, 2001; Narayanan, Menon, & Spector, 1999; Roxburgh, 1996).

Method

Participants and Procedure

Participants were 1,147 (53.5% women) Italian working adults, with a mean age of 40 years (SD = 11), employed in a broad range of industries, ranging from health care to sales and retail to manufacturing, mainly in the private sector (62.6%). The great majority (52.4%) had a high school education; 37.3% had at least a Bachelor's Degree; and the remaining participants had lower educational qualification or did not answer (.4%). Pertaining to employment contract type, 68.7% were permanent employees; 12.2% were temporary employees; 15.7% had other types of contracts; and 3.4% of respondents did not indicate their type of contract. The mean job seniority was 16 years (SD=11) and, in particular, participants had held their position (at the time of the study) for 10 years (SD=10) on average. It was a convenience sample of employees with very heterogeneous jobs recruited by a group of bachelor trained psychology students. Each employee filled in the questionnaire individually and returned it the same day they received it. Before starting, the researcher explained to them that their responses would be absolutely confidential and that the research was not commissioned by the organization for which they worked. Participants were not paid for their participation in this study.

Measures

The anonymous self-report survey included measures of job stressors (interpersonal conflict, organizational constraints, workload, role ambiguity, role conflict), negative emotions in response to job, counterproductive work behaviors (toward persons and toward organization) and irritability.

Interpersonal conflict was measured by the Italian version of the Interpersonal Conflict at Work Scale (ICAWS; Barbaranelli, Fida & Gualandri, 2012; Spector & Jex, 1998). This scale is a four-item Likert scale measuring the amount of conflict or discord experienced by an individual at work. Respondents were asked how often they get into arguments at work and how often other

people at work are rude to, yell at and/or do nasty things to them (item example: “How often do other people yell at you at work?”). Response options were presented in a five point format ranging from 1 = *less than once per month or never* to 5 = *several times per day*, wherein higher scores indicate more conflict. Internal consistency for the ICAWS in the current sample was .71.

Organizational constraints was measured by the Italian version of the Organizational Constraints Scale (OCS; Barbaranelli et al., 2012; Spector & Jex, 1998). This scale is an eleven-item Likert scale measuring things or situations at work that interfere with task performance. Respondents were presented with a list of eleven situational constraints, based on constraint areas identified by Peters and O’Connor (1980), and were asked how often they found it difficult or impossible to do their job because of each constraint (constraint example: “Lack of equipment or supplies”). Response options were presented in a five-point format ranging from 1 = *less than once per month or never* to 5 = *several times per day*. The coefficient alpha reliability for the OCS in the current sample was .89.

Workload was measured by the Italian version of the Quantitative Workload Inventory (QWI; Barbaranelli et al., 2012; Spector & Jex, 1998). This scale is a five-item Likert scale measuring the quantity and speed of work carried out by the respondents. Participants responded on a five point rating scale ranging from 1 = *less than once per month or never* to 5 = *several times per day* to items such as, “How often does your job require you to work very fast?” Participants were also asked, “How often does your job require you to work very hard?” Higher scores represent elevated workloads. In this study, the coefficient alpha was .86.

Role stressors. Role conflict and role ambiguity were measured by using six and eight items, respectively, from the Role Conflict and Ambiguity Scale (RCA) developed by Rizzo, House, and Lirtzman (1970). Participants responded on a five point rating scale ranging from 1 = *Never or almost never* to 5 = *Very often or Always*. Both role ambiguity and role conflict were scored so that

the greater the score, the greater the perceived stress. The RCA demonstrated good internal consistency for both the role ambiguity and role conflict subscale (.70 and .67, respectively).

Negative emotions. A wide range of negative emotions experienced in response to the job was measured with the Job-Related Affective Well-Being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000). Items on the JAWS asked employees to indicate how often any part of the job has made them feel each of seventeen negative emotional states (such as "angry"). Response options were presented in a five point format ranging from 1 = *almost never* to 5 = *extremely often or always*. The negative emotions score was obtained by averaging scores on the seventeen negative affect items. The coefficient alpha was .90.

Counterproductive workplace behaviors was measured by a reduced version of the Italian version of the Counterproductive Work Behavior Checklist (CWB; Barbaranelli et al., 2012; Spector et al., 2006). This scale is a thirty-item Likert scale measuring a wide range of CWB. Participants were asked to indicate how often they have done each of the behaviors on their present job. Response options were presented in a five point format ranging from 1 = *never* to 5 = *every day*. Higher scores indicate higher levels of CWB. The CWB provided two scores for CWB-I: behaviors that targeted individuals (e.g., stole something from a person at work; did something to make a person at work look bad; insulted someone about their job performance) and CWB-O or behaviors that target the organization (e.g., put in to be paid more hours than worked; purposely did work incorrectly; stole something belonging to an employer). The CWB checklist demonstrated good internal consistency for both the CWB-I (.89) and CWB-O (.79).

Irritability was assessed by the reduced form of the original Irritability Scale (Caprara, 1985). It included 12 items (two control items) measuring the tendency to react impulsively, controversially, or rudely at the slightest provocation or disagreement. Samples of items are these: "It makes my blood boil to have somebody make fun of me," and "When someone raises his voice I raise mine higher." Participants responded on a six point scale (1 = *completely false for me* to 6 =

completely true for me). Higher scores indicate higher levels of Irritability. The Cronbach reliability coefficient was .84.

Analysis and Results

Analytic approach

In order to test our hypothesis we implemented structural equation modeling. We employed this approach for several reasons. First, this statistical model is particularly well-suited for simultaneously investigating all the stressor-emotion model of CWB relations. Moreover it allows us to investigate the mediating role of negative emotions, with respect to both CWB-I and CWB-O. Second, the possibility of simultaneously examining this network across different populations, within the multiple group approach (Bollen, 1989; Scott-Lennox & Scott-Lennox, 1995), allows us to examine the role of a grouping variable, that is irritability, as moderator of the relations among the constructs in the model. In particular, initially two groups of subjects were selected from the total sample according their low (below 25° percentile) or high (above 75° percentile) score in Irritability scale (see Table 1 for demographic characteristics of high and low irritability groups).

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Table 1

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Then, a multiple-group structural equation model was performed, using the low-high irritability score as a grouping variable. We used this approach to test interaction because (a) this is consistent with the experimental literature on the role of irritability as a moderator of the frustration-aggression relation (Caprara, 1982; Caprara et al., 1996), and (b) the introduction of multiplicative components among all of the direct effects in our model would have created serious problems of convergence of parameter estimates to proper numerical solutions. Third, through structural equation modelling we examined both the mediating role of emotions and simultaneously the

moderating role of irritability. The analyses were performed using *M*plus 6.1 (Muthén & Muthén, 1998-2010).

Preliminary Analysis in the total sample

Means, standard deviations, and correlations for all study variables in the total sample are presented in Table 2. This table shows that negative emotions significantly was positively correlated with all variables included in our analyses. Likewise, both CWB-I and CWB-O were significantly correlated with all major variables with the exception of CWB-O, which was not correlated with workload. All of the stressors were significantly correlated with each other, with the exception of role ambiguity, which was not correlated with interpersonal conflict. Finally, irritability was correlated with all measures.

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Table 2

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Descriptive statistics for High and Low irritability groups

Table 3 presents descriptive statistics for the low- and high-irritability groups. The same pattern of relations among variables is evidenced by the correlations in the two groups, even though the magnitude of the correlations between CWB-O and CWB-I as well as among negative emotions and job stressors, was generally stronger, as expected, in the high-irritability group.

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Table 3

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As shown, there were missing data for all variables. In the presence of missing data, estimation of parameters must be adjusted accordingly. To do so, we used maximum likelihood estimation of parameters, a method widely accepted as appropriate for handling missing data (Muthén & Shedden, 1999; Schafer & Graham, 2002) under the assumption that the data are missing at random (Arbuckle, 1996). Before proceeding with the analysis, the normality of the variables was ascertained. Due to the nonnormality of some measures (CWB-I and CWB-O), we computed the inverse of CWB-I and the logarithm of CWB-O to normalize these variables as suggested by Tabachnick and Fidell (2001). The skewness and kurtosis of the computed outcomes varied from .69 for CWB-O to 2.45 for CWB-I.

Structural Model

The analysis of the moderating role of irritability in the stressor-emotion model and the analysis of the mediating role of negative emotions in the relation between stressors and both CWB-I and CWB-O were conducted using a latent variable framework. In particular, to examine our hypothesis, we specified the theoretical model presented in Figure 1 using a multi-group structural equations model. We simultaneously estimated the same pattern of relations among variables for the high- and low-irritability groups. For the study of the mediational role of negative emotions on the relations between each stressor on both CWB-O and CWB-I (*Hypothesis 1*), we used the indirect effect test, with the bootstrap procedure to compute the confidence interval of each effect, available within *M*plus. Then, to examine the moderating effect of irritability (*Hypothesis 2 and 3*), we constrained all parameters to be equal across the two groups. Constraints that were revealed to be untenable, according to the nested chi-square test, evidenced the presence of a moderating effect, pointing to a statistically significant difference in the effect of a variable on another in the high- and low-irritability groups. Finally, to take into account gender differences, we considered gender as a covariate.

Following Bollen (1989), all the stressors, negative emotions and both CWB-O and CWB-I were posited as a single-indicator latent variable. To account for measurement error and thus obtain more precise estimates of structural parameters, error variance for each single indicator was fixed at one minus the sample reliability estimate of the variable, multiplied by its sample variance. Since there was nonnormality of CWB variables despite their transformation, we used *M*plus MLMV as method of parameters estimation, which corrects standard errors as well as the chi-square test statistic for non-normality.

According to a multifaceted approach to the assessment of the model fit (Tanaka, 1993), taking into account the recommendations of Hu and Bentler (1998, 1999), the following fit indices were considered: (a) chi square, (b) Comparative Fit Index (CFI; Bentler, 1990), (c) Root Mean Square Error of Approximation (RMSEA; Steiger, 1990), and (d) Standardized Root Mean Square Residual (SRMR; Jöreskog & Sörbom, 1993). As cut off values we considered: for CFI values equal to or higher than .95 (Hu & Bentler, 1999), for RMSEA values up to .05 (Browne & Cudeck, 1993) and for SRMR values lower than .08 (Hu & Bentler, 1998, 1999) as indicative of a good fit.

The model specified according to Figure 1 showed an unsatisfactory fit, $\chi^2(31) = 53.07$, $p < .01$; CFI =.97; TLI = .94; RMSEA = .047 (CI=.024 - .068), p = .57; SRMR = .044. An inspection of Modification Indices revealed four significant direct effects from the set of exogenous variables to the two dimensions of CWB in the high-irritability group, specifically the relation of both role conflict and role ambiguity with CWB-O and of both role conflict and interpersonal conflict with CWB-I. All of these direct effects were conceptually in accordance with the literature on the influence of stressors on CWB (Bowling & Eschleman, 2010; Fox et al., 2001; Yang & Diefendorff, 2009). The revised model with the four new parameters provided an excellent fit to the data as revealed by the fit indexes considered: $\chi^2(24) = 20.76$, $p = .65$; CFI = 1.00; TLI = 1.01; RMSEA = .000 (CI=.000 - .037), p = .99; SRMR = .024. As shown in figure 2, results of this model partially confirmed our hypothesis.

Figure 2

In accordance with *Hypothesis 1*, role ambiguity, interpersonal conflict, organizational constraints and workload significantly affected negative emotions in both the high- and the low-irritability groups. With regard to role conflict, while in the high-irritability group this stressor influenced negative emotions, this effect was not significant in the low-irritability group. Furthermore, negative emotions significantly influenced CWB-I and CWB-O in both the high- and low-irritability groups. Moreover, our model assumed that stressors would affect both CWB-O and CWB-I indirectly through their influence on negative emotions (see Table 4, which gives the estimates and bootstrap confidence interval). As shown in Figure 2, only partial mediation was confirmed. In particular, some stressors influenced both CWB-I and CWB-O both directly and indirectly. Role conflict influenced CWB-O neither directly nor indirectly for low-irritability employees and both directly (β = .15) and indirectly (β = .03) through negative emotions for high irritability employees. Similarly, role conflict influenced CWB-I only in the high-irritability group both directly (β = .16) and indirectly (β = .02). Role ambiguity influenced both CWB-O and CWB-I indirectly in both the low and high irritability groups (low irritability: β = .05 and β = .04, respectively; high irritability: β = .04 and β = .03, respectively). For the high-irritability group, this stressor also influenced CWB-O directly (β = .15). Job constraints influenced both CWB-O and CWB-I indirectly only in the low-irritability group (β = .05 and β = .04, respectively). While Job workload influenced CWB-O indirectly in both the low- and high-irritability group (β = .03 and β = .02, respectively), it influenced CWB-I indirectly only in the high-irritability group (β = .02). Finally, for both high and low irritability employees, interpersonal conflict influenced both CWB-O and CWB-I indirectly (low irritability: β = .05 and β = .04 respectively, high irritability: β = .04 and

β = .03, respectively). Moreover in the high-irritability group, this stressor also influenced CWB-I directly (β = .18).

Table 4

With regard to *Hypotheses 2 and 3*, our model assumed that irritability would moderate the relation between stressors and negative emotions, and between negative emotions and both CWB-O and CWB-I. As indicated in Figure 2, the results attest for some differences between the low- and high-irritability groups in the strength and significance of some paths. In particular, several regression coefficients are significantly different between the two groups. Specifically, the relation between negative emotions of role conflict and of organizational constraints was significantly different between the high- and low-irritability groups. In accordance with our hypothesis, the results show that while role conflict significantly related to negative emotions in the high-irritability group, it was not related in the low-irritability group. Furthermore, the results show that the strength of the path from organizational constraints to negative emotions is significantly different for the high- and low-irritability group. In particular, the beta coefficient is higher for the low-irritability group than the high-irritability group.

While the first moderating effect is in the hypothesized direction (the effect is stronger in the high-irritability group), the moderating effect involving organizational constraint and negative emotions is in the opposite direction (the effect is stronger in the low-irritability group). This unexpected effect may have a statistical explanation and therefore it needs to be interpret with caution: in the low irritability group, organizational constraints is the variable showing the higher correlation with negative emotions (this correlation is .463), while in the high-irritability group this

correlation, although being high (.411), is not the higher one. Moreover, in the high-irritability group, organizational constraints dimension is correlated with the other stressors (its average correlation is .35). Accordingly, we believe that the direct effect of organizational constraints on negative emotions in this group is partially absorbed by the other independent variables (in particularly, by interpersonal conflicts whose effect is the higher in the high-irritability group).

Furthermore, as indicated above, only in the high-irritability group some stressors influence directly CWB. As showed in Figure 2 for high-irritability employee role conflict significantly affect both CWB-O and CWB-I, interpersonal conflict significantly affected CWB-I, and role ambiguity significantly affected CWB-O. Next, Figures 3 to 8 show the graphical representation of the interaction between stressors and irritability in relation with negative emotions and in relation with both CWB-I and CWB-O. In particular, these figures show regression of negative emotions on organizational constraints, of negative emotions on role conflict, of CWB-I on interpersonal conflict, of CWB-I on role conflict, of CWB-O on role ambiguity and of CWB-O on role conflict, while the other predictors are held constant separately for both the high- and low-irritability groups.

The analysis of the significant interactions was further explored by means of post-hoc simple slopes analysis. This analysis allows to obtain "separate group slopes (simple slopes for groups)" (Cohen, Cohen, West, & Aiken, 2003, p. 381), thus allowing to test "whether a particular variable is or is not a significant predictor of Y in each and every group" (Cohen et al., 2003, p. 380). Table 5 summarizes these results. The difference among slope coefficients was also examined with test for significance difference among B coefficients. These tests evidenced significant differences among the slope coefficients (p_{diff} <.05) with the exception of the effect of role conflict on CWB-O that is significant for p< .10 and of organizational constraints on negative emotion that is not significant (p_{diff}=.48). This last result confirmed that the moderation effect emerged in the SEM model was a statistical artefact and therefore is not to be interpret. Moreover, these results suggested that the

moderation effect of irritability on the relation between role conflict and CWB-O emerged in the SEM model must be interpreted with caution.

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Table 5

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Figure from 3 to 8

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Finally, with regard to the effect of gender as a covariate, the results attest for some gender differences that are the same in both the high- and low-irritability groups. In particular, in both groups, males scored higher in CWB-I (high irritability group β = - 16, low irritability group β = - .10) as well as in CWB-O (high irritability group β = - 11, low irritability group β = - 08), while females scored higher in negative emotions (high irritability group β = 17, low irritability group β = .13). Note that gender was scored 0 for males, and 1 for females; so, a negative beta indicates higher scores for males, and a positive beta indicates higher scores for females.

Overall, in the low-irritability group, predictors explained 37% of the variance in negative emotions, 8% of the variance in CWB-I and 8% of the variance in CWB-O. In the high-irritability group, predictors explained 36% of the variance in negative emotions, 12% of the variance in CWB-I and 14% of the variance in CWB-O.

Discussion

Consistently with the stressor-emotion model of CWB, we found that job stressors elicited negative emotions that, in turn, led to both CWB-I and CWB-O. These findings extend previous

studies by testing simultaneously, within a structural equation model framework, all the paths included in the stressor-emotion model (e.g., Bowling & Eschleman, 2010; Fox et al., 2001; Rodell & Judge, 2009). Moreover, in the same statistical model another important feature has been examined; that is, the differences between high and low-irritability employees in the process from stressors to CWB. Specifically, as hypothesized, we found that in both high- and low-irritability groups, (a) job stressors related to negative emotions, and (b) negative emotions related to both CWB-I and CWB-O. Furthermore, we found that only in low-irritability group there was a full mediation of negative emotions in the relations between job stressors and both CWB-I and CWB-O (*Hypothesis 1*). In high-irritability group, unexpectedly, these relations were only partially mediated by negative emotions . Specifically in this group at least some job stressors influenced CWB both directly and indirectly .Moreover although individual differences in irritability moderated also the relation among job stressors and negative emotion (*Hypothesis 2*) in the case of role conflict, they never moderated the relation between emotion and CWB (*Hypothesis 3*).

Regarding the impact of perceived job stressors on negative emotions, we found that the strength and the statistical significance of the path between role conflict and negative emotion was different in the high- and low-irritability groups. In particular, this dimension, which can be defined as a lack of congruence and compatibility among work-related demands, influenced emotion only for high-irritability employees. Therefore, high-irritability employees seem to be generally more sensitive to any conflict and a role conflict in their work context heightened the stress or dispositional conflicts they generally perceived and may be more salient in their experience of negative emotion. It is likely that a highly irritable employee may be less tolerant toward the frustration derived from the presence of more sets of incompatible demands, as well as toward the perception of unclear and inaccessible goals. A high-irritability employee could have to put in more effort than a low-irritability employee to dominate arousal coming from the frustrating stressor of conflicting roles. In other words, low-irritability employees are generally calmer and less

susceptible to these same stressful conditions; thus, they are more capable to cope with conflicting demands related to their roles. So, this stressor neither fuels their negative emotions, nor stimulates directly their counterproductive reactivities toward the organization.

In contrast, role ambiguity, which can be defined as a lack of clarity and specificity in the expected functions and responsibilities associated to a role, influenced negative emotions with the same strength in both the high- and low- irritability groups. Since role ambiguity may affect-individuals' self-definition and self-image, it is likely that role ambiguity influenced emotion independently by individuals' sensitiveness to frustration and provocation. Similarly, interpersonal conflict and workload affected negative emotions with the same strength in both high- and low-irritability groups. This means that both high- and low-irritability employees are equally sensitive to the presence of heightened and explicit conflicts between people and to the perceived nonsustainability of work assignments, probably because these stressors may reflect dysfunctional organizational management that could frustrate workers independently from their individual characteristics in irritability. Moreover, it is probable that, as suggested by several authors, other personality variables (such as need for clarity, perceived control and self–efficacy) could intervene in these relations (see e.g., O'Driscoll & Beehr, 2000). With regard to the part of the stressor-emotion model focusing on the relation between emotions and CWB, results showed that negative emotions influenced both CWB-I and CWB-O both in high and low-irritability group. In this sense, both high- and low-irritability employees react aggressively in the same way as a strategy to reduce their unpleasant emotional condition when experiencing negative feelings in response to the perception of job stressors.

Overall, our results are in line with the stressor-emotion model of CWB, adding support to the hypothesis of the mediational role of negative emotions in both high- and low-irritability groups. The highlighted process from perceived job stressors to aggressive behaviors is consistent with the organizational literature (Fox & Spector, 1999; Fox et al., 2001; Neuman & Baron, 1998; Penney &

Spector, 2008; Spector, 1975, 1997). Furthermore, it is not surprising that only for high-irritability employees, job stressors influenced CWB not only through the mediation of emotions, but also directly. High-irritability employees could engage CWB-I in reacting to interpersonal conflict and to role conflict as well as CWB-O in reacting to role conflict and ambiguity. This result is in accordance with most experimental research (Caprara, 1985; Caprara et al., 1984; 1986) that has emphasized how, in different situations of instigation, a large portion of variability in behavioral response can be ascribed to stable personality disposition as irritability, which render individuals more prone to act or to react aggressively, immediately and indirectly. Thus, irritability characterizes individuals who are not only more prone to feel negative emotional feelings in this kind of situations, but also more prone to recourse of aggressive behavior under stressful and frustrating situations.

It is worth noting that, although clearly stated within the stressor-emotion model, few studies have addressed this mediational role of negative emotions within a comprehensive analytical framework (Bowling & Eschleman, 2010; Fox et al., 2001; Rodell & Judge, 2009). Statistical mediational analysis is a straightforward strategy to address this issue. In our study, we demonstrated the mediating role of emotions, consistent with the theoretical statements stemming from the Spector and Fox (2005) model of CWB. This mediation is also relevant for practical applications (see in this regard MacKinnon, 2008) since interventions may enhance employees' capability to cope with perceived stressors and, in turn, reduce their impact. In fact, this will reduce employees' negative emotions to stressors and mitigate the consequent CWB. If this is true for employees generally, it is even more so the case for high-irritability employees. In this sense the irritability moderation effect suggests that organizations should design specific intervention targeting particular subsets of employees on the basis of their individual vulnerability to specific work conditions that in a certain way interact with their individual characteristics. For instance, considering the high stability of irritability, organizations should specifically train employees to

improve their capacity in cognitive reconstructing, with the purpose of widening their conscious perspective and of changing self-defeating perception of stressors from threatening to nonthreatening (Payne & Cooper, 2001; Seaward, 2011). Moreover interventions, not only for high irritable employees, could be design to increase emotional resilience and self efficacy in managing negative emotions, improving the ability of individuals to handle for example anger experiences.

Undoubtedly, the cross-sectional nature of our data does not allow us to draw alternative causal relations among our variables, even though the posited model is strongly grounded in prior theory (Spector & Fox, 2005). Nonetheless, future longitudinal and experimental researches would strengthen the tested model. Finally, another limitation of this research is the utilization of self-report instruments: however, Fox, Spector, Goh and Bruursema (2007) demonstrated the convergence between self- and peer-reports of the majority of stressor-emotion model measures.

In sum, the results of our present study suggest that the individual differences in irritability moderate the relation between perceived stressor and CWB and partially the relation between job stressor and negative emotions but they do not moderate the relation between negative emotions and behavior. Both low- and high-irritability individuals have the same probability to engage in CWB if they feel negative emotion due to stressful work contexts and use these undesirable behaviors to cope with these negative feelings. The principal differences between low- and high-irritability individuals could be how they manage the impact of a perceived stressor on emotions and behavior. In other terms, it is possible to posit that in the relation between cognition and emotion, and between cognition and behavior, individual dispositions intervened in how the perception of a stressful context could be translated into negative emotion and aggressive behavior. In light of the studies that focused on the role of personality in the stressor-emotion model, future studies should extend these findings by exploring the contributions of other dimensions, such as moral and unethical processes, self-efficacy in managing negative emotions conducive to aggressive and deviant behaviors.

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Table 1. Socio-demographic characteristics separately for the low- and high-irritability groups

		Low irritability group (N = 330)	High irritability group (N = 329)
Gender	Males	175 (53%)	130 (40%)
	Females	152 (46%)	196 (60%)
Education	Bachelor's degree	122 (37%)	113 (34%)
	High school degree	186 (56%)	175 (53%)
	Lower educational qualification	21 (6%)	39 (12%)
Type of contract	Permanent	253 (76%)	213 (65%)
	Temporary	29 (9%)	48 (15%)
	Other	39 (12%)	59 (18%)
	Mean Age	40.7	38.8
Job tenure	Overall	10 (SD = 9.5)	10 (SD = 9)
	Their position	16 (SD = 11)	16 (SD = 11)

Table 2. Descriptive statistics among all study variables for the total sample

	N	Mean	SD	1	2	3	4	5	6	7	8	
1. Interpersonal Conflict	1140	2.10	.72	(.71)								
2. Workload	1140	3.40	.83	.26**	(.86)							
3. Constraint	1139	2.32	.78	.37**	.27**	(.89)						
4. Role ambiguity	1143	2.47	.80	.04	.10**	.20**	(.70)					
5. Role conflict	1144	2.43	.81	.21**	.18**	.39**	.22**	(.67)				
6. Negative emotion	1144	2.09	.66	.33**	.24**	.39**	.26**	.29**	(.90)			
7. CWB-O	1145	1.40	.11	.09**	.01	.22**	.14**	.18**	.25**	(.79)		
8. CWB-I	1147	1.20	.15	.21**	.06*	.21**	.07*	.19**	.23**	.54**	(.89)	
Irritability	1147	3.80	1.23	.13**	.07*	.14**	.16**	.11**	.28**	.20**	.23**	(.84)

Note. Cronbach's α reliabilities for the scales are shown along the diagonal. ** significant at the *p <.001;* * significant at the *p <.05*

Table 3. Descriptive statistics among all study latent variables separately for the low- and high-irritability groups

	Low Irritability			High Irritability										
	N	M	SD	N	M	SD	1	2	3	4	5	6	7	8
1. Conflict	330	1.97	.68	326	2.20	.79	-	.35**	.38**	.11*	.28**	.43**	.13**	.29**
2. Workload	330	3.30	.83	326	3.42	.90	.37**	-	.28**	-.26**	.30**	.28**	.05	.14**
3. Constraints	328	2.13	.76	327	2.41	.85	.49**	.29**	-	.29**	.47**	.41**	.18**	.20**
4. Role ambiguity	331	3.69	.78	327	3.40	.42	.03	.02	.24**	-	.21**	.30**	.22**	.09
5. Role conflict	331	2.29	.81	328	2.46	.85	.30**	.18**	.47**	.49**	-	.39**	.25**	.27**
6. Negative emotions	330	1.81	.57	329	2.28	.69	.42**	.29**	.46**	.32**	.29**	-	.26**	.26**
7. CWB-O	330	1.28	.28	328	1.47	.46	.11*	.07	.15**	.14*	.18**	.21**	-	.59**
8. CWB-I	330	1.10	.18	320	1.26	.39	.16**	.08	.15**	.08	.15**	.18**	.43**	-

Note. Correlations for the low-irritability group are presented below the diagonal; Correlations for the high-irritability group are presented above the diagonal. ** significant at the $p < .01$

Table 4. Indirect estimates and bootstrap confidence interval of the indirect effects from stressors to both CWB-I and CWB-O

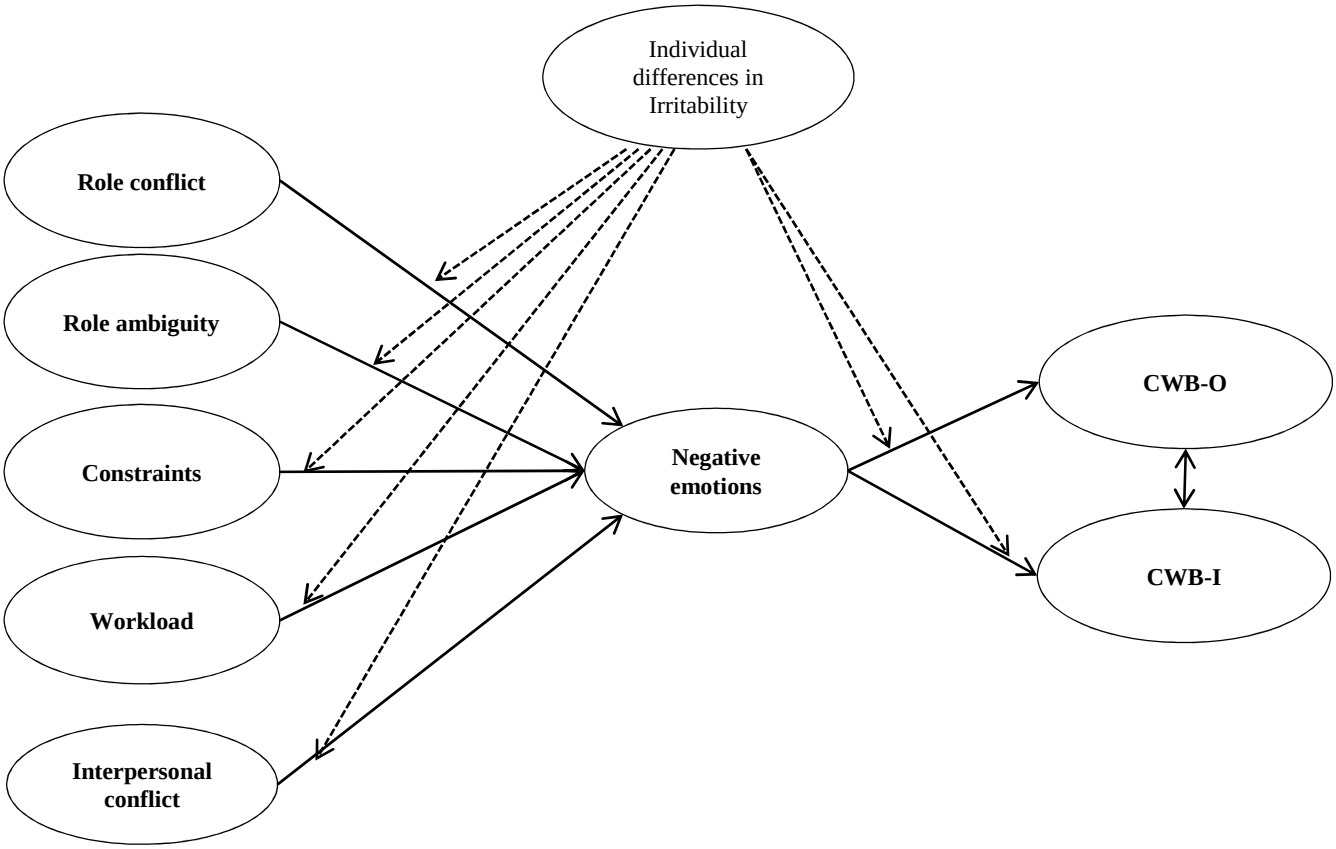
	Low Irritability		High Irritability	
Indirect Effect	Estimate	CI	Estimate	CI
Role conflict →Neg. Em → CWB-I	.01	-.023 ~ .044	**.03**	.001 ~ .013
Role ambiguity →Neg. Em → CWB-I	**.04**	.003 ~ .080	**.03**	.001 ~ .056
Constraint →Neg. Em → CWB-I	**.04**	.001 ~ .085	.02	.006 ~ .040
Workload →Neg. Em → CWB-I	.02	-.001 ~ .046	**.03**	.001 ~ .032
Interp. conflict →Neg. Em → CWB-I	**.04**	.005 ~ .076	**.03**	.003 ~ .062
Role conflict →Neg. Em → CWB-O	.01	-.050 ~ .025	**.03**	.001 ~ .064
Role ambiguity →Neg. Em → CWB-O	**.05**	.016 ~ .082	**.04**	.012 ~ .065
Constraint →Neg. Em → CWB-O	**.05**	.011 ~ .091	.02	-.005 ~ .050
Workload →Neg. Em → CWB-O	**.03**	.006 ~ .049	**.02**	.005 ~ .040
Interp. conflict →Neg. Em → CWB-O	**.05**	.018 ~ .078	**.04**	.016 ~ .072

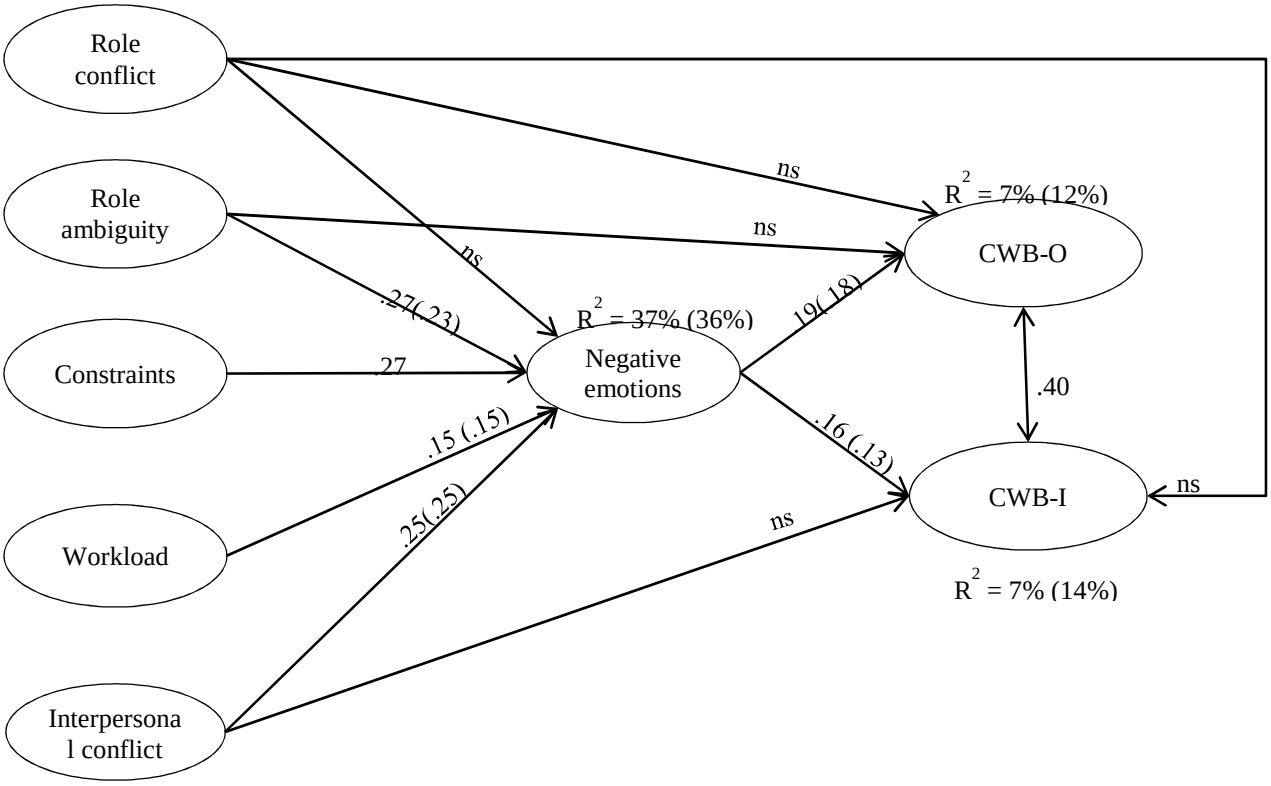
Note. In bold the significant estimates. CI = 95% bootstrap confidence interval

Table 5. Results of Simple Slope Interaction effect

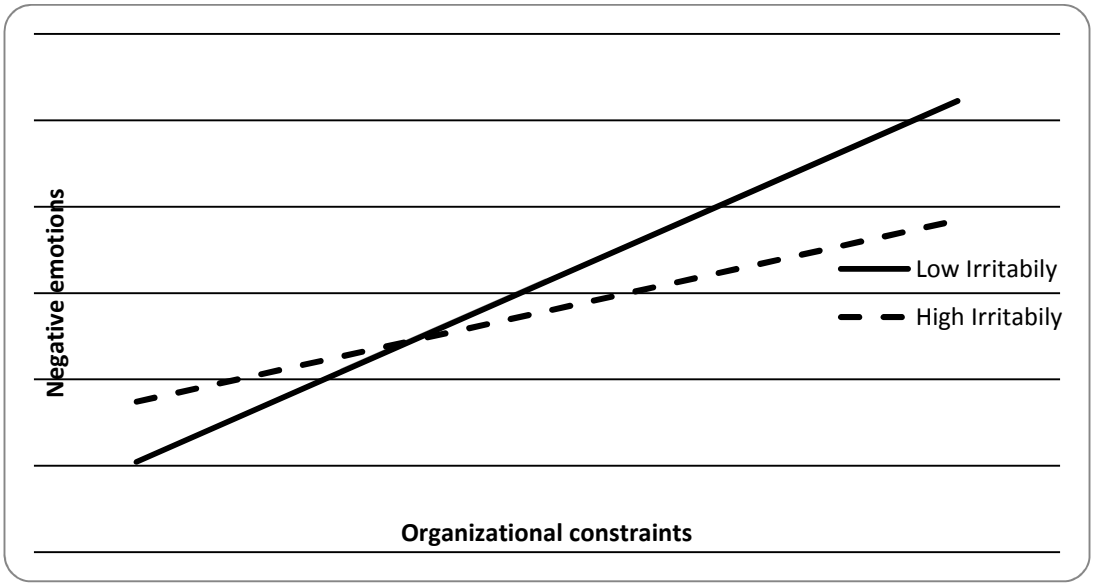
Independent	Dependent	Low Irritability		High Irritability	
		B	beta	B	beta
Role ambiguity	CWB-O	.01+	.07	.03+	.17
Role conflict	CWB-O	.02*	.09	.03*	.16
Role conflict	CWB-I	.02ns	.04	.06ns	.18
Role conflict	Negative Em.	.15	.26	.13	.23
Constraint	Negative Em.	.31	.31	.24	.28
Conflict	CWB-I	.02*	.05	.09*	.20

Note. All coefficients are significant at the $p < .001$ level, except where noted: + $.05 < p < .10$, * $p < .05$, ns $p > .10$.

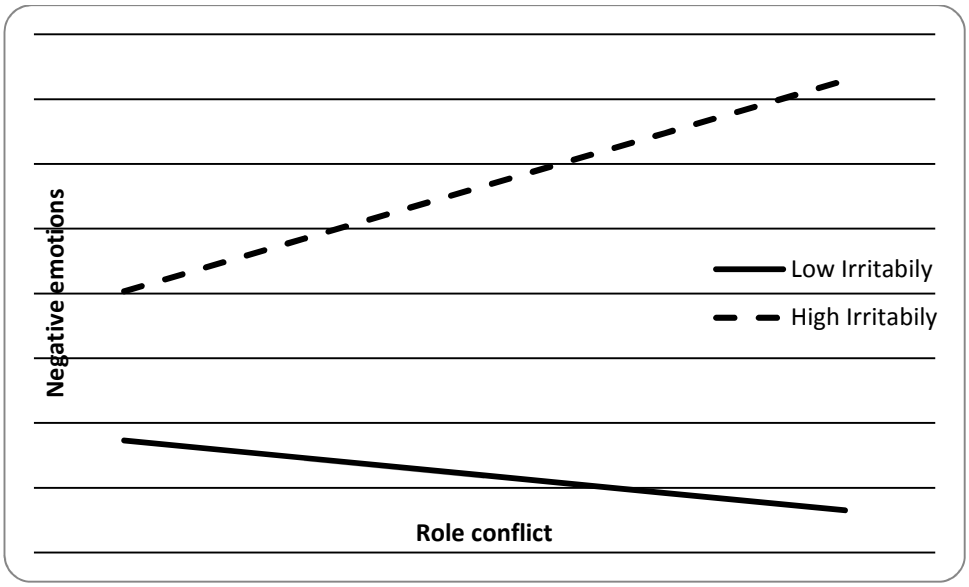

Individual differences in Irritability
Role conflict
Role ambiguity
Constraints
Workload
Interpersonal conflict
Negative emotions
CWB-O
CWB-I



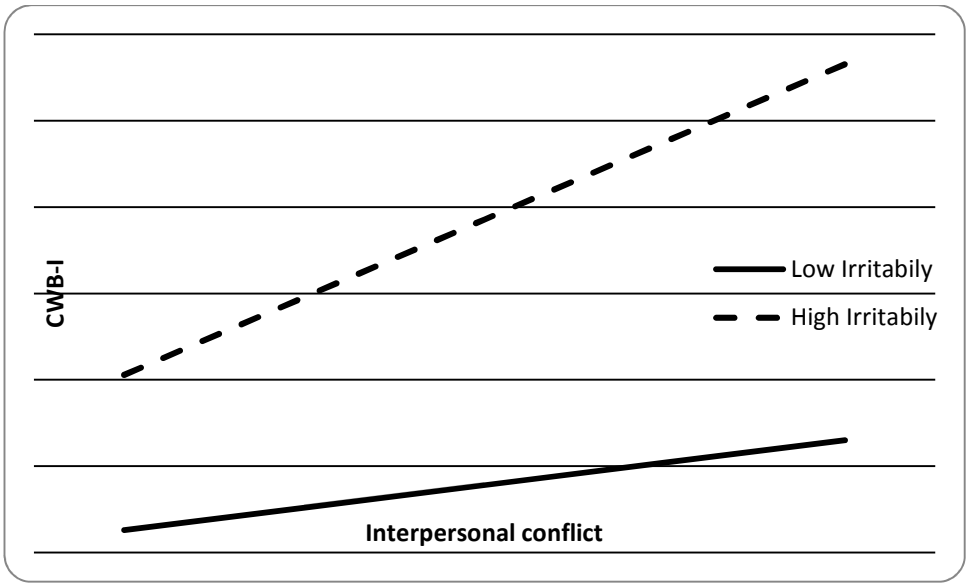
Note. The first coefficient in each structural link is for the low-irritability group, and the second coefficient in parentheses is for the high-irritability group. The asterisk indicates a significant difference in the path coefficient between the groups.



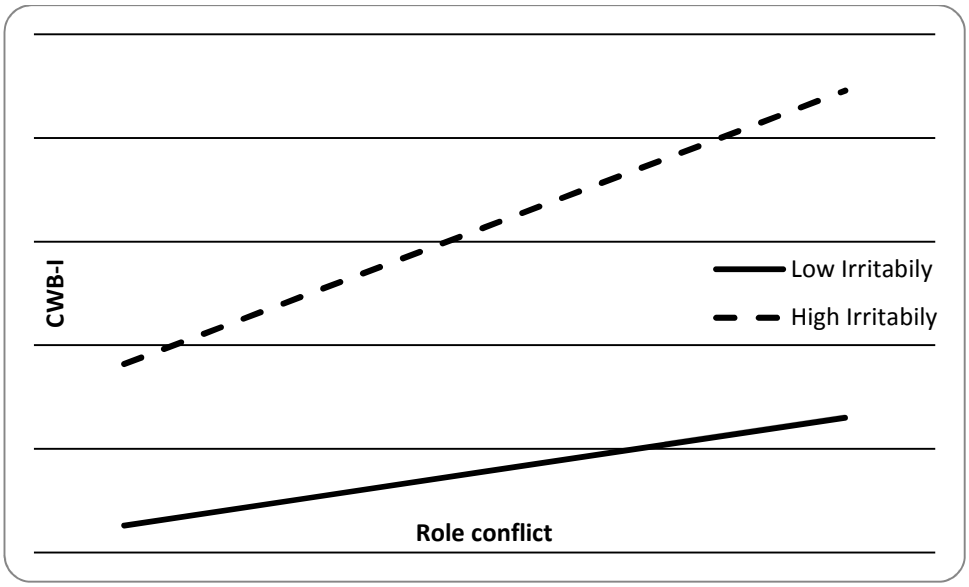
Note. Intercept and slope coefficients were derived from the MPLUS multiple group unstandardized solution of the model in Figure 2.



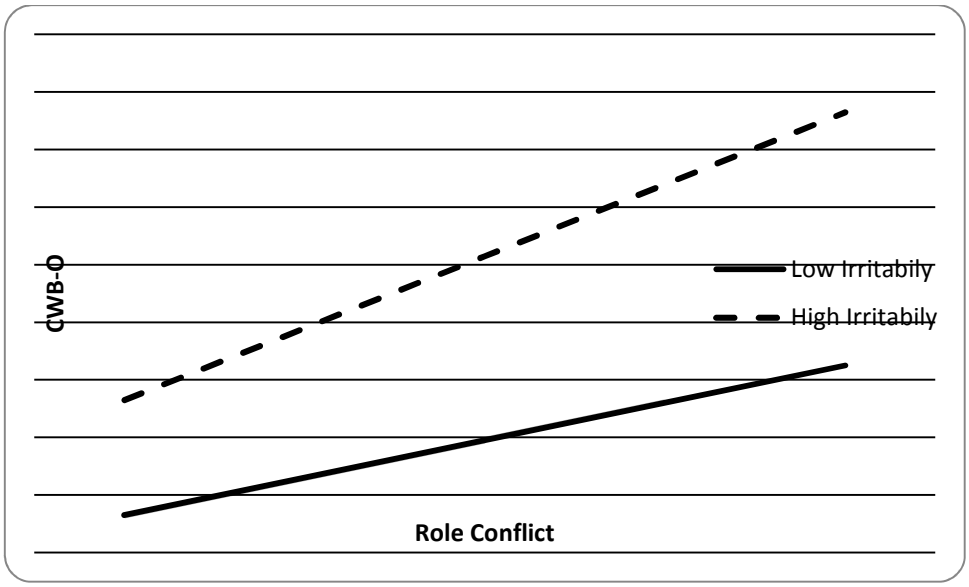
Note. Intercept and slope coefficients were derived from the MPLUS multiple group unstandardized solution of the model in Figure 2.



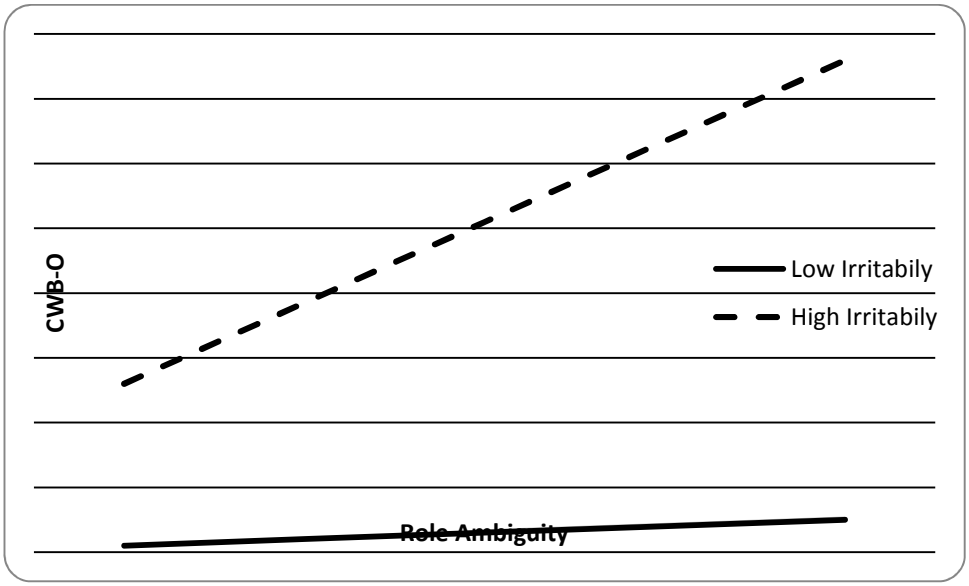
Note. Intercept and slope coefficients were derived from the MPLUS multiple group unstandardized solution of the model in Figure 2.



Note. Intercept and slope coefficients were derived from the MPLUS multiple group unstandardized solution of the model in Figure 2.



Note. Intercept and slope coefficients were derived from the MPLUS multiple group unstandardized solution of the model in Figure 2.



Note. Intercept and slope coefficients were derived from the MPLUS multiple group unstandardized solution of the model in Figure 2.