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Violent Splits or Healthy Divides? Coping With Injustice through Faultlines

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In 2 studies, we investigated how groups with strong divisions may, paradoxically, help members to cope with injustice. We tested our theoretical predictions using a survey methodology and data from 57 (Study 1) and 36 (Study 2) workgroups across different industries. Consistent with our hypotheses, we found that group faultlines weakened the positive relationship between perceived interpersonal injustice and psychological distress. Cooperative behaviors within subgroups mediated the interactive effect of faultlines and injustice with psychological distress.

Rude, disrespectful, or otherwise unfair treatment from the boss is an all too familiar source of grief and stress for many employees. Consider the case told to one of the authors by a former supervisor of a group home for mentally challenged adults: "If administrators found that anything went wrong they immediately assumed it was incompetence on the part of our staff. We had a meeting amongst all the group home managers and the administration where they told us the staff was 'simply idiots who could not follow the directions that a monkey could get down' . They threatened to fire us after two mistakes of any kind. Obviously the stress level was through the roof. Some of us newer, younger male managers who met after work decided to support each other where everyone was checking everyone else's work to keep our sanity." This example shows that sometimes it takes more than one person to deal with workplace stress. The purpose of this investigation is, therefore, to understand how having social connections to similar others may reduce distress arising from perceived injustice.

Turning first to workplace injustice itself, an abundance of research has been devoted to the implications of unfairness for individuals and organizations, including job performance (Greenberg, 1990), job satisfaction (Mayer, Nishii, Schneider, & Goldstein, 2007), and other

attitudes and behaviors (Judge, Scott, & Hies, 2006). Another outcome of injustice that has

recently attracted attention is psychological distress (Tepper, 2001; Tepper, Duffy, Henle, &

Lambert, 2006), defined as symptoms related to depression, anxiety, irritability, exhaustion,

social disengagement, and cognitive problems (Rousseau, Chioccino, Boudrias, Aube, & Morin,

2008). Yet, how injustice may lead to psychological distress remains relatively understudied in

the organizational literature. This is surprising given that mental health is a significant business

expense. Employee anxiety, depression, and related issues are estimated to cost U.S. businesses

$193 billion annually (National Mental Health Association, 2007).

  Inasmuch as distress is a problem, social connections and group-level constructs have

long been thought to be one of the most important boundary conditions for psychological distress

(e.g., Heaphy, 2007). Empirical research on organizational injustice has, however, neglected to

examine group composition as a potential mechanism for coping with injustice. As Levine and

Moreland (1992, p. 150) state "any serious effort to understand mental health must consider the

psychological benefits and risks associated with group membership." Although some research

has looked at group-level constructs (e.g., team climate), others have examined demographic

characteristics such as gender (Kausto, EIo, Lipponen, & Elovainio, 2005), yet no one, to our

knowledge, has brought these two lines of research together. Our focus, therefore, is to

understand how overall group demographic composition may shape the relationship between

injustice and psychological distress.

  Group demographic composition has been thought of as a key determinant of various

process and performance outcomes (cf., Harrison & Klein, 2007; Williams & O'Reilly, 1998).

Yet, research has recently emerged to understand how group composition (in terms of

occupational demography) may moderate attitudes and behaviors in diverse groups. For instance,

Joshi, Liao, and Jackson (2006) examined how work group composition may play a role in influencing perceived pay inequalities. We further this line of research by turning our attention to demographic faultlines. Faultlines form when multiple group member characteristics (e.g., age, gender, tenure, education) come into alignment and create "rifts" in diverse groups. These divisions have been generally thought of as violent splits that lead group members to differentiate themselves and fracture into subgroups (Lau & Murnighan, 1998). Prior research has typically focused on how faultlines may create an environment of distrust, conflict, and other problems (e.g., Li & Hambrick, 2005; Polzer, Crisp, Jarvenpaa, & Kim, 2006). We extend this research by theorizing about how these divisions may also be healthy.

We further consider the psychological mechanism that can explain the link between injustice (interacting with faultlines) and psychological distress. We argue that members of subgroups formed by a faultline may cope with injustice through cooperating with each other. In our model, the role of cooperation within subgroups is critical and reflects prior research that finds homogenous groups (e.g., a faultline subgroup with members aligned on several characteristics would be homogenous) or subgroups based on social categories exhibit more cooperative behavior (Chatman & Flynn, 2001; Wit & Wilke, 1992). Although other research has demonstrated how cooperation mediates the effects of injustice on team-related outcomes (Sinclair, 2003), less is known about the role of cooperation within faultline subgroups and the process by which effects of injustice on psychological distress are lessened. So, we add to research by looking at subgroup cooperation as a process responsible for the potential buffering effects of faultlines.

Injustice and Psychological Distress

In this study, we focus on employee perceptions of injustice along four dimensions: distributive injustice (perceived fairness of outcome distributions, Greenberg, 2006), procedural injustice (perceived fairness of decision making processes; Tepper et al., 2006), interpersonal injustice (perceived fairness in treating individuals with dignity, respect, and politeness by authorities; Greenberg, 1993; Judge et al., 2006), and informational injustice (perceived fairness in providing an adequate and honest explanation for the company's decisions; Colquitt, 2001; Greenberg, 1993). Based on what Judge and Colquitt (2004) called "the injustice as stressor perspective," our first goal is to explore the relationship between all four facets of injustice with psychological distress. Altiiough the negative effects of die injustice dimensions on employee health have been widely demonstrated, studies on injustice and distress have primarily examined one justice dimension (e.g., Tepper et al., 2006), the independent effects of different dimensions (e.g., Elovainio, Kivimaki, & Helkama, 2001), or their interactive effects in predicting psychological distress (e.g., Janssen, 2004; Tepper, 2001). There has been, however, little research that takes into account all four injustice dimensions (see for an exception Judge & Colquitt, 2004), and little is known about their relative effects in predicting distress. Inspired by Colquitt, Conlon, Wesson, Porter, and Ng's (2001) meta-analytical study, we theorize about the unique and relative effects of each injustice construct.

Judge and Colquitt (2004) note that theoretically the link between injustice and distress is sound. Unfair treatment works as a stressor, an aspect of the work environment that causes employees to doubt their ability to cope with work demands (Vermunt & Streensma, 2001). To understand which injustice dimensions will drive distress, we draw on the agent-system model (Bies & Moag, 1986; Colquitt et al., 2001). This model holds that informational and

interpersonal injustice will be powerful predictors of agent-referenced outcomes such as evaluation of one's supervisor (Colquitt et al., 2001; Greenberg, 2006). Eisenberger, Fasolo, and Davis-LaMastro (1990) found that employees tend to personify their organization and presumably an employees' direct supervisor would typically represent a primary "face" of their organization. Informational and interpersonal forms of injustice have "day-in, day-out" significance that the other forms of injustice may not possess as they are more associated with a manager's discretion, providing them with frequent opportunities to violate those justice rules (Scott, Colquitt, & Zapata-Phelan, 2007).

Furthermore, interpersonal justice should have a stronger relationship with distress than informational justice because it is more easily interpretable by employees (Judge & Colquitt, 2004). This is consistent with Scott et al. 's (2007) argument that informational justice is not as "encounter based" as interpersonal justice. Our predictions here are also in line with the models of stress that describe how a manager's disrespect, inadequate leadership, supervisory misbehavior, or lack of leader support can work as powerful interpersonal stressors (Greenberg, 2006). For instance, Bies (2001) observed that interpersonal injustice was a "hot and burning" experience associated with "intense and personal pain" (p. 90). We build on this literature but also extend it to the area of employee health, which has been generally neglected in research based on these models, and predict that interpersonal injustice will dominate other forms of injustice.

Hypothesis 1 : Interpersonal injustice will be positively and more strongly related to psychological distress than will distributive, procedural, or informational injustice.

Moderating Effects of Faultlines

In our conceptual model, we argue that people in groups with strong faultlines may experience lower levels of psychological distress as they respond to unfairness. For instance, we consider whether it would be easier for a middle-aged female psychologist on a research team (where all others are young male engineers) to cope with injustice if there were at least one other middle-aged female psychologist on the team. We define faultlines consistent with Lau and Murnighan (1998) as hypothetical dividing lines that split a group into relatively homogeneous subgroups based on the group members' alignment along multiple attributes. Although faultlines can form around demographic (e.g., Bezrukova, Jehn, Zanutto, & Thatcher, 2009; Lau & Murnighan, 2005; Thatcher, Jehn, & Zanutto, 2003) as well as nondemographic factors like personality (Rico, Molleman, Sanchez-Manzanares, & Van der Vegt, 2007), we restrict our examination to demographic faultlines. We focus on demographic faultlines because people most often classify themselves and others into social categories based on demographic characteristics (e.g., female, old, high school graduate) to make predictions about subsequent interactions (cf. Harrison & Klein, 2007; Williams & O'Reilly, 1998).

Joshi and Roh (2009) have discussed how occupational demography can create a context that may enhance or minimize categorization-based processes in workgroups. Building on their multilevel framework for work team diversity, we theorize about how faultlines can create a condition in which detrimental effects of injustice on psychological health can be alleviated. We, therefore, add to the faultline literature by shifting the focus from investigating their main effects (e.g., Bezrukova et al., 2009; Thatcher et al., 2003) to considering their moderating effects on the injusticestress link. Prior research has demonstrated how faultlines could lead to distrust, conflict, lower productivity, and other problems (e.g., Bezrukova, Thatcher, & Jehn, 2007; Earley &

Mosakowski, 2000; Homan et al., 2008; Li & Hambrick, 2005; Polzer et al., 2006). Although

two studies have proposed faultlines as moderators in the context of communication (Lau &

Murnighan, 2005) and learning behavior (Gibson & Vermeulen, 2003), no one to our knowledge

has studied faultlines in me context of employee psychological distress. Thus, we further add to

what we know about faultline effects by studying distress as an outcome.

Implicit in the faultline perspective is the idea of alignment, which suggests that the

compositional dynamics of multiple demographic attributes has a greater impact on behavior

than one characteristic acting alone (e.g., Lau & Murnighan, 1998; Thatcher et al., 2003).

"Aligned" members share similar demographic attributes that reinforce one another and

differentiate members into respective faultline subgroups (Jehn, Bezrukova, & Thatcher, 2008).

As strong (aligned on multiple attributes) faultline subgroups develop across a divide, they create

a separate independent type of identity, different from a larger group. Research suggests that

different types of identities may result in different attitudinal and behavioral outcomes (Deaux,

Reid, Mizrahi, & Ethier, 1995). These dual identities (group and subgroup) may find their

manifestation in how we think about faultlines; whereas groups with faultlines may suffer from

divisive processes (Homan et al., 2008; Li & Hambrick, 2005), members of faultline subgroups

may personally benefit from a collaborative subgroup environment (Nishii & Goncalo, 2008).

The overarching point of our model is that me relationship between psychological

distress and interpersonal injustice will be weaker for people in groups with strong faultlines. We

focus on interpersonal injustice because according to the group engagement model (Tyler &

Blader, 2000, 2003), quality of interpersonal treatment provides the most useful identity relevant

information and contributes to an individual's assessment if it is safe for fhem to merge their

identity with their group. The degree to which employees perceive interpersonal injustice in their

groups may thus undermine members' feelings of self-esteem and self-worth and communicate

marginality and exclusion from their larger group (Tyler, Boeckmann, Smith, & Huo, 1997).

Needing positive self-esteem, they may seek inclusion elsewhere (Tajfel & Turner, 1986). On the

other hand, demographic faultlines may create an alternative source of identity-relevant

information for subgroup members to feel welcomed and included. Faultline subgroups may

operate as networks in providing self-help; reducing interpersonal biases, stereotyping, and

discrimination; and facilitating communication (Lau & Murnighan, 2005) and thus can work as a

coping mechanism for injustice.

For instance, an uncooperative supervisor who treats employees with disrespect would

likely cause psychological distress for group members. Yet, if there are strong faultlines, group

members know they can count on their fellow subgroup members to cooperate and may feel less

concerned about an uncooperative supervisor. Members of groups with faultlines can thus retreat

back to their faultline subgroup to assure their actions are backed up or at least to protect their

ego (Earley & Mosakowski, 2000). But if faultlines are weak, the relationship between

interpersonal injustice and psychological distress will remain strong. This is because in groups

with weak faultlines the distinction between ingroups and outgroups may not be easily apparent,

making subgroup categorization less likely (Eurich-Fulcer & Schofield, 1995). Such reduced

salience of subgroups makes it harder for members to merge the self with the subgroup and

obtain positive feelings of self-worth to cope with demeaning and disrespectful interpersonal

treatment from a supervisor (Blader & Tyler, 2009).

Hypothesis 2: When distributive, procedural, informational, and interpersonal injustice

and their respective interactions with faultlines are accounted for, faultlines will moderate the

effects of interpersonal injustice on psychological distress; this relationship will be weaker when

faultlines are stronger.

Explaining Faultline Moderation: Subgroup Cooperation

Because cooperative processes are likely to emerge within faultline subgroups (Hart &

Van Vugt, 2006; Sawyer, Houlette, & Yealey, 2006), we now turn our attention to subgroup

cooperation - a process variable that may be responsible for the buffering effects of faultlines on

the injustice-psychological distress link. Although many process variables could explain the

moderating effects of demographic faultlines (e.g., individual coping, social support, control

perceptions, self-efficacy), we focus on cooperation because cooperative relationships typically

reduce stressinduced emotions like the fear of being exploited (Polzer, 2004). Besides,

employees are often judged by how well they cooperate to deliver results (Milton & Westphal,

2005), and that has stress-related implications. Although there is not a wealth of research on

subgroup cooperation, it may be relevant in the link between injustice perceptions and affective

outcomes. Some research has found relationships between justice and subgroup cohesion

(associated with subgroup cooperation; Andrews, Kacmar, Blakely, & Bucklew, 2008). Other

research has shown how subgroup cooperation can be linked to affective outcomes (one of which

is stress; Wech, Mossholder, Steel, & Bennett, 1998). We extend this literature by theorizing

about subgroup cooperation as a mediator of the relationship between the interactive effects of

injustice with faultlines on distress.

Researchers have employed a wide array of definitions to study cooperation,

conceptualizing it as a personality trait (Anderson & Thompson, 2004), individuals' motives for

working together (e.g., Müller, KaIs, & Maes, 2008), expectations or willingness to cooperate

(De Cremer & Van Hiel, 2006), cultural or normative inducements to cooperate (Chatman & Flynn, 2001), resource allocation in nested social dilemmas (Polzer, 2004), or as relational behaviors (Milton & Westphal, 2005). We adopt the latter approach and define subgroup cooperation, in Une with Chen, Chen, and Meindl (1998), as interactive and relational behavior that occurs between members of a faultline subgroup and is directed at task achievement in the group. We view subgroup cooperation in a relational sense as our research question concerns the relationships and interactions among members of a faultline subgroup who view their subgroup as an organizational reference group defined as having the most salient social ties for subgroup members (Lawrence, 2006).

Our model proposes mediated moderation as the mechanism where subgroup cooperation acts as a process variable, mediating the injusticefaultlines interactive effects on distress. Following the recommendations of Morgan-Lopez and MacKinnon (2006) and based on other research (e.g., Rupp, McCance, Spencer, & Sonntag, 2008), we first establish the theoretical link between the interaction of interpersonal injustice with faultlines and subgroup cooperation, and then the link between subgroup cooperation and distress. As we argued above, it is the development and maintenance of a favorable social identity that most strongly influences cooperation (Tyler & Blader, 2000, 2003). If employees strongly identify with a subgroup, they ultimately pay less attention to unfair treatment from a supervisor (Tyler & Smith, 1999). Thus, subgroup identity is a critical determinant of the dynamics of social cooperation; it helps to buffer groups from adverse organizational exigencies and serves as a basis for the receipt of effective support from ingroup members (Beersma, Hollenbeck, Humphrey, Moon, & Conlon, 2003). So, the stronger the faultlines are in a group, the more likely members will expect others

in tiie salient category (faultline subgroup) to act more cooperatively in response to unfair

interpersonal treatment (Wit & Wilke, 1992).

Turning to the mediator-dependent variable link, cognitive appraisal theory (Lazarus,

1999) provides a framework for understanding the cooperation-distress relationship. According

to this theory, stress results from a two-phase appraisal process. Although the first phase (primary

appraisal) assesses the degree a stressor poses a threat (in our case, an uncooperative supervisor),

the secondary appraisal involves the individual's assessment of their ability to cope with that

threat. When one belongs to a faultline subgroup with cooperative colleagues, they will perceive

that they have sufficient coping resources to deal with the threat, and hence, stress is reduced.

For instance, research has suggested that supportive social interaction can buffer against

depression (e.g., Brown & Harris, 1978). Although less attention has been given to subgroup

cooperation specifically, there is some evidence showing that subgroup cooperation can be

associated with an individual's health. Haslam and Reicher (2006) discussed how shared social

identity has a positive impact on stress as it serves as a basis of a receipt of effective support

from ingroup members (e.g., one's work colleagues). Therefore, Hypothesis 3 predicts that the

interaction effect proposed in Hypothesis 2 will be mediated via subgroup cooperation.

Hypothesis 3: Subgroup cooperation will mediate the interaction between interpersonal

injustice and faultlines with psychological distress. That is, unfairly treated employees in groups

with strong faulüines will have higher levels of subgroup cooperation that, in turn, will

contribute to lower levels of psychological distress compared to those in groups with weak

faultlines.

This paper proceeds with our empirical tests of the model. Study 1 tests Hypotheses 1 and

2 to determine whether faultlines moderate the relationship between injustice and psychological

distress. Study 2 replicates this test and also explores subgroup cooperation as a process variable responsible for the moderating effects of faultlines.

Method

Study 1

Sample

We used a sampling procedure similar to that of Liao (2007) and Tepper (1995). Eighty-one graduate students enrolled in two night human resources management classes in a large northeastern university collected the data for extra credit. The students received training on survey administration and were given a self-addressed, postpaid envelope with each questionnaire. They distributed questionnaires to each employee within their work group, instructing them to return the questionnaire individually in the sealed envelope, marked with an ID code, directly to us via mail. Students were told to consider a "workgroup" as a collection of employees, including themselves, who are interdependent in their tasks, who share responsibility for work outcomes, and who are seen by themselves and others as a social entity, consistent with the definition of a group (Goodman, Ravlin, & Argote, 1986). Students who could not fulfill this requirement (i.e., were not employed or not part of a work group) were given alternative options for earning the extra credit points. The night student classes, however, tend to have many students working full time, so 72 out of 81 students participated in the project.

Coders of the data were trained to check for any cases where it appeared that the same person filled out multiple questionnaires (similar color ink or other indications), and students were warned that the questionnaires would be so inspected, with loss of credit as a penalty for not following instructions. Only four questionnaires were found that appeared to have the above

characteristics, prompting their exclusion from the analysis. Altogether, 720 questionnaires were distributed and 677 were collected; hence, the response rate was 94%. We excluded three-person groups with "token" splits (i.e., subgroups consisting of only one member) because token splits have been shown to exhibit different dynamics (Greer, Jehn, & Thatcher, 2006). Our final sample included 57 groups (561 individuals) with the average group size of 10 people (SD = 2.13).

The questionnaire asked about respondents' assessment of distributive, procedural, informational, and interpersonal injustice; demographics; and their psychological distress. For the sample, 57.5% of the respondents were female. High school was the highest education level attained for 30.9% of respondents, with 29.4% having 2 years of college and 26.6 having a 4-year degree. Respondents had been employed in their jobs on average for 4.8 years. All the major industrial groups were represented in the sample (e.g., retail or wholesale trade, manufacturing, hospitals, real estate, insurance, and transportation).

Measures

Perceived injustice. Distributive, procedural, informational, and interpersonal injustice dimensions were assessed with Colquitt's (2001) measure of organizational injustice. We used this because it assesses what criteria of injustice (e.g., respectful treatment) are seen favorably or unfavorably by respondents. Responses for all items were made on a 5-point scale, ranging from 1 = to no extent, to 5 = to a great extent. Like Reb, Goldman, Kray, and Cropanzano (2006), we reverse coded die injustice scores for our analysis so mat a high score on any of the scales indicates high injustice. Perceived distributive injustice was measured using four items (Cronbach's α = .94). A sample item was, "Does your compensation reflect the effort you have put into your work?" After asking respondents to consider the procedures that are used to make

daily decisions, seven items were used to assess procedural injustice (Cronbach's α = .88). A

sample item was, "Have those procedures been applied consistently?" Four items assessed

interpersonal injustice (Cronbach's α = .94), for example, "Has your manager treated you with

respect?" Five items assessed perceived informational injustice (Cronbach's α = .86), a sample

item was, "Has your manager explained the procedures thoroughly?" For these injustice items,

respondents were asked to refer to their immediate supervisor. Thus, our measures of

informational and interpersonal injustice are supervisor focused as opposed to organizationally

focused (Liao & Rupp, 2005).

We ran a confirmatory factor analysis (CFA) to see if a four-factor solution fit the data

better than a one-factor (all items in one factor) or a mree-factor model (distributive injustice

items in one factor, procedural injustice in the second factor, and informational and interpersonal

injustice in the third factor). We report the goodness-of-fit index (GFI), the comparative fit index

(CFI), and the root-mean-square error of approximation (RMSEA). GFI and CFI values greater

than .95 indicate an excellent fit to the data, whereas RMSEA values around .05 indicate a good

fit for the model (Hu & Bentler, 1999). Results revealed that the four-factor solution

($[varkappa]^{sup\ 2^} = 560.31$, df= 164, $p < .01$; GH = .99; CH = .99; RMSEA = .06) had a better

fit than the one-factor ($[varkappa]^{sup\ 2^} = 833.56$, df= 170, $p < .01$); GH = .98; CH = .98;

RMSEA = .08) or three-factor ($[varkappa]^{sup\ 2^} = 633.33$, df= 167, $p < .01$; GFI = .99; CFI

= .99; RMSEA = .07). Based on these results, we kept four dimensions of injustice to test

hypotheses.

Faultlines. We measured group faultlines along four characteristics (level of education,

gender, tenure with the company, and age). These variables were chosen based on research that

indicated people most often categorize themselves and others based on these attributes (Tsui,

Egan, & O'Reilly, 1992). We adopted the faultline algorithm developed by Thatcher et al. (2003)

to calculate group faultline scores. This measure takes into account cumulative proportions of

variance across demographic variables and estimates how well the variability within the group

can be explained by the presence of different clusters within the group (Thatcher et al., 2003;

Zanutto, Bezrukova, & Jehn, 2010). First, we measured the strength of faultline splits using a

multivariate measure of group similarities over several variables taken from the statistical cluster

analysis literature (Jobson, 1992). This statistic measures the degree of alignment or correlation

of attributes within the resulting subgroups. Second, we measured faultline distance, which

indicates the degree of difference between faultline subgroups that adds to the overall effect of

faultline strength (Bezrukova et al., 2009). Finally, to account for the joint effect of faultline

strength and distance, we multiplied the standardized strength and distance scores, removed the

sample mean (Aiken & West, 1991), and used this overall group faultline score in our analyses

(ranging from .07 to .90 at the group level).

Psychological distress. Consistent with past research (Elovainio et al., 2001; Spell &

Arnold, 2007; Tepper, 2001), we measured depression and anxiety based on Axteil et al.'s (2002)

scale. This is a shortened version of Warr's (1990) anxiety-contentment and depression-

enthusiasm scales. Respondents were presented with 12 adjectives (six each for depression and

anxiety) and were asked: "Thinking of the past few weeks, how much of the time has your own

job made you feel each of the following?" Sample items (for anxiety-contentment) were

"relaxed" (reverse coded) and "tense." Sample items for depression-enthusiasm were "gloomy"

and "enthusiastic" (reverse coded). Responses were on a 5-point scale ranging from "never" to

"all the time." For each scale, three of the items were reverse coded so that a higher number

indicated increased depression or anxiety. Cronbach's alpha for depression and anxiety was .84

and .83, respectively. The results of a CFA revealed that the two-factor solution (anxiety and depression) ($\varkappa^2$ = 349.98, df= 53, p < .01; GFI = .98; CFI = .95; RMSEA = .09) was a better fit than a one-factor model with anxiety and depression combined ($\varkappa^2$ = 474.71, df = 54, p < .01; GFI = .96; CFI = .93; RMSEA = .11).

Controls. We included job control, defined as the extent to which one has authority to make decisions concerning the job, because it has been found to be associated with strain and physical health (Wall, Jackson, Mullarkey, & Parker, 1996). We also controlled for group size as it has been shown to be important for group processes and outcomes (Goodman et al., 1986). We controlled for diversity using Blau's (1977) heterogeneity index to measure group heterogeneity for gender, calculated as $H = 1 - \Sigma_i^2$, where P represents die fractional share of team members assigned to a particular category and i is the number of different categories represented on a team. We used the standard deviation to measure group heterogeneity for continuous variables (e.g., age; Bedeian & Mossholder, 2000; Harrison & Klein, 2007). These demographic characteristics were chosen based on previous research (Williams & O'Reilly, 1998). Following the procedure suggested by Jehn, Northcraft, and Neale (1999), we averaged our heterogeneity variables to arrive at our overall group heterogeneity control variable.

Results

Table 1 displays means, standard deviations, and correlations among all variables. We tested our hypotheses using hierarchical linear modeling (HLM). We estimated the null models (with no predictors involved) for our psychological distress outcomes and found significant between-group variance (τ_{00} = .08, $\varkappa^2[56]$ = 140.03, p < .01; τ_{00} = -04, $\varkappa^2[56]$ = 109.79, p < .01, and ICC (l)s were .14 and .08, respectively), which confirmed the appropriateness of testing the cross-level relationships. We then examined the

between-group variance in Level 1 slopes and found that the variance component for each slope was significant at ? < .01, warranting an examination of a group-level moderator. We tested the main effects of all four injustice dimensions in a single HLM model with all Level 1 predictors grand-mean centered (Hofmann & Gavin, 1998). For the cross-level interaction tests, however, we group-mean centered our injustice variables and added their respective group-means back at Level 2 in order to properly control for their main effects (Hofmann & Gavin, 1998). We compared the total variance for the model to the null model using Snijders and Bosker's (1994) formula for calculating pseudo /?-squared. We also used the deviance index (-2 ? log-likelihood of a maximum-likelihood estimate) to assess model fit (Bryk & Raudenbush, 1992). These two statistics allow us to determine the explanatory value of a particular model and the effect size associated with the addition of specific parameters.

Hypothesis 1 predicted that interpersonal injustice would be positively and more strongly related to psychological distress than would distributive, procedural, or informational injustice. In support of Hypothesis 1, and as shown in Table 2, interpersonal injustice was the only dimension with significant effects on both dependent variables (y = .10, p < .001; y = .07, p < .01 for anxiety and depression, respectively). Procedural and informational injustice dimensions did not have significant effects with either of the dependent variables, whereas distributive injustice was positively and significantly associated with depression (y = .05, p < .05).

As shown in Table 2 (Model 3), Hypothesis 2 was fully supported. The interaction effect for faultlines and interpersonal justice was significant for both anxiety (y = -.38, p < .05) and depression (y = -.30, p < .05). As recommended by Aiken and West (1991, pp. 12-13) and recently extended to multilevel modeling (Preacher, Curran, & Bauer, 2006), we conducted simple slope tests to explore the form of the interaction effects. As predicted (see Figures 1a, 1b),

at low levels of faultlines, the relationship between interpersonal injustice and distress was

positive and significant (y = .18, t = 1.83, p < .05 and y = .12, t = 3.09, p < .01 for anxiety and

depression, respectively), yet at high levels of faultlines, it was not significant (y = .04, t = .45, p

= n.s. and y = .01, t = .33, p = n.s. for anxiety and depression, respectively). Thus, in support of

Hypothesis 2, faultlines moderated the effect of interpersonal injustice on psychological distress,

such that the positive association between injustice and outcomes weakened when faultlines were

stronger.

Discussion

Study 1 provides strong support for out hypotheses predicting that faultlines shape the

relationship between injustice and psychological distress. Consistent with Colquitt et al. (2001)

and the agent-system model, interpersonal injustice was positively and significantly related to

anxiety and depression. We also found that when all four injustice types and their respective

interactions with faultlines were accounted for, faultlines moderated the effects of only

interpersonal injustice on anxiety and depression. The positive association between injustice and

outcomes was significant at low levels of faultlines in groups, yet the relationship was

diminished at high levels of faultlines; that is, interpersonal injustice was no longer associated

with anxiety or depression in groups with faultlines. These results suggest that interpersonal

injustice is the most critical injustice type in predicting anxiety and depression in the group

context.

One noteworthy limitation of Study 1 was that we were unable to explore the underlying

process behind faultline effects. Thus, Study 2 was designed to provide a test of Hypothesis 3

concerning the implied process variable - subgroup cooperation - that might be responsible for

the faultlines effects. Another limitation of Study 1 was that we were unable to control for

Neuroticism, which may be associated with susceptibility to experience anxiety and depression

(Tepper, 2001); thus we included Neuroticism in Study 2. Finally, as race is one of the most

frequently studied attributes in the diversity (Tsui et al., 1992) and faultline literature (e.g., Lau

& Murnighan, 2005), we included race in our faultline calculations in Study 2. Consequently, the

purpose of the Study 2 was to address these shortcomings and verify whether our results are

replicable using a different sample, also increasing external validity.

<div align="center">Study 2</div>

Sample

Study 2 used a similar context and approach as in Study 1. In line with Liao's (2007) and

Tepper's (1995) methods, 36 graduate students enrolled in two night human resources

management classes in a large northeastern university collected the data for extra credit. None of

the Study 1 participants collected data for Study 2. Altogether, 324 questionnaires were

distributed and 228 completed questionnaires were collected; hence, the response rate was 70.3%.

As in Study 1 , we excluded three-person groups with "token" splits (i.e., subgroups with only

one member). Our final sample included 36 groups (218 individuals) with the average group size

of six members (SD = 2.59).

The questionnaire asked the same demographics, justice dimensions, and distress

assessments as in Study 1, in addition to subgroup cooperation, Neuroticism, and race. For the

sample, 57.4% of the respondents were female. In terms of race/ethnicity, 77% were White; 6.7%

were Asian; 9.6% were African Americans; and 4.3% were Hispanic. High school was the

highest education level attained for 25.4%, with 23.4% having some college, 41.6% having a 4-

year degree, and 8.6% having a graduate degree. Respondents were employed an average of 8.7

years. Like in Study 1, all major industrial groups were represented.

Measures

        We assessed injustice similar to Study 1 and created scales by taking the mean across

measures for distributive (Cronbach's α = .95), procedural (Cronbach's α = .87), informational

(Cronbach's α = .92), and interpersonal injustice (Cronbach's α = .94). The measures of

psychological distress were also the same as in Study 1 ; the reliability statistics were Cronbach's

α = .87 for anxiety and Cronbach's or = .81 for depression. We used CFA to examine the

construct validity of injustice variables and our distress measures; the results were similar to

those obtained in Study 1.

        The implied process variable, subgroup cooperation, was measured using a 5-item scale

(Cronbach's a = .72) adapted from Chatman and Flynn (2001). Sample items were, "There is a

high level of cooperation between the people I usually work with" and "There is a high level of

sharing between the people I usually work with." As, like Chatman and Flynn (2001), we are

making a connection between individual perceptions of an outcome (in our case, distress) and a

process, we examined cooperation through individual assessments of cooperative behavior

within the subgroup. As in Study 1 we used the faultline algorithm but added race. Finally, in

addition to the Study 1 controls, Neuroticism was measured using a 10-item scale from the

revised version of the NEO Personality Inventory (McCrae & Costa, 1992). Respondents were

asked to indicate the extent to which they agreed with a set of 10 statements that described how

they felt over the past 30 days (1 = strongly agree; 5 = strongly disagree). Sample items were: "I

often feel blue" and "I dislike myself." Cronbach's a for this scale was .82.

Results

Replication. Table 3 displays means, standard deviations, and correlations among all variables. We estimated the null models and random coefficients regression models (with Level 1 control variables) for our outcome variables (anxiety and depression) and found significant Level 2 variances, confirming the appropriateness of using for testing the crosslevel relationships. Table 4 presents the HLM analyses testing the main effects of four injustice dimensions on anxiety and depression. In full support of Hl, interpersonal injustice was the only dimension with significant effects on both dependent variables (y = .09, p < .05 ; y = . 11, p < .05 for anxiety and depression, respectively). Thus, Hypothesis 1 was supported, replicating the results of Study 1.

Hypothesis 2 was also fully supported (see Table 4, Model 3). The interaction effect was significant for both anxiety (y = -.15, p < .01)and depression (y = -.17, p < .01). The results of simple slopes tests showed that at low levels of faultlines, the relationship between interpersonal injustice and psychological distress outcomes was positive and significant (y = .15, t = 2.28, p < .05 and y = .17, t = 3.41, p < .001 for anxiety and depression, respectively); yet, at high levels of faultlines, it was not significant (y= - .09, t= - 1.38, p = ns and y = - .11, p= -1.72, p = ns for anxiety and depression, respectively). Thus, in support of Hypothesis 2 and replicating the results of Study 1, faultlines moderated the effect of interpersonal injustice on outcomes.

Tests of Mediated Moderation

Following the steps suggested by Muller, Judd, and Yzerbyt (2005), we conducted a hierarchical regression analysis to test Hypothesis 3, which predicted that the interactive effects of interpersonal injustice and faultlines on psychological distress would be mediated by subgroup cooperation (mediated moderation model). Confirmation of Hypothesis 2 provides the basis for

testing Hypothesis 3[1]. As reported above, we found significant effects of interpersonal injustice

interacting with faultlines on both anxiety and depression. Second, in a model, allowing the

independent variable's (IV) effect on the mediator to be moderated, the interactive effect of

interpersonal injustice and faultlines was significantly related to subgroup cooperation (y = .15, t

= 2.85, p < .01), thus satisfying the second criteria for mediated moderation on both paths. Third,

in a model, allowing for both the mediator's effect on the outcome and the IVs effect on the

outcome to be moderated, first, there was a significant effect of subgroup cooperation on anxiety

(y = - .19, t = -1.97, p < .05), whereas the interaction between interpersonal injustice and

faultlines was no longer significant (y = - .10, t = -1.52, p = ns), thus confirming mediated

moderation for interpersonal injustice with anxiety but not with depression, and partially

supporting Hypothesis 3.

   To further confirm our mediated moderation results, we used the path analytic approach

developed by Edwards and Lambert (2007). We bootstrapped in SPSS with HLM estimates as

the starting values with 1,000 iterations to construct bias-corrected confidence intervals for the

significance tests of the indirect effects (see Liao, Liu, & Loi, in press for a similar procedure).

The results in Table 5 revealed significant direct effects showing that the paths from injustice to

distress outcomes differed significantly across different levels of group faultlines (Ay = .03, p

< .05), thus providing additional support for Hypothesis 2. Furthermore, as shown in Table 5, the

indirect effect of interpersonal injustice on anxiety via subgroup cooperation was significant (y

= .04, p < .05) when group faultlines were weak, but nonsignificant (y = .01, ns), when group

faultlines were strong. Overall, the difference in the indirect effect of interpersonal injustice on

anxiety was significant (Ay = .03, ? < .05). The product of coefficients test by the PRODCLIN

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[1] Note, either (or both) of two patterns should exist to confirm mediated moderation (Muller et al., 2005, p. 856). We describe only one of the patterns; however, both patterns were confirmed for mediated moderation with

program (MacKinnon, Fairchild, & Fritz, 2007) further confirmed the significance of the indirect effect on anxiety via subgroup cooperation of the interaction between interpersonal injustice and group faultlines (95% confidence interval CI = [.01, .06], not containing zero). No significant differences were found between groups with strong and weak faultlines in the tests of indirect effects for depression. Thus, Hypothesis 3 is supported in the case of anxiety but not depression (see Table 5). Overall, our results provided evidence for first-stage moderation and moderated direct effects for both anxiety and depression, and second-stage moderation and moderated indirect effect via subgroup cooperation for anxiety.

Discussion

As in Study 1, Study 2 showed that interpersonal injustice had the strongest effect on psychological distress. Study 2 also confirmed the moderating effects of faultlines in suppressing employees' negative responses to injustice. These results provide generalizability to our predictions about the dominant role of interpersonal injustice in both the main effect model (Hypothesis 1) and in interaction with faultlines (Hypothesis 2). Extending Study 1, we found that interactive effects between interpersonal injustice and faultlines were mediated via subgroup cooperation for anxiety but not for depression. These results partially support our mediated moderation Hypothesis 3, providing some initial insights into potential mechanisms responsible for the faultline buffering effects on distress.

General Discussion

Up until now justice researchers have primarily focused on work performance, organizational citizenship behavior, withdrawal behavior, and attitudinal reactions to injustice (Cohen-Charash & Spector, 2001). Less understood, however, is how employee psychological

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anxiety in our study.

health is influenced by the perceptions of injustice. Our results demonstrate that interpersonal injustice may be a significant trigger for anxiety and depression (Greenberg, 2006; Jones-Johnson & Johnson, 1992). However, our most compelling finding is that stress responses could be attenuated dramatically among people in groups with faultlines, especially in the presence of subgroup cooperation.

Contributions and Theoretical Implications

Our findings contribute to the justice literature by looking at the relative effects of four justice dimensions as they relate to psychological distress. We show that interpersonal injustice had the strongest effect on psychological distress. Our results suggest that group members would be most distressed about getting things done on time, getting time off when needed, and so forth if they felt their supervisor did not cooperate, support, and "look out" for their needs (interpersonal injustice). This is consistent with Kausto et al., (2005), who demonstrated that injustice associated with interpersonal relations (termed interactional justice in the study) had the strongest relationship with stress and emotional exhaustion. However, our unique contribution here is that we are me first, to our knowledge, to study the relationships between all four justice dimensions with distress in a group setting.

More specifically, our main contribution is in demonstrating that the effects of injustice can vary across groups depending on the group's demographic composition. We found that faultlines moderated the relationship between interpersonal injustice and psychological distress when controlling for all other injustice dimensions and their respective interactions; this relationship became weaker when faultlines were stronger. Unlike most prior research on faultlines that typically conceptualizes faultlines as destructive and harmful, we show how

faultlines can actually help group members to effectively cope with stress. Thus, our study

contributes to the faultline literature by showing how faultlines may act as "healthy divides" (as

opposed to violent splits) by providing a potential coping mechanism in the workplace.

Next, we theorized about and empirically tested the effects of subgroup cooperation as a

process variable that may enable group faultlines to be beneficial. Our findings confirmed

mediated moderation between interpersonal injustice, group faultlines, subgroup cooperation,

and anxiety. In groups where members perceive an interpersonal injustice, one can envision that

the faultlines may lead to more cooperative behaviors within a subgroup. For instance, fellow

subgroup members may "lend an ear" to expressions of concern, boost confidence, and help

make an employee feel better about interpersonal injustice that he or she suffers (e.g., Colquitt &

Greenberg, 2003; Greenberg, 2006). They can also increase self-efficacy and beliefs that he or

she can successfully reduce or perhaps entirely avoid threatening stimuli. We, therefore, also

extend the literature by showing how group faultlines operate as reactive mechanisms that

ameliorate the negative effects of interpersonal injustice in diverse organizational groups via

subgroup cooperation.

In terms of our contributions to the psychological health literature, we show that the

mediated moderation effect was found for anxiety but not depression. This finding demonstrates

the merit of considering anxiety and depression as two distinct dimensions of psychological

health (Suis & Bunde, 2005); whereas anxiety and depression are often highly correlated in past

research (as they are in our sample), they are differentially related to a variety of correlates. Here,

individuals in subgroups getting cooperation from coworkers may experience less anxiety

because they know they will get help in accomplishing tasks or other responsibilities. But

cooperative behavior may not help individuals feel any better about the prevailing situation (an

unfair supervisor), so the buffering effect was not seen with depression.

Finally, we add to the multilevel literature. Prior faultlines research has largely focused

on group-level processes and outcomes to demonstrate how faultlines can create an environment

of distrust, conflict, and problems (e.g., Li & Hambrick, 2005). For example, studies have

investigated the effects of faultlines on group performance (e.g., Phillips, Mannix, Neale, &

Gruenfeld, 2004), conflict (Li & Hambrick, 2005), learning behavior, and satisfaction (Gibson &

Vermeulen, 2003; Lau & Murnighan, 2005). Although the introduction of the faultline concept in

diversity research has generated much attention, only recently have cross-level effects of

faultlines been examined (e.g., Lau & Murnighan, 2005; Sawyer et al., 2006), and no one to our

knowledge has studied how group divisions may influence employee health. We, thus, develop a

new approach that integrates theories from multiple disciplines and considers data at multiple

levels to address the complexity of health-related issues in which group faultlines may play a

significant role.

Study Limitations and Future Directions

Like most studies, ours has some limitations. One potential concern is that our results

could be confounded due to common method variance, often evident in survey research.

However, following Price, Harrison, and Gavin (2006), this was unlikely to be the case in this

study given the different variable constructions. Our faultlines measure was constructed from

demographics based on clustering analysis; this decreases our dependency on single-respondent

impressions (Ambrose & Schminke, 2003). Further, the dependent variables also included

internal phenomena that are assumed to arise within the mind; hence, self-reports may be me

only way to measure such constructs (Self, Holt, & Schaninger, 2005). Moreover, common method variance tends to reduce the likelihood of detecting interaction effects (cf. Wall et al., 1996); thus, the observed significant interactions can be considered meaningful. Notably, although our interaction terms accounted for a small percentage of the variance in both anxiety and depression, they were higher than tfiose in similar justice research (Tepper et al., 2006; Tepper & Taylor, 2003). This problem is not uncommon in field research; in fact, Evans (1985) argued that interactions explaining as little as 1 % of the variance should be considered important.

Although Study 1 was limited by the absence of measures for Neuroticism and race, we did include these in Study 2. However, as the inclusion of these variables did not change the overall pattern of our results, this gives us reason to believe that our results are robust and are generalizable across different settings. In addition, we considered only surface-level demographic characteristics in our faultlines measure. People in faultline subgroups initially formed based on demographic characteristics may over time discover similarities or differences along deeper level attributes such as attitudes, values, and personality (e.g., Harrison, Price, & Bell, 1998). However, although we believe this would be a very interesting topic to address in the future studies, we show that faultlines based on surface-level attributes are sufficient to induce coping reactions.

Although the results should move forward the study of employee psychological health, it is also apparent that there is still much to learn. Diversity research has largely focused on the performance aspect of workgroups, whereas psychological health outcomes have been largely underemphasized. As organizations strive to utilize the potential of diverse groups, create a healthy work environment, and manage employee distress, more research on psychological health in diverse groups is needed. One research possibility is to consider how, and under what

conditions, faultlines may trigger anxiety and depression in organizational groups, especially over time. Another avenue of research may be to examine how demographic alignments in a group affect minority-majority relationships, what processes (e.g., stigma, prejudice) arise from faultlines and how these processes may influence other health-related outcomes such as alcohol and drug abuse.

Managerial Implications

Although the potential downsides of faultlines, especially their impact on group processes and performance, have been widely discussed in faultline research (e.g., Lau & Murnighan, 1998, 2005; Li & Hambrick, 2005; Polzer et al., 2006; Sawyer et al., 2006), our findings show how group demographic alignments may buffer the effects of perceived injustice on psychological distress. More specifically, our findings highlight the implications of group composition and may suggest appropriate management action. As managers develop stress management training programs, they may consider faultlines' potential as a coping resource. The critical part of the mechanism, as we show, is subgroup cooperation, and by fostering a sense of cooperation within a faultline subgroup, managers can maximize the chances for these buffering effects to be realized. For example, as organizations restructure through downsizing and layoffs (or face other situations where employees are likely to feel they are being unfairly treated), they should recognize the value of groups with faultlines that may buffer the disturbing effects of workforce reductions on employee psychological well-being. These findings also illustrate one reason why identity-based organizational groups like clubs and associations for female managers, minority professionals, and others are so popular. Much of the rationale for such groups is that it gives members the opportunity to interact with others with common backgrounds and interests. The

ameliorating effect of faultlines on psychological distress that we uncovered may also be

illustrated in counseling and therapeutic practice. Part of a counselor's work is responding to

clients' descriptions of their troubles in an effort to improve their well-being. Miller and

Silverman (1995) called this process troubles talk, which is likely similar to what happens within

a faultline subgroup through the cooperative process.

In addition to recognizing the potential for healthy divides, managers should also be

mindful of the possibility of splits within groups that may be harmful to productivity or have

other detrimental outcomes, as has been suggested by prior research. For example, people in

groups where there are very salient splits along demographic characteristics may disparage those

outside their own subgroup, leading the group to retaliate and escalate conflict. As the potential

for faultlines to operate as either violent splits or healthy divides likely depends on a host of

contextual and other factors (e.g., the type of work, organizational culture), it is critical for

managers to be aware of their group's situation and how natural splits in groups can be leveraged

for positive rather than negative outcomes. Though our paper's focus is on psychological distress,

we hope our findings inspire others to consider how diversity within groups may be a lever for

other outcomes. We also hope our findings may give pause to managers as they consider the

makeup of their organizations, critical work teams, the implications for employee health, and

ultimately productivity of their organization.

Table 1. Means, Standard Deviations, and Intercorrelations Among Key Variables (Study 1)

Variable	Mean	SD	1	2	3	4	5	6
Level 1: Individual-level								
1. Job control	2.07	.43						
2. Distributive injustice	4.14	1.68	−.33**					
3. Procedural injustice	3.33	1.49	−.29**	.53**				
4. Informational injustice	3.33	1.66	−.35**	.54**	.59**			
5. Interpersonal injustice	2.66	1.47	−.39**	.39**	.50**	.72**		
6. Anxiety	2.58	.79	−.29**	.28**	.25**	.31**	.34**	
7. Depression	2.51	.62	−.33**	.39**	.32**	.39**	.38**	.59**
Level 2: Group-level								
1. Group size	9.72	2.13						
2. Heterogeneity	.01	.62	.10					
3. Faultlines	.46	.16	.25	.11				

Hypothesis 1 predicted that interpersonal injustice would be positively and more strongly related to psychological distress than would distributive, procedural, or informational injustice. In support of Hypothesis 1, and as shown in Table 2, interpersonal injustice was the only dimension with significant effects on both dependent variables ($y = .10$, $p < .001$; $y = .07$, $p < .01$ for anxiety and depression, respectively). Procedural and informational injustice dimensions did not have significant effects with either of the dependent variables, whereas distributive injustice was positively and significantly associated with depression ($y = .05$, $p < .05$).

Table 2. Results of HLM Analyses (Study 1)

Model & variable	Anxiety				Depression			
	Null model	Model 1 (controls)	Model 2 (H1)	Model 3 (H2)	Null model	Model 1 (controls)	Model 2 (H1)	Model 3 (H2)
Interactions								
Fau × DistINJ				−.08				.06
Fau × ProcINJ				.02				.15
Fau × InfoINJ				.07				−.14
Fau × IpersINJ (H2)				**−.38*****				**−.30*****
τ_{00} (Group variance)	.08***	.07***	.06***	.06***	.04***	.03***	.03**	.02**
σ^2 (Residual variance)	.54	.51	.46	.46	.46	.44	.42	.41
R^2	0	.06	.16	.20	0	.06	.10	.16
Deviance[b]	1288.92	1252.14	1196.86	1194.39	1169.27	1152.59	1124.42	1120.04

Note. N (Level 1) = 561, N (Level 2) = 57. Entries corresponding to the predictors are estimations of the fixed effects, ys, with robust standard errors. [a]Group means for injustice variables are included as controls at Level 2 in the HLM models (Model 3) when testing the cross-level interactions. [b]Deviance is a measure of model fit; the smaller the model deviance, the better the fit. Deviance equals to −2 × log-likelihood of maximum-likelihood estimate. Bold numbers refer to ones that are associated with specific hypotheses (H1, H2). $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$ (two-tailed).

Table 3. Means, Standard Deviations, and Intercorrelations Among Key Variables (Study 2)

Variable	Mean	SD	1	2	3	4	5	6	7	8
Level 1: Individual-level										
1. Job control	3.27	.58								
2. Neuroticism	2.11	.64	-.11							
3. Distributive injustice	4.38	1.69	-.28**	.02						
4. Procedural injustice	3.29	1.52	-.34**	.20**	.37**					
5. Informational injustice	3.31	1.59	-.45**	.08	.46**	.62**				
6. Interpersonal injustice	2.42	1.32	-.33**	.23**	.35**	.52**	.51**			
7. Subgroup cooperation	3.55	.80	.18**	-.28**	-.10	-.27**	-.35**	-.38**		
8. Anxiety	2.59	.81	-.26**	.39**	.16*	.23**	.21**	.24**	-.31**	
9. Depression	2.17	.68	-.35**	.48**	.33**	.31**	.31**	.35**	-.30**	.49**
Level 2: Group-level										
1. Group Size	6.03	2.59								
2. Heterogeneity	.16	.95	.31*							
3. Faultlines	.37	.12	.21	.08						

Note. N = 218 for individual level correlations. N = 36 for group level correlations.
*p < .05, **p < .01.

Table 4. Results of HLM Analyses (Study 2).

Model & variable	Anxiety				Depression			
	Null model	Model 1 (controls)	Model 2 (H1)	Model 3 (H2)	Null model	Model 1 (controls)	Model 2 (H1)	Model 3 (H2)
Control variables								
Job control		−.33***	−.30**	−.30**		−.40***	−.29***	−.33***
Neuroticism		.43***	.43***	.44***		.45***	.50***	.46***
Group size		−.03	−.03	−.03		−.03	−.03	−.04
Heterogeneity		.04	−.06	.03		.07	.02	.08†
Group[a] distributive injustice (DistINJ)				.12				.19**
Group[a] procedural injustice (ProcINJ)				.03				.04
Group[a] informational injustice (InfoINJ)				−.01				−.04
Group[a] interpersonal injustice (IpersINJ)				−.01				.08
Main effects								
Faultlines (Fau)			−.04	−.11			−.07	−.03
Distributive injustice (DistINJ)			.01	.01			.06†	.07†
Procedural injustice (ProcINJ)			.07	.03			.04	.04
Informational injustice (InfoINJ)			.03	.07			.02	.05
Interpersonal injustice (IpersINJ) (H1)			.09*	.08†			.11*	.03

Table 4. *continued*

Model & variable	Anxiety				Depression			
	Null model	Model 1 (controls)	Model 2 (H1)	Model 3 (H2)	Null model	Model 1 (controls)	Model 2 (H1)	Model 3 (H2)
Interactions								
Fau × DistINJ				−.01				−.03
Fau × ProcINJ				−.01				.03
Fau × InfoINJ				.04				.02
Fau × IpersINJ (H2)				**−.15****				**−.17*****
τ_{00} (Group variance)	.06***	.06***	.04*	.06*	.03**	.03*	.04**	.03*
σ^2 (Residual variance)	.61	.46	.47	.45	.43	.29	.27	.24
R^2	0	.21	.24	.26	0	.30	.32	.41
Deviance[b]	499.99	453.62	449.26	442.41	433.31	346.70	344.13	339.86

Note. N (Level 1) = 218, N (Level 2) = 36. Entries corresponding to the predictors are estimations of the fixed effects, γs, with robust standard errors.
[a]Group means for injustice variables are included as controls at Level 2 in the HLM models (Model 3) when testing the cross-level interactions.
[b]Deviance is a measure of model fit; the smaller the model deviance, the better the fit. Deviance equals to −2 × log-likelihood of maximum-likelihood estimate. $^\dagger p < .1$; $^* p < .05$, $^{**} p < .01$, $^{***} p < .001$ (two-tailed).

Table 5. Results of the Moderated Path Analysis Hypothesis 3

	Stage		Effect		
				Interpersonal injustice (X) – subgroup cooperation (M) – anxiety (Y)	
Moderator variable[a]: group faultlines	First Pmx	Second Pym	Direct Pyx	Indirect Pmx * Pym	Total Pyx + Pmx * Pym
Low faultlines (−1 s.d.)	−0.17**	−0.22**	0.08*	0.04*	0.11**
High faultlines (+1 s.d.)	−0.13**	−0.12**	0.05*	0.01	0.07*
Differences	0.04*	0.10*	−0.03*	−0.03*	−0.04*
				Interpersonal injustice (X) – subgroup cooperation (M) – depression (Y)	
Low faultlines (−1 s.d.)	−0.17**	−0.05*	0.05*	0.01	0.06**
High faultlines (+1 s.d.)	−0.13**	−0.03*	0.02	0.00	0.03*
Differences	0.04*	0.02	−0.03*	−0.01	−0.03*

Note. N (Level 1) = 218, N (Level 2) = 36.

Pmx = path from injustice to subgroup cooperation, Pym = path from subgroup cooperation to anxiety (depression), Pyx = path from injustice to anxiety (depression).

[a]Low moderator variable refers to one standard deviation below the mean of the moderator; high moderator variable refers to one standard deviation above the mean of the moderator. *$p < .05$, **$p < .01$ (two-tailed).
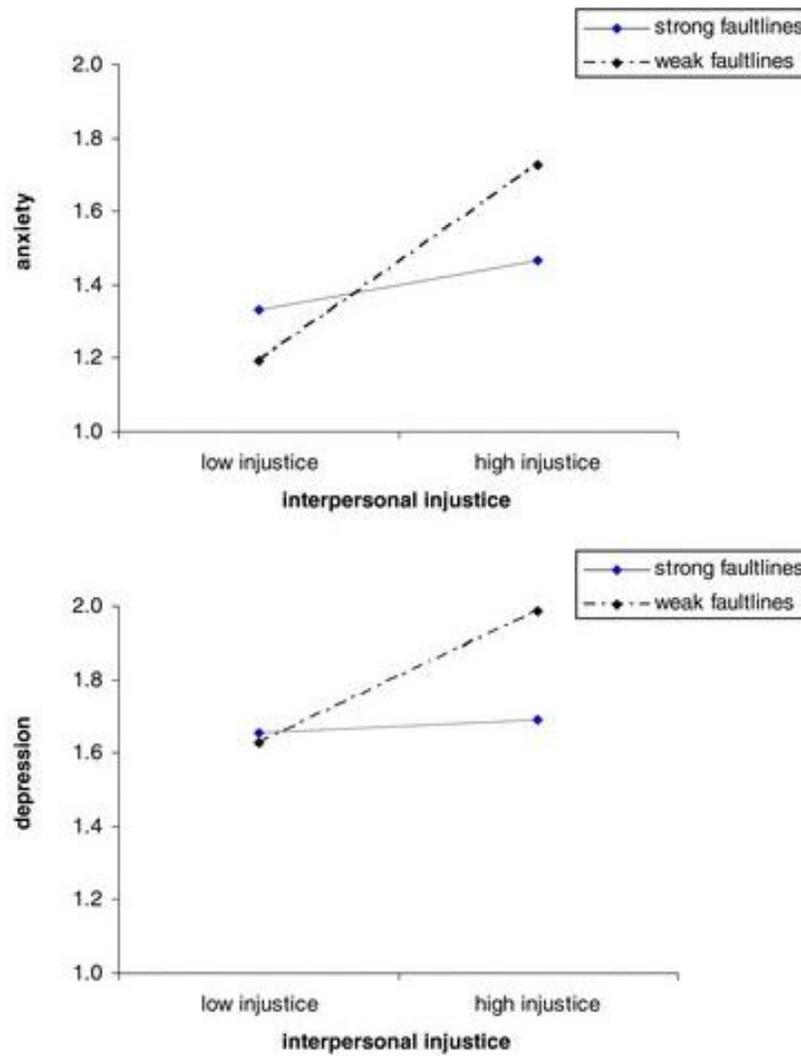
Figure 1. The Moderated Effects of Faultlines[2] (Study 1).

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[2] Low and high values represent one standard deviation below the mean and one standard deviation above the mean. Analysis is based on centered values (c.f. Aiken & West, 1991). The shape of interaction effects for the significant interactions in Study 2 is similar to the shape of interaction effects presented above.

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