

Don't Let It Get to You! A Moderated Mediated Approach to the (In)Justice–Health Relationship

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The present study investigates the consequences of overall justice perceptions on employees' mental health and work–family conflict. While many studies have found that perceiving injustice at work is harmful, little is known about the underlying processes. Based on the allostatic load model, it is hypothesized that mental preoccupation with work, defined as a cognitive state, is a mediator linking overall justice perceptions to employee health. Moreover, we argue that locus of control is a moderator for the mediated relationship. We tested our hypotheses with panel data consisting of 412 Swedish office workers. Results support that mental preoccupation with work mediates the relationship between overall justice and mental health, and overall justice and work–family conflict. Results also reveal that mental preoccupation with work plays a greater mediating role for individuals with an external locus of control. Implications and suggestions for future studies on the emerging relationship between organizational justice and health are discussed.

Keywords: organizational justice, overall justice, health, locus of control, allostatic load

With estimated global costs of \$2.5 trillion USD in 2010 and projected costs of \$6.0 trillion USD by 2030 (Bloom et al., 2011), work-related stress and the associated health concerns represent an important societal challenge. Stressors at work can have serious consequences for productivity, as they can affect work attendance and remove people from the workforce prematurely (Jex & Crossley, 2005). The scale of the problem in terms of the large number of people being affected and the intensity of the adverse consequences is reaching epidemic proportions (Quick, Cooper, Nelson, Quick, & Gavin, 2003). To meet this challenge, there is a growing

interest in linking other experiences at work to health and ill-health outcomes than those which have been traditionally the targets of stress management studies (Karasek & Theorell, 1990). One such candidate is injustice perceptions, which is increasingly being related to various health-related outcomes (for a meta-analysis see Robbins, Ford, & Tetrick, 2012). Sufficient evidence has accumulated for organizational justice to be termed “new psychosocial predictor” of health (Elovainio, Kivimäki, & Vahtera, 2002).

Early conceptual work by Vermunt and Steensma (2001) portrayed injustice as a work stressor which threatens employees' psychological and physical functioning (Cropanzano, Goldman, & Benson, 2005). Both theory and empirical evidence support the existence of a relationship between injustice and negative health outcomes (Elovainio, Kivimäki, Vahtera, Keltikangas-Järvinen, & Virtanen, 2003; Elovainio et al., 2005). However, while the relationship between justice perceptions and health has been empirically demonstrated (see Robbins et al., 2012), the underlying psychological mechanisms have not been specified sufficiently. Judge and Colquitt (2004), in one of the few empirical studies looking at mediating mechanisms, revealed that employees who perceive their organization as fair have less interference between work and family demands and, subsequently, report lower stress levels. The present research attempts to address the gap by investigating a potential mediator and moderator of the relationships between overall justice, work–family conflict, and mental health.

We believe there is a process that may help explain the relationship: *mental preoccupation with work* (Siegrist, 1996; von Thiele Schwarz, 2011), which characterizes a state of ongoing work-related thoughts. The *allostatic load model* has emerged as a dominant theoretical perspective relating stressors to ill health (see Ganster & Rosen, 2013). Based on the allostatic load model

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(McEwen, 1998; McEwen & Seeman, 1999), we argue injustice results in increased ill health such as worsened mental health and increased work–family conflict when the initial effect of being exposed to a stressor is prolonged in time by the cognitive process of mental preoccupation with work. The allostatic load model implies that there may be differences among individuals in how injustice perceptions relate to ill health. Individual differences in how stressors are appraised, in turn affect the degree to which injustice perceptions become a focus of prolonged mental preoccupation. In particular, we study if locus of control, individuals' beliefs regarding the controllability and influence of life outcomes (Rotter, 1966, 1990), moderates the relationship.

The present study contributes to the emerging literature on organizational justice and health (Elovainio et al., 2002). As Ford and Huang (2014) suggest, “to make the case that injustice is truly the cause of correlated health problems, we must explain why injustice would lead to health problems and, more importantly, why reducing organizational injustice would improve employee health” (p. 37). The core contribution of this study lies in the precise articulation of the cognitive processes that link the initial cognitive and emotional experience of injustice to ill health.

Mechanism Between Overall Justice and Mental Health

Organizational justice is defined as a subjective perception of fairness in the workplace (Byrne & Cropanzano, 2001). It is often conceptualized along dimensions of fairness regarding allocation decisions, procedures, and treatment at work (Colquitt, 2001). Empirical studies of the justice–health relationship have found associations between dimensions of injustice and health-related problems, such as unhealthy behaviors, absenteeism or burnout (Robbins et al., 2012). Longitudinal and prospective studies also support relationships between the different dimensions of organizational justice and indicators of health such as sickness absence or psychiatric morbidity (Elovainio et al., 2009; Kivimäki, Elovainio, Vahtera, & Ferrie, 2003; Ndjaboué, Brisson, & Vézina, 2012).

Although most of the justice research has focused on specific justice dimensions, there is increasing evidence that overall justice might be more appropriate for studying the relationship between justice and health. One of the advantages of overall justice is that it is more stable, constitutes a better indicator of how individuals consider issues of fairness, and can be a stronger predictor than the justice dimensions (Holtz & Harold, 2009; Rupp, Shao, Jones, & Liao, 2014). Overall justice perceptions represent a global assessment of the fairness of an organization as an entity, across time and situations (Ambrose & Schminke, 2009; Cropanzano, Byrne, Bobocel, & Rupp, 2001). According to research on bandwidth-fidelity (Cronbach, 1970; Cronbach & Gleser, 1965), specific justice dimensions are more likely to predict specific outcomes, for instance interpersonal justice better predicts interactions with one's supervisor. Likewise, overall justice perceptions provide better predictions when the outcome of interest is generic, like job satisfaction (Ambrose & Schminke, 2009; Colquitt & Shaw, 2005). Based on the empirical studies on the justice dimensions and the argumentations around overall justice, we expect overall justice perceptions to be related to indicators of health, in particular mental health.

Despite the evidence linking injustice to ill health, there is a lack of theoretical underpinnings of this relationship. To address this gap, we first draw on the pioneering work of Vermunt and Steensma (2001), who in their injustice–stress theory conceptualized injustice as work stressor, which lets employees doubt their ability to cope with work demands (Vermunt & Steensma, 2001), and subsequently can threaten individuals' healthy psychological and physical functioning (Cropanzano et al., 2005). We argue that injustice is a social stressor (Ganzel, Morris, & Wethington, 2010; Tyler & Lind, 1992). Social stressors have been shown to be one of the most strongest triggers of a stress response and subsequent experience of strain and ill health (Ganzel et al., 2010). Furthermore, we argue that overall justice constitutes a cumulative stressor, and thus, is particularly important for understanding the relationship between injustice and impaired health (Ford et al., 2014). In this study, we propose a moderated mediation model by which the relationship between overall justice perceptions and mental health can be understood through the allostatic load model (McEwen, 1998; McEwen & Seeman, 1999), which provides a theoretical framework explaining how a stressor can have a deleterious impact on health.

Based on the notion that injustice is a stressor (Vermunt & Steensma, 2001), traditional stress theories would predict that injustice perceptions are related to strain and impaired health. Injustice can be said to undermine social and psychological resources such as self-esteem, status (Tyler & Lind, 1992), or feelings of being in control (Elovainio et al., 2009; Lind & van den Bos, 2002). Based on the conservation of resources model (Hobfoll, 1989), one may argue that injustice weakens individuals' resources to effectively deal with threats, which therefore augments their vulnerability to other stressors and stress reactions. The job-demands–resources model (Bakker & Demerouti, 2007) postulates a health impairment process such that stressors exhaust individuals resources which undermines their energy and mental health, and a motivational process whereby job resources foster motivation and engagement. A stressor such as injustice perceptions, therefore, would be predicted to exhaust individuals' mental and physical resources and lead to impaired mental health. While these stress theories predict the direct relationship between organizational justice perceptions and health outcomes, the specific process of what injustice elicits remains unclear. Similarly, Ganster and Rosen (2013) write,

Together, these psychological models of stress are useful for describing how events in the environment generate stressful appraisals, yet they are all based on the premise that psychosocial stressors exert their effects on mental and physical well-being through intervening physiological processes. Unfortunately, such processes are typically not explicitly described by work stress theorists. (p. 1090)

It is therefore that we focus on the predictions from the allostatic load model.

The allostatic load model has been suggested as a framework that can bridge biomedical and psychosocial models of stress (Ganster & Rosen, 2013; Ganzel et al., 2010) by explaining the physiological and neural process that underlines the process by which social phenomena result in bodily and mental harm. The allostatic load model takes its starting point in that when an individual faces a stressor, his or her body undergoes wide-ranging emotional, cognitive, and physiological responses that aim to

achieve a new balance between different regulatory bodily functions, so that the organism is better adapted to meet the challenge. This process is denoted “allostasis” and is regulated in the core emotional regions of the brain (Geurts & Sonnentag, 2006; McEwen, 2000). However, although allostasis is a life-necessary process for the iterative adaptation between emotional, cognitive, and physical functions and the environment, attempts to maintain a balance when facing stressors exert costs on the bodily systems. When the exposure to stressors is prolonged, recovery is prohibited, resulting in an increased allostatic load, which is an indicator of increased demands across various bodily systems (von Thiele, Lindfors, & Lundberg, 2006). Over time, a high allostatic load constitutes a cumulative biological risk that has been consistently linked to increased risks of negative health consequences (Juster, McEwen, & Lupien, 2010). This includes both risks related to changes in the peripheral bodily systems regulating biological processes such as blood pressure and heart rate (i.e., cardiovascular disorders) and to changes related to the wear and tear of the core emotional systems of the brain (McEwen, 2008). This last part provides an important theoretical link between stressors and mental health disorders such as depression and anxiety (see Ganzel et al., 2010).

In accordance with the allostatic load model, it is not exposure to a stressor, per se, that increases the risk for ill health. Rather, it is frequent or prolonged activation that may lead to dysregulation. In this, cognitive processes, when the initial exposure to a stressor is prolonged through the mental preoccupation of that stressor, play an important role (Brosschot, Pieper, & Thayer, 2005; Geurts & Sonnentag, 2006). Thus, based on the allostatic load model, we argue that negative health effects of a lack of justice are increased if a state of mental preoccupation with work is elicited. Mental preoccupation is a cognitive state that prolongs the physiological activation of the stressor, which leads to allostatic load and, in turn, decreases mental health.

There are a number of different concepts tapping into the cognitive processes of prolonging the mental representation of a stressor, such as perseverant cognitions (Brosschot, Gerin, & Thayer, 2006) or the opposite, psychological detachment (Sonnentag, 2012). At the theoretical level, these concepts are very similar. However, in its current operationalization, in contrast to, for example, psychological detachment, mental preoccupation stresses the accumulation of load by incorporating a time dimension, including assessments of worry and rumination with work not only in the evenings after work but also in the mornings and on weekends.

Employees who experience injustice at their workplace tend to not stop thinking about work. For instance, Barclay and Skarlicki (2009) and Gilliland (2008) mentioned incidences where individuals were mentally occupied with violations of justice rules for years. In other words, injustice may “feed” mental preoccupation with work. Elovainio et al. (2009) note, “a plausible mechanism through which perceived organizational injustice may affect health is prolonged stress [. . .] it has been shown that the repeated exposure to low justice at work is associated with health problems” (pp. 334–335; see also Elovainio et al., 2010; Elovainio, Leino-Arjas, Vahtera, & Kivimäki, 2006). There is evidence that mental preoccupation impairs sleep and recovery (Kudielka, Von Känel, Gander, & Fischer, 2004; von Thiele Schwarz, 2011), and is related to indicators of cardiovascular diseases (Vrijkotte, van

Doornen, & de Geus, 2004). Thus, detecting the role of mental preoccupation in the justice–health relationship is an important step toward the development of preventive actions so that employees have resources left to face job tasks. As common in psychological research (Baron & Kenny, 1986), we assume partial mediation as other mechanisms potentially play a role in the relationship between justice perceptions and health (Cropanzano et al., 2005; Hietapakka et al., 2013). Therefore, we predict

Hypothesis 1: Perceptions of overall justice are positively associated with better mental health.

Hypothesis 2: Mental preoccupation with work partially mediates the relationship between overall justice and mental health, such that overall justice is negatively associated with mental preoccupation with work, which itself is negatively associated with mental health.

Mechanism Between Overall Justice and Work–Family Conflict

Existing research posits that justice perceptions have an impact on individuals’ stress levels. Judge and Colquitt (2004) reviewed the justice literature and noted that “justice has the ability to reduce the uncertainty and lack of control that are at the heart of feelings of stress” (p. 396). They found arguments in support of a relationship between the traditional justice facets (distributive, procedural, interpersonal, and informational justice) and stress. For instance, regarding distributive justice, they highlight that equity theory posits that stress is a consequence of injustice. Based on a sample of U.S. academics, they show that (two) justice facets are related to perceptions of stress.

Judge and Colquitt (2004) also argue that justice perceptions are related to work–family conflict. According to these authors, organizational justice perceptions affect the extent of role conflicts between work and family life because organizations that are perceived as fair will likely be more responsive to work–family tensions and will make a greater effort to deal with those concerns. The allostatic load model would result in a similar prediction, such that injustice perceptions are related to an increase in work–family conflict, but based on the role of global injustice as a cumulative stressor. For example, injustice may increase the risk of role conflicts between work and family life.

Based on the allostatic load model, we argue that injustice at work elicits a prolonged mental representation of the stressor; that is individuals who perceive injustice at their workplace will be mentally occupied with their work. They may think about work when they are at home, on weekends, and when they wake up in the mornings. This is likely to influence their social relationships negatively; they will be focused on work instead of their relationships, they might be mentally absent or distant when talking to others, and they might talk to others predominantly about work. This may, in turn, increase work–family conflict.

Therefore, while we follow the arguments by Judge and Colquitt (2004) that justice perceptions are related to work–family conflict, the allostatic load model gives reasons to believe that mental preoccupation with work mediates this relationship, such that injustice leaves individuals mentally occupied with their work which increases work–family conflict. Consequently, we expect

Hypothesis 3: Perceptions of overall justice are negatively associated with work-family conflict.

Hypothesis 4: Mental preoccupation with work partially mediates the relationship between overall justice and work-family conflict, such that overall justice is negatively associated with mental preoccupation, which itself is positively associated with work-family conflict.

The Moderating Role of Locus of Control

In line with psychosocial models of stress, the allostatic load model acknowledges the importance of appraisal for understanding individual variation in stress reactivity (Ganzel et al., 2010). It is individuals' evaluations of a stressor; that is, its emotional valence, its intensity and its personal meaning, that ultimately determines the function a potential stressor has (Cacioppo & Gardner, 1999). The appraisal of a stressor is related to individuals' beliefs that they can control events affecting them (internals) or believe that fate or luck has a large influence on happenings (externals; Rotter, 1966).

Locus of control is an important disposition for the way individuals interpret situations and attribute events to internal factors (skills, efforts, perseverance) or external factors (chance, luck; Aubé, Rousseau, & Morin, 2007; Spector, 1982). While internals acknowledge their own responsibility in successes or failures, externals feel powerless and out of control. Internals take active steps to initiate social relationships (Fusilier, Ganster, & Mayes, 1987), seek more information, show better problem-solving performance, and are more likely to act when dissatisfied than externals (Spector, 1982). Internal locus of control is positively associated with job-related, mental and physical well-being (Ng, Sorensen, & Eby, 2006), better recovery (Harrow, Hansford, & Astrachan-Fletcher, 2009), and positive psychological adjustment (Hodges & Winstanley, 2012).

At work, internals feel more efficacious, are more proactive in reducing and managing negative work experiences and perceive work stressors as less threatening and more manageable than externals (Ng et al., 2006). It has been argued that internals' enhanced beliefs of being in control reduces the stressful nature of a given situation (Spector & O'Connell, 1994). Moreover, internals attribute organizational events to their own actions rather than to the benevolence or disreputability of their employer while externals will hold insensitivity against their employer (Aubé et al., 2007). Individuals with internal locus of control will be less mentally occupied when faced with injustice at work because of greater beliefs in their ability to solve the root causes of the unfair treatment. Based on this, internals are expected to perceive more options and opportunities to mitigate the stressor of injustice and therefore react less with worrying and ruminating which, in turn, limits the prolongation of the physiological activation associated with injustice.

On the other hand, studies have reported that individuals high in trait anxiety and negative affectivity, traits innate to externals (Ng et al., 2006), react more strongly to injustice with retaliation and counterproductive work behavior (Fox, Spector, & Miles, 2001; Skarlicki & Folger, 1997). Individuals with a tendency to attribute events to external causes, will experience less confidence in their ability to deal with unfair treatment, and will be more mentally

preoccupied, making them more sensitive to the detrimental health effect of injustice perceptions. Therefore, as externals feel more powerless in stressful situations, such as when perceiving injustice, they are less inclined to act by solving the problem and instead hypothesized to turn inward and ruminate or worry, which in turn may have negative health consequences.

Hypothesis 5: Locus of control moderates the relationship between overall justice and mental preoccupation with work, such that the effect is stronger for individuals with an external locus of control.

Method

Sample and Procedures

Surveys were distributed in September 2008 via postal service to all 782 employees of an accounting firm with the main office in a large Swedish city but with local offices dispersed across Sweden. The questionnaires were accompanied by two cover letters, one from the organization and one from the research group containing information about the objectives of the study, confidentiality, and data treatment. Two reminders were sent out, one after 2 weeks and the second one after another month. At the initiative of the company, the questionnaires were accompanied by a voucher for a paperback book. The data collection was repeated at the organization roughly after 1 year using the same procedure. This time the company distributed lottery tickets.

A total of 567 individuals responded to the first questionnaire (73%). One year later, 806 employees were available, from which 579 usable responses were returned (72%). Four hundred thirty individuals provided complete data for both time points. Eighteen persons with less than 1 year of organizational tenure were excluded, as we regard all relevant holidays and critical events like performance reviews as necessary to form an overall justice judgment. The final longitudinal sample consisted of 412 persons. Sixty percent of the sample was female, with a mean age of 43 years ($SD = 11$), ranging from 23 to 70 years; 70% had a university or college degree; and average organizational tenure was 7 years.

To investigate if there were any differences between respondents who participated at both time points and those who only participated at T1, an analysis of nonresponse was conducted. This analysis revealed that there were no differences in mental health, work-family conflict, locus of control and education between the two sets of respondents. However, those who participated in both waves reported significantly higher levels of organizational justice, were younger, and were more likely to be men than those who dropped out between Time (T)1 and T2 ($p < .05$). This shows that the sample we used to test predictions was fairly representative of all respondents who participated at the first measurement occasion.

Measures

The questionnaire included previously validated scales. The response choices ranged from 1 (*strongly disagree*) to 5 (*strongly agree*), if not stated otherwise.

Overall justice. Overall justice was assessed with a scale by van der Vliet and Hellgren (2002), based on Lind (2001). The

three-item scale reflects a general sense of fairness by the employer (Item 1: "I feel that my employer treats me fairly," Item 2: "My employers judgments are usually fair," Item 3: "I find that my employer behaves fairly toward me"). This measure is close to the one developed by Ambrose and Schminke (2009), which assesses individuals general assessment of the fairness of the organization with items like, "Overall, I'm treated fairly by my organization," and "For the most part, this organization treats its employees fairly."

Locus of control. Locus of control was measured with eight items from the Levenson (1974) scale on perceived mastery over one's personal life; an example item being, "My life is determined by my own actions." A high score reflects internal locus of control.

Mental preoccupation with work. Mental preoccupation with work was operationalized with three items from the Siegrist et al. (2004) subscale to measure inability to withdraw from work ("As soon as I get up in the morning I start thinking about work problems," "When I get home, I can easily relax and 'switch off' work (reversed)," "Work rarely lets me go, it is still on my mind when I go to bed"). We added two items to cover mental preoccupation with work on evenings and weekends ("Even in the evenings when I am free I think about work," "My work is on my mind even on the weekends"). These items reflect involuntary preoccupation with work.

Work-family conflict. Work-family conflict was measured with four items from the Netemeyer, Boles, and McMurrian (1996) scale (Item 1: "The demands in my work interfere with my home and family life," Item 2: "The amount of time my job takes up makes it difficult to fulfill my family responsibilities," Item 3: "Things I want to do at home do not get done because of the demands my job puts on me," Item 4: "Due to work-related duties, I have to make changes to my plans for family activities").¹

Mental health. Mental health was assessed with the 12-item General Health Questionnaire by Goldberg (1979); an example item being, "Over the past 2 weeks, have you constantly felt under strain?" The response scale went from 1 (*always*) to 4 (*never*). The scale was reversed so that high scores indicate a greater degree of mental health.

Covariates. In order to control for possible confounding effects, we included age (in years), gender (0 = woman, 1 = man), and education (0 = lower education, 1 = university or college degree) as covariates as these variables are relevant for work-family conflict and mental health (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Kawachi, 2006). Furthermore, we controlled for prior levels of mental health and work-family conflict.

Analytical Strategy

Prior to running the structural model, we investigated the adequacy of our measurement model. The latent variable of mental health was identified by using three parcels that were created from the 12 General Health Questionnaire items. The latent variable locus of control was identified by using four parcels that were created from the eight items of the measure. Parceling is a common technique to create a smaller set of indicators that are more reliable and normally distributed, increasing the overall stability of a model (Little, 2013; Little, Cunningham, Shahar, & Widaman, 2002).

After establishing an adequate measurement model, the structural model of the direct and indirect effects was estimated. In our

predictions, we controlled for prior levels of the dependent variables (mental health, work-family conflict). In lagged mediation models, the residuals of corresponding indicators over time are allowed to correlate (Little, Preacher, Selig, & Card, 2007), which applied to mental health and work-family conflict in our analyses. Furthermore, we controlled for the effect of age, gender, and education by including direct paths on all endogenous variables (mental preoccupation with work T2, work-family conflict T2, and mental health T2), while also letting them covary with all other variables. For assessing the significance of the mediation effects, we examined the significance of the indirect effect and the bias-corrected confidence intervals of the indirect effects generated by bootstrap procedures based on 5,000 samples.

To provide estimates for latent variable interactions, Mplus (Muthén & Muthén, 1998–2012) uses the latent moderated structural approach by Klein and Moosbrugger (2000). The latent moderated structural approach results in more parsimonious models and is to be preferred over other approaches to estimate latent interaction effects (Little, Bovaird, & Widaman, 2006). However, Mplus does not generate traditional fit indices when latent interactions are included, with the exception of the Akaike information criterion (AIC; Akaike, 1973) and the sample-size adjusted Bayesian information criterion (BIC; Schwartz, 1978). Both AIC and BIC can be used to compare nonnested model, with smaller values indicating better model fit and model parsimony. The appropriateness of a structural model with latent interactions can be evaluated by comparing the size of the BIC for a model including the latent interaction and excluding it. The BIC should either be smaller or roughly the same to indicate that adding the latent interaction term does not worsen the model fit (for an example, see Bentley et al., 2013). The moderation effect was tested by investigating the significance of the interaction effect and the generated confidence intervals based on bias-corrected bootstrap procedures.

A potential threat to the trustworthiness of mediation models is the problem of endogeneity (Antonakis, Bendahan, Jacquart, & Lalive, 2010). We therefore conducted a Hausman test by testing whether constraining the correlations between the disturbance terms of the endogenous variables would result in lower model fit. A nonsignificant Wald test indicated that this was not the case (value = 1.74, $df = 2$, $p = ns$). We therefore concluded that the threat of endogeneity is minimal.

Results

The hypothesized relationships are summarized in Figure 1. Descriptive statistics, correlations, and reliabilities are presented in Table 1.

Preparatory Analyses

We first ran confirmatory analyses to validate the measurement model. As noted in Table 2, the baseline measurement model, in

¹ Due to space reasons, we could not include the fifth item of the Work-Family Conflict Scale ("My job produces strain that makes it difficult to fulfill family duties"). However, because of the content of the other items and the acceptable reliability index ($\alpha_{T1} = .89$, $\alpha_{T2} = .88$), we believe that we covered the construct work-family conflict with the four chosen items and received reliable results.

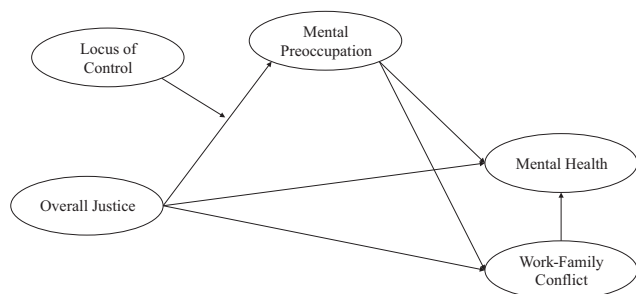


Figure 1. Conceptual model with hypothesized relationships.

which all study variables loaded on their respective factors, resulted in excellent fit (Comparative Fit Index [CFI] and Tucker-Lewis Index [TLI] = .98, root mean square error of approximation [RMSEA] = .03). Inspection of the correlations revealed that mental preoccupation with work T2 and work-family conflict T2 were highly correlated ($r = .54, p < .001$). We compared two nested models to evaluate the discriminant validity of these two constructs. To do this, we compared the baseline measurement model (Model 1) to a model where mental preoccupation with work T2 and work-family conflict T2 loaded together on one factor (Model 2). The constrained model was significantly worse fitting ($\Delta\chi^2 = 615.63, \Delta df = 6, p < .001$). This provided confidence for the discriminant validity of our measures for these constructs.

Next, we fitted the baseline structural model (Model 3) which included the control variables age, gender, and education. As noted in Table 2, this model provided good fit to the data (CFI = .96, TLI = .95, RMSEA = .05). In accordance with the hypothesis based on Judge and Colquitt (2004), in Model 3, we estimated a direct path between work-family conflict T2 and mental health T2. Next, we estimated a model which included the latent interaction between overall justice and locus of control (Model 4). If the value of BIC in Model 4 is similar or smaller than the BIC value of Model 3, investigating the results of that model is justified.

Test of Hypotheses

Results of the structural equation modeling analyses (Model 3) are displayed in Figure 2. In support of Hypothesis 1, overall

justice at T1 was significantly positively related to mental health at T2 while controlling for mental health at T1 ($\beta = .12, p < .05$).

As expected for Hypothesis 2, overall justice was significantly negatively related to mental preoccupation with work ($\beta = -.17, p < .05$) as was mental preoccupation with work to mental health T2 while controlling for mental health at T1 ($\beta = -.18, p < .001$). The indirect effect of mental preoccupation with work for the relationship between overall justice and mental health was significant (estimate = .030, $p < .05$, 95% CI [0.000, 0.060]). Therefore, Hypothesis 2 was supported.

Concerning Hypothesis 3, the association between overall justice and work-family conflict at T2 while controlling for work-family conflict at T1 was not significant ($\beta = -.07, p = .11$). Therefore, we regard Hypothesis 3 as not supported.

The results revealed a significant relationship between overall justice and mental preoccupation with work as well as a significant relationship between mental preoccupation with work and work-family conflict at T2 while controlling for work-family conflict at T1 ($\beta = .30, p < .001$). Also, the indirect effect of mental preoccupation with work for the relationship between overall justice and work-family conflict was significant (estimate = $-.051, p < .05$, 95% CI [$-0.099, -0.003$]). Therefore, Hypothesis 4 was supported. Table 3 provides an overview of the total, direct and indirect effect for the analyses pertaining to Hypothesis 2 and Hypothesis 4.

For testing Hypothesis 5, we estimated a moderated mediation model (Model 4). This model had a BIC of 24,673.43. As the value of BIC in Model 3 was only marginally smaller than the BIC value of Model 4 ($\Delta BIC = 2.20$), investigating the results of that moderated mediation model was justified. The latent interaction between overall justice and locus of control was significant ($B = .28, p < .05$). The pattern of the interaction is displayed in Figure 3. As expected, the relationship between overall justice and mental preoccupation with work was stronger for externals. Therefore, Hypothesis 5 was supported.

Following up on these results, we used bootstrap procedures to also test the conditional effect of locus of control for the indirect effect linking overall justice, mental preoccupation with work and mental health. The indirect effect of overall justice on mental health through mental preoccupation with work was significant for externals (estimate = .033, $p < .05$, 95% CI [0.011, 0.069]) but

Table 1
Descriptive Statistics, Correlations, and Reliabilities (in Parentheses) of the Research Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Overall justice T1	3.67	0.81	(.87)									
2. Locus of control T1	3.83	0.54	.39***	(.77)								
3. Mental preoccupation T2	2.97	1.07	-.22***	-.20***	(.92)							
4. Mental health T1	3.31	0.39	.31***	.56***	-.34***	(.85)						
5. Mental health T2	3.30	0.40	.35***	.43***	-.38***	.66***	(.84)					
6. Work-family conflict T1	2.59	0.98	-.22***	-.14**	.43***	-.42***	-.25***	(.89)				
7. Work-family conflict T2	2.48	0.95	-.26***	-.15**	.54***	-.37***	-.38***	.75***	(.88)			
8. Age	42.90	11.34	.14**	.05	-.00	.12*	.13**	-.14**	-.15**	(—)		
9. Gender	0.42	0.49	.19***	.23***	-.03	.07	.17**	.09	.03	.17**	(—)	
10. Education	0.70	0.46	.10*	.27***	.01	.08	.08	.20**	.16**	-.16**	.29***	(—)

Note. $N = 412$. Gender (0 = woman, 1 = man); education (0 = lower education, 1 = university/college degree).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
Measurement and Structural Model Tests

	χ^2	df	CFI	TLI	RMSEA	AIC	BIC
Measurement models							
Model 1: Baseline measurement model	338.49	271	.980	.976	.032	19,889.788	19,979.656
Model 2: MPT2 and WFCT2 as one-factor	954.13	277	.886	.866	.077	20,496.171	20,580.952
Structural models							
Model 3: Baseline structural model	608.46	334	.956	.947	.045	24,148.496	24,671.229
Model 4: Latent interaction model						24,146.673	24,673.427

Note. *df* = degrees of freedom; CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; RMSEA = root mean square error of approximation; AIC = Akaike information criteria; BIC = sample-size-adjusted Bayesian information criteria; MPT2 = mental preoccupation with work Time 2; WFCT2 = work–family conflict Time 2.

not for internals (estimate = $-.005$, $p > .05$, 95% CI [-0.036 , 0.018]).

To test the conditional effect of locus of control for the indirect effect of mental preoccupation with work for the relationship between overall justice and work–family conflict, we also used bootstrap procedures. The indirect effect of overall justice on work–family conflict through mental preoccupation with work was significant for externals (estimate = $-.127$, $p < .01$, 95% CI [-0.242 , -0.050]) but not for internals (estimate = $.019$, $p > .05$, 95% CI [-0.074 , 0.120]).

Discussion

The present study investigated the mechanism linking overall justice to health. The stressful nature of injustice (Vermunt & Steensma, 2001) was shown to be related to heightened mental preoccupation with work, prolonging the mental representation of injustice, and thereby impairing health, which is consistent with the allostatic load model (McEwen, 1998). Also, mental preoccupation with work mediated the relationship between overall justice and work–family conflict. Further, locus of control was shown to moderate the relationship between overall justice and the mediator mental preoccupation with work; such that the effects were stronger for individuals with an external locus of control. The results confirm and extend previous research (Ndjaboué et al., 2012; Robbins et al., 2012) on the predictive value of overall justice perceptions at the workplace on health.

With mental preoccupation with work, we thus laid out a process of how justice perceptions at work may be linked to employee

health. While other stress theories (Bakker & Demerouti, 2007; Hobfoll, 1989) would have made the prediction of the direct effect between justice perceptions and health, the allostatic load model (McEwen, 1998) is very well fitted to predict the mediating effect of mental preoccupation with work. The allostatic load model is a solid theoretical framework stemming from biological and health sciences, and it could be argued that this makes it better suited to make predictions about health than other stress theories. Understanding the theoretical underpinning is important for the emerging research stream on organizational justice and health (Elovainio et al., 2002). In a review of the literature of justice perceptions and health outcomes, Greenberg (2010) concludes,

although new findings are emerging on a regular basis, existing evidence has been sufficiently consistent and compelling to allow a conclusion to be drawn about the relationship between justice and health: individuals who perceive injustice in their workplaces are inclined to suffer mental and physical illness. (p. 206)

Therefore, the next step in research on organizational justice and health is to open the black box (as Hagedoorn, Buunk, & Van de Vliert, 1998 made the claim in 1998 on justice and work-related outcomes) and study intervening mechanisms.

The present study also contributes to the growing literature linking biological, social and psychological frameworks by using the allostatic load model to understand the relationship between work and organizational factors and employee health. First, we extend the range of stressors that can be considered to create allostatic load and long-term negative stress responses. The allo-

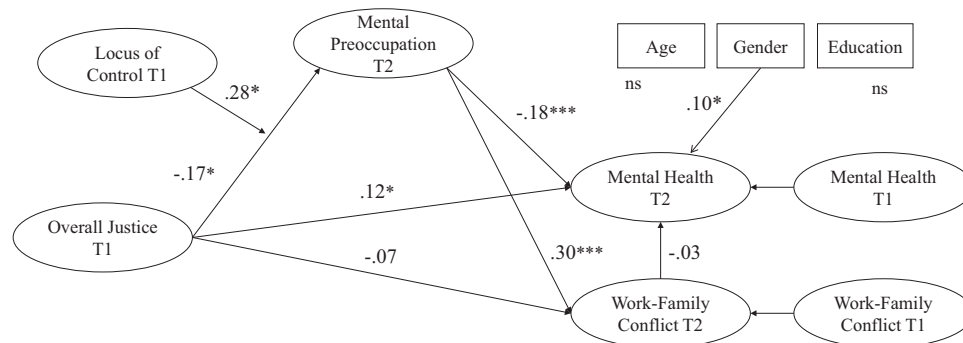


Figure 2. Results of the structural model analyses. Standardized estimates displayed (unstandardized estimate for interaction effect).

Table 3
Total, Direct, and Indirect Effects

	Estimate	SE	p
Effects from OJT1 to MHT2			
Direct	.123	.060	.042
Indirect OJT1—MPT2—MHT2	.030	.015	.041
Total	.157	.061	.010
Effects from OJT1 to WFCT2			
Direct	-.068	.043	.113
Indirect OJT1—MPT2—WFCT2	-.051	.024	.035
Total	-.119	.044	.007

Note. Standardized estimates are presented. OJT1 = overall justice Time 1; MHT2 = mental health Time 2; MPT2 = mental preoccupation with work Time 2; WFCT2 = work-family conflict Time 2.

static load model has been relied upon to make connections between stressors like job demands and job control or job insecurity and health (Näswall, Lindfors, & Sverke, 2012; von Thiele Schwarz, 2011). We propose that the allostatic load model can predict consequences of the work stressor organizational injustice. Second, we add to previous studies linking injustice to ill health in general, and to indicators of allostatic load in particular (Elovainio et al., 2010; Elovainio et al., 2006), by testing a cognitive mediator mental preoccupation with work.

In their study relating organizational justice dimensions to perceived stress, Judge and Colquitt (2004) suggested work-family conflict to be a linking mechanism because organizations perceived as fair are more responsive to work-family tensions. In our study, the relationship between overall justice perceptions and work-family conflict and the relationship between work-family conflict and mental health was not significant. This might be due to the fact that we measured overall justice and not justice dimensions, and due to our health measure, namely mental health, instead of perceived stress like Judge and Colquitt (2004). Mental health is a particularly relevant outcome to study as mental health problems are increasing with societal, organizational as well as individuals' costs (Bloom et al., 2011). Also, we believe there might be a difference due to the studied population. Although Judge and Colquitt (2004) did not find a significant effect of the presence or use of work-family policies on perceptions of work-family conflict, the U.S. system and culture regarding work-family concerns is substantially different from the situation in Sweden (the Nordic model). Because of the work-family policies enforced by public policies in Sweden, it is less likely in Sweden than in the U.S. context that differences in justice perceptions reflect significant differences in work-family responsiveness or culture at the workplace. Therefore, the mediating role of work-family conflict for the relationship between organizational justice and health may be limited to either certain criterion variables or certain contexts and populations.

In terms of potential mediating factors for justice effects, Colquitt, Greenberg, and Scott (2005) speculated that the nature of mechanisms for justice effects may depend on whether entity or event justice judgments are in focus. Cognitive mediators may be more relevant for entity justice judgments whereas emotional mediators may function better as mechanisms for event justice judgments. An unfair single event may trigger strong emotions like anger while a lack of overall justice across various situations may

trigger different thinking processes (similar to the "hot" and "cold" view of organizational justice, see Barsky & Kaplan, 2007). Therefore, cognitive mediators may be better suited to transmit the effects of overall justice to outcomes. In this study, we focused on a cognitive mediator for the relationship between event justice judgment overall justice and health. Particularly for health, when longer time spans are investigated, both entity justice judgments and cognitive mediators are appropriate. However, for predicting daily variations in mood and affect, single justice events and emotional mediators are likely to be more fitting.

Future studies might find the allostatic load model (McEwen, 1998) and the concept of mental preoccupation with work (Siegrist, 1996; von Thiele Schwarz, 2011) helpful to understand other stressor-health associations in the organizational context. Mental preoccupation with work could potentially mediate the impact of interpersonal stressors or work stressors that produce emotional responses. For instance, customer incivility (Walker, van Jaarsveld, & Skarlicki, 2014) and emotional labor (Rupp & Spencer, 2006) may unfold harmful long-term consequences when mental preoccupation is elicited. Furthermore, following the argument that it is the prolonged and repeated nature of injustice that shapes the negative health effects, more daily and diary studies in the justice literature are needed to map these processes more clearly (for an exception, see Holtz & Harold, 2009).

In future studies on organizational justice and health, the individual difference variable locus of control might be fruitful to include as our results showed the indirect effects for externals only. Thus, the indirect effects, through which mechanism organizational justice perceptions transmit its effect on relevant indicators of health, remains unclear for internals. This indicates that further mediation studies are needed which also capture the process by which justice perceptions are related to health for internals. Internals may generally perceive their work setting as more fair, as seen in the positive correlation in this study and previous works (Spector, 1982; Sweeney, McFarlin, & Cotton, 1991). However, it is of importance for creating meaningful interventions to understand how internals deal with injustice at work, which steps they take, whether those are behavioral steps or also cognitive or

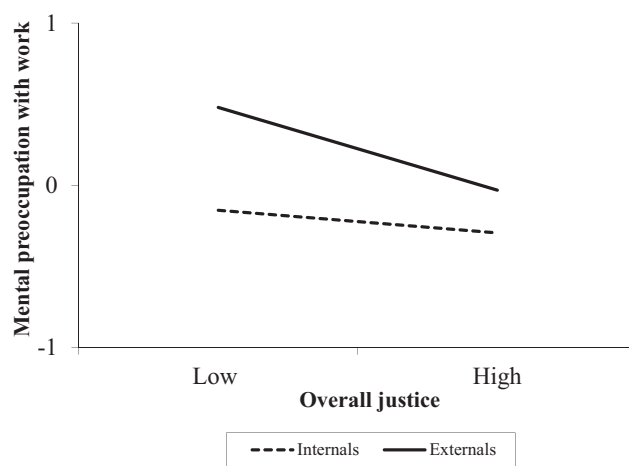


Figure 3. Interaction between overall justice and locus of control on mental preoccupation with work.

emotional steps. A question that could be addressed in future studies is whether internals may behave differently toward organizational representatives, for instance that they behave more assertively (Korsgaard, Roberson, & Rymph, 1998). Also, future directions that look into self-regulatory behavior and action-state orientation might be valuable to pursue as action orientation has recently been shown to increase justice effects as opposed to state orientation (van Dijke, De Cremer, Brebels, & Van Quaquebeke, 2013).

Practical Implications

One of the results in this study was that organizational justice, a workplace factor, had a significant impact on both mental health and conflicts between work and family life. Therefore, letting employees participate in decision-making processes at work, giving them a voice, treating them with courtesy and respect, and more generally acting fairly, cannot be emphasized enough to practitioners.

In addition to targeting injustice as such, there is much to gain from increasing positive experiences at work (Gross et al., 2011) and from interventions aiming at individual factors such as locus of control and mental preoccupation with work in order to improve employees' well-being and satisfaction at work (see also Barclay & Skarlicki, 2009; Geurts & Sonnentag, 2006). In order to secure that employees have resources left to tackle job stressors and challenges in the long run, creating room where there is no need for the physiological activation of body systems associated with stressors appear to be critical. This includes various recovering activities that create positive feelings (e.g., happiness), including doing physical exercise, spending time on hobbies and with family and friends (Oerlemans, Bakker, & Demerouti, 2014; Zijlstra & Sonnentag, 2006). These activities may decrease the elicitation of mental preoccupation with work when injustice is perceived at work (Zijlstra, Cropley, & Rydstedt, 2014). Further, it appears internal locus of control can buffer against reacting with being mentally preoccupied with work when perceiving injustice. In the locus of control literature, cognitive-behavioral therapy has been suggested in order to learn how to solve problems with own actions (Vincent, Walsh, & Lewycky, 2010).

Limitations

As other studies, our study has limitations that we want to address. First, the nonresponse analysis showed that while there were no differences in mental health, work-family conflict, locus of control and education, those who participated in both waves had more positive organizational justice perceptions, were younger, and more likely to be men. Thus, future research is needed to clarify the extent to which these factors affect the generalizability of the findings. Also, the study sample is limited to one organizational group in one country, that is, accountants in Sweden. However, it seems plausible that the work of accountants in a European country can be generalized to other highly educated office workers in industrialized countries.

The effect sizes we found for the indirect effects were relatively small. Because there are likely multiple mediators and processes linking justice perceptions to health, it is what we expected. More studies are needed to understand this relationship and its psychological and physiological mediators better.

Although the nonsignificant Hausman test revealed that endogeneity was likely not a problem, our design and analyses do not allow us to infer causality. As Little, Card, Bovaird, Preacher, and Crandall (2007) point out, the true cause of these relationships may be unmeasured, and given the limited number of included constructs, it is possible that unmeasured variables are driving these relationships. Factors pertaining to life outside of work, life events, or health behaviors may all play a role for predicting changes in health. We focused only on one aspect of the work sphere, justice perceptions. However, it is not within the scope of the paper to include all possible antecedents or mechanisms predicting health but we set out to test a mechanism for justice effects. The relationships in the hypothesized model follow a presumed causal flow, such that justice perceptions affect mental preoccupation with work, which leads to work-family conflict and mental health. Despite support for the model, the requirements to draw causal inferences are at least three data points and also experimental studies (James, Mulaik, & Brett, 1982). Therefore, further studies on the mechanisms that link justice perceptions to health are needed.

Conclusions

The present study builds on efforts to explain the mechanisms of the relationship between overall justice and health, a line of research becoming more important as costs related to work-related stress and associated health illnesses increase. Given the relative lack of knowledge regarding the health consequences of justice perceptions, we want to encourage researchers to study short-, medium-, and long-term health effects of justice perceptions. The study provides a moderated mediation model with mental preoccupation with work as a critical cognitive factor linking overall justice perceptions to health. The results suggest that constantly being occupied with one's work may be negative for individuals' psychological functioning, particularly for individuals thinking they are not in control of things. We encourage researchers to build on this promising avenue, for further understanding how "doing justice" can sustain and improve employees' well-being during the course of their working life.

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