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Exploring Predictors and Consequences of Embitterment in the Workplace

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Abstract

Research on the feeling of embitterment at work is still in its infancy. The present study investigated the predictors and consequences of the feeling of embitterment at work. It was hypothesised that organisational injustice as well as over-controlling supervision would predict embitterment at work and that embitterment would be associated with work-related rumination. Three hundred and thirty-seven employees completed an online survey. Regression analysis revealed that procedural injustice and over-controlling supervision were significant predictors of embitterment and that embitterment contributed significantly to the prediction of increased affective rumination and reduction in detachment. Mediation analysis indicated that embitterment at work was a significant mechanism through which organisational injustice and over-controlling supervision exerted their effect on affective rumination, which is indicative of insufficient recovery from work. Findings suggest that breaches in organisational justice can generate feelings of embitterment at work, which in turn can interfere with employees' ability to adequately recover from work.

Practitioner Summary: The purpose of this study was to investigate predictors and consequences of embitterment in the workplace, by using an online questionnaire. Findings suggest that perceived unfairness, because of structural and organizational aspects, predict feelings of embitterment and that feeling embittered at work can prevent employees from adequately recovering from work.

Keywords: Post-traumatic embitterment disorder, organisational justice, work-related rumination, recovery

Introduction

Post-traumatic embitterment disorder (PTED) was initially defined by Linden (2003) as the mental reaction to critical, yet common but not everyday, negative life events that are mainly experienced as unjust, personally humiliating or hurtful and can result in persistent psychological stress. Embittered individuals feel that they have been unjustly and unfairly treated; they show a desire for revenge against the person responsible for their negative state, but at the same time they reject help from others (Linden, 2003). As noted by Sensky (2010) using the term PTED however might imply that the features of embitterment result from a single incident. Sensky (2010) thus, described the condition as chronic embitterment, which we use in the present study. Any life event can evoke feelings of embitterment, however in one study Linden, Baumann, Rotter and Schippan (2007) revealed that such critical life events were, in most cases, work-related (73%). However, little is known about the feeling of embitterment in occupational settings and the main objective of this study was to examine predictors and consequences of chronic embitterment within the workplace.

To date, only few studies have investigated the emotion of embitterment in the workplace. Karatuna and Gök (2014), revealed that workplace bullying was highly correlated with embitterment reactions. Interestingly, the core feature of PTED, that is, feelings of injustice, showed the highest mean scores among participants. Given that workplace bullying is regarded as a form of injustice, due to the fact that acts construed as bullying are appraised as unjust, disrespectful and humiliating (Namie, 2007), this finding is in line with Sensky's (2010) and Muschalla and Linden's (2011) argument that the experience of embitterment arises due to the perceived failure of *organisational justice*. Sensky, Salimu, Ballard, and Pereira (2015) have indeed provided some initial support to this position, as they found that employees who experience embitterment in their workplace report experiencing low levels of

procedural justice. However, Sensky et al. (2015) focused only on one aspect of organisational justice.

In the present study, Colquitt's four-component model of organisational justice was applied; *distributive justice* (Leventhal, 1976), is communicated as the subjective perception of how fairly outcomes such as rewards have been distributed; *procedural justice* is communicated as how fairly the organisational systems/procedures have been used to allocate these outcomes (Leventhal, 1980; Thibaut and Walker, 1975); *interpersonal justice*, concerns how sensitively and fairly the information has been communicated to the employees (Greenberg, 1993) and *informational justice*, is communicated as how explanatory the information given to employees was with regard to why a specific outcome happened (Greenberg, 1993).

Over a period of time, perceptions of unfairness in the workplace may be considered a source of stress and contribute to chronic embitterment. Given that embitterment is triggered by events that are experienced as unjust (Linden, 2003), it seems plausible to consider perceived organisational injustice as a predictor of chronic embitterment in the workplace.

Hypothesis 1a: Participants reporting lower levels of perceived procedural justice will report higher levels of embitterment.

Hypothesis 1b: Participants reporting lower levels of perceived distributive justice will report higher levels of embitterment.

Hypothesis 1c: Participants reporting lower levels of perceived interpersonal justice will report higher levels of embitterment.

Hypothesis 1d: Participants reporting lower levels of perceived informational justice will report higher levels of embitterment.

Scholars such as Dupré and Barling (2006), have considered over-controlling supervision as a form of organisational injustice. When subordinates perceive that their work

performance is highly controlled by their supervisors they perceive this is a lack of respect, dignity and courtesy, and thus they are likely to experience organisational injustice (Tyler and Bies, 1990). Thus, the present study further examined whether chronic embitterment in the workplace can be predicted by perceptions of over-controlling supervision. However, in the present study we do not treat over-controlling supervision as a component of organisational injustice but as two discrete variables, due to the fact that over-controlling supervision refers precisely to the relationship between two parties (i.e. employee and supervisor) based on levels of control.

Hypothesis 1e: Participants reporting high levels of over-controlling supervision will report higher levels of embitterment.

With regards to what might be the consequences of chronic embitterment in the workplace, the inability to adequately recover from work was also examined. Work recovery is best understood as the process that revitalizes one's energy resources (Zijlstra, Cropley, & Rydstedt, 2014). Inability to do so might lead to crucial consequences both on the individual's job performance and well-being. For instance, Rook and Zijlstra (2006) revealed that insufficient recovery can result in fatigue. Insufficient recovery could further lead to strain and in the long term it might negatively impact health and consequently increase employees' sickness absence (Meijman and Mulder, 1998).

The mechanism facilitating recovery is conceptualised within the context of the Job Demands-Resources-Recovery model (JD-R-R; Kinnunen, Feldt, Siltaloppi, & Sonnentag, 2011) — which is an extension of the original Job-Demands Resources model (JD-R; Demerouti, Bakker, Nachreiner, and Schaufeli, 2001) — by considering recovery as a significant mediation mechanism that underlies the relationship between work characteristics and well-being. Kinnunen et al.'s (2011) JD-R-R model postulates that job demands (e.g. work pressure) inhibit recovery leading therefore to impaired health, whereas job resources

(e.g. job autonomy) facilitate recovery and help maintain positive work related attitudes such as work engagement.

In order to be able to recover after work, people have to physically and cognitively ‘switch-off’ from work. However, one of the main factors that prevents people from ‘unwinding’ after work is their inability to psychologically detach and disengage from work at the end of their working day (Etzion, Eden, and Lapidot, 1998). Employees do not fully detach from their work unless they stop thinking of work-related issues in non-working time (Rook and Zijlstra, 2006). Prolonged physiological arousal and delayed recovery from stress has been linked to individuals’ unintentional persistent thoughts, termed as *rumination* (Roger and Jamieson, 1988). Work-related rumination refers to the repetitive thinking about work-related issues when the individual actually abstains from demands necessitating these thoughts and has thus been conceptualised as a “proxy of insufficient recovery” (Cropley and Millward Purvis, 2003, 197).

Recently, Cropley and Zijlstra (2011), supported a three-factor conceptualisation of work-related rumination and labelled these as *affective rumination*, *problem-solving pondering* and *detachment*. ‘Affective rumination’ is described as a cognitive state characterised by the appearance of intrusive, pervasive, recurrent thoughts about work, resulting in a negative emotional response. By ruminating, psychophysiological arousal remains high, people remain emotionally and cognitively ‘switched on’ during non-work time, and thus the recovery process remains incomplete (Cropley and Zijlstra, 2011). Affective rumination is a form of intrusive thoughts about work, which are negative in affective terms (Pravettoni, Cropley, Leotta, and Bagnara, 2007). Interestingly, Linden et al. (2007) supported that having intrusive thoughts is a dominant characteristic of embittered individuals, as in the case of embitterment individuals are frequently reminded of the insult and visually recollect the situation in which the insult was uttered. Thus, it seems plausible

that chronic embitterment, although conceptually distinct, would nonetheless be related to affective rumination.

Employees might ruminate with a problem-solving focus, either in order to find the best solution to the encountered work-related problem, or re-evaluate their performance as an attempt to improve it. In this respect, ‘problem-solving pondering’ can be regarded as less damaging and even beneficial for the recovery process, as it does not involve psychological and physiological arousal (Cropley and Zijlstra, 2011). With regards to embittered individuals, it is possible that their post-work thoughts would not be characterised as having a problem-solving focus. According to Linden (2003), individuals who experience embitterment tend to feel hopeless and find no meaning in putting further effort into solving their ‘problem’, which in their case the ‘problem’ would be the perceived unjust, insulting event/person that got them into this negative state. Therefore, it seems plausible that embitterment would not be positively associated with problem-solving pondering, but would be negatively associated with this form of post-work thinking.

Finally, ‘detachment’ from work refers to an “individual’s sense of being away from the work situation” (Etzion et al. 1998, 579). Not only should employees abstain from work-related activities but most crucially detachment implies that an employee completely disengages mentally from work. As embittered individuals “recall the insulting event over and over again” (Linden, 2003, 197), it is logical that embittered individuals would not detach from work and thus embitterment would show a negative correlation with detachment.

Hypothesis 2a: Participants reporting high levels of embitterment will report high levels of affective rumination.

Hypothesis 2b: Participants reporting high levels of embitterment will report low levels of problem-solving pondering.

Hypothesis 2c: Participants reporting high levels of embitterment will report low levels of

detachment.

According to Cropley and Zijlstra (2011), a problematic work situation can foster rumination and impact the unwinding process. For instance, when employees perceive injustice at their work, this makes the work environment problematic and possibly employees would start to ruminate about these problematic issues and thus their recovery process would be impaired. It seems highly plausible therefore, that organisational injustice, chronic embitterment, and work-related rumination are related. To our knowledge, no previous study has tested the mediating effect of embitterment on the relationship between organisational injustice and work-related rumination. Organisational injustice is undoubtedly a problematic issue of the work environment, which could evoke feelings of embitterment. In turn the feeling of embitterment impairs the recovery process, as embittered workers are likely to ruminate and fail to adequately psychologically detach from work.

Hypothesis 3: Embitterment will mediate the relationship between significant organisational injustice predictors of embitterment and affective rumination.

Method

Three hundred and thirty-seven ($N = 337$) employees (Males = 26.1%, Females = 73.9%) took part in the study. The age range of participants was between 20-70 years ($M = 36.87$, $SD = 12.37$). The majority of participants (78.6%) worked full-time. A hundred sixty-two participants (48.1%) worked on average 31-40 hours per week, 100 participants (29.7%) worked 41-50 hours per week, 30 participants (8.9%) worked 21-30 hours per week, 24 participants (7.1 %) worked 51-60 hours per week, 16 participants (4.7%) worked 10-20 hours per week and 5 participants (1.5%) worked more than 61 hours per week. A convenience sampling strategy was employed as participants were recruited through the researchers' professional networks. Individuals who chose to participate were encouraged to forward the link to other colleagues who were over the age of 18 and working. Details of the

study and a live link to the survey were also posted on professional networking sites and information about the study was also distributed via human resource managers of organizations the researchers had contract with. Human Resources managers were asked to circulate an information sheet describing briefly the nature and aim of the study to all their employees. Those who were interested in taking part were then emailed a link to the online survey. More than half of the participants (75%) scored over the cut-off score of 1.6 on the embitterment scale, this indicates that the majority of the participants were embittered (Linden et al., 2009).

Perceptions of organisational justice were assessed using the four dimensions (distributive, procedural, interpersonal and informational) of the Organisational Justice Perceptions measure (OJP; Colquitt, 2001). Procedural justice was assessed with seven items referring to procedures used to arrive at the employees' outcome (e.g. pay, promotions, etc.) (e.g. 'Have you been able to express your views and feelings during those procedures?'). Distributive justice, referring in general to the employees' outcomes, was measured using four items (e.g. 'Does your outcome for example pay, promotions, etc., reflect the effort you have put into your work?'). Interpersonal justice was measured with four items in reference to the individual who enacted the procedure, in this case the employees' supervisor (e.g. 'Has he/she treated you with respect?'). Finally, informational justice, in reference to the individual who enacted the procedure, was measured with five items (e.g. 'Has he/she explained the procedures thoroughly?'). Respondents were asked to rate each statement on a 5-point scale (1= *to a small extent* to 5 = *to a large extent*). Cronbach's Alpha values for the present study were $\alpha = .87$ (procedural), $\alpha = .93$ (distributive), $\alpha = .87$ (interpersonal) and $\alpha = .91$ (informational).

Supervisory control was assessed using the Supervisory Control over work performance scale (SCOWP scale; Dupré and Barling, 2006). This scale is composed by 8

items and aims at assessing employees' perceptions of supervisory control over employees' work performance (e.g. 'My supervisor does not give me the freedom to do things that I want to do in my work'). Respondents were asked to rate each statement on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Cronbach's Alpha value for the present study was $\alpha = .86$.

Embitterment at work was assessed using the Post-traumatic Embitterment Disorder Scale (Linden et al. 2009), which is composed of 19 items aiming to assess features of embitterment reactions in the aftermath of negative events. As the present study explored embitterment in the workplace additional instructions asked respondents to 'please focus only on your experience at work' (Sensky, 2010). Each question was prompted with the words "I have experienced one or more distressing events at work..." and was then followed by 19 individual statements such as "...that causes me to be extremely upset when I am reminded of it". Participants were asked to indicate for each item on a 5-point scale to what degree the statement applies for them (0 = *not at all true* to 4 = *extremely true*). Cronbach's Alpha value for the present study was $\alpha = 0.96$.

Work-related rumination was assessed using the Work-related Rumination Questionnaire (WRRQ; Cropley, Michalianou, Pravettoni, and Millward, 2012). The WRRQ is a 15 item self-report measure designed to measure the three subscales of ruminative thinking; affective rumination, problem-solving pondering and detachment. Respondents are instructed to rate on a 5-point scale (1 = *very seldom or never* to 5 = *very often or always*), the relative frequency they engage in each of the three post-work forms of thinking. The affective rumination subscale includes 5 items such as 'Are you irritated by work issues when not at work?'. Included in the problem-solving pondering subscale are 5 items such as, 'I find solutions to work-related problems in my free time'. An item representative to the detachment subscale is, 'Do you feel unable to switch off from work?'. This scale has been

used in several studies (e.g. Querstret and Cropley, 2012), and it has good reliability and validity (Cropley et al., 2012; Syrek, Weigelt, Peifer, & Antoni, 2016). Cronbach's Alpha values for the present study were $\alpha = .93$ (affective rumination), $\alpha = .87$ (problem-solving pondering) and $\alpha = .84$ (detachment).

Single items; age, gender, having dependent children, hours worked per week were included in the survey in order to control for demographic data. Work pattern (1 = *9:00 to 17:00 [Mon-Fri]*, 2 = *rotating shifts*, 3 = *nonstandard shifts*, 4 = *nights/weekend work*) and work status (1 = *full time*, 2 = *part time*, 3 = *temporary worker*, 4 = *self-employed*) were also collected as demographic data.

Negative and Positive Affect (NA & PA; Watson, Clark, and Tellegen, 1988) were also controlled for as they could possible bias responses in the survey (Brief, Burke, George, Robinson, and Webster, 1988) and influence how employees judge the way they perceive organisational justice in their work context as well as their level of embitterment. NA and PA were measured using the PANAS scale (Watson et al. 1988). Respondents were asked to read the 20 single words and indicate to what extent they felt this way during the past month, against a 5-point scale (1 = *very slightly or not at all* to 5 = *extremely*).

Finally, the present study further controlled for two other variables (job demands and social support). Perceived job demands was measured using nine items from the Job Content Questionnaire (JCQ; Karasek et al. 1998). A sample item is "Do you have to work really hard?". Respondents were instructed to rate each statement on a 4 point-scale (1 = *never/almost never* to 4 = *often*). Cronbach's Alpha value for the present study was $\alpha = .73$. Workplace social support has been found to reduce the impact of stressors on employees (Griffith, Steptoe, and Cropley, 1999) and could potentially impact employees' perceptions on organisational justice as well as levels of embitterment. A five item scale developed by Undén, Orth-Gomér, and Elofsson (1991) was used. However, only four of the five items

were used in the present study as the first item ‘I have a good relationship with my supervisor’ was measured with the Supervisory control over work performance scale (Dupré and Barling, 2006). Each item was responded to on a four-point scale (1= *strongly disagree* to 4 = *strongly agree*). Cronbach’s Alpha value for the present study was $\alpha = .78$.

Data analysis

Data analyses were performed using IBM SPSS Statistics 21 and the mediation analyses were performed using the dialog box PROCESS (Hayes, 2013) on SPSS. For ease of understanding, the results are presented in four sections. In the first section, mean and standard deviation for all study and control variables are presented. In the second section, correlation analysis on the main study variables and control variables are reported. The third section presents multiple regression models testing whether distributive injustice, procedural injustice, interpersonal injustice, informational injustice and supervisory over control are significant predictors of embitterment, and also whether embitterment is a significant predictor of affective-rumination, problem solving pondering and detachment respectively. All regression models controlled for the effect of significant control variables. Finally, the fourth section presents the results of the mediation models.

Results

Mean and standard deviations for all study and control variables are presented in Table 1.

---Table 1 about here---

Bivariate correlation analysis was conducted using Pearson’s r correlation coefficient. As can be seen in the correlation matrix (Table 2), the correlation between all study variables were all significant and in the direction predicted by the hypotheses (1a – 1e, 2a & 2c). The significant positive correlation between problem-solving pondering and embitterment was not in the direction predicted by hypothesis 2b. Identification of potential confounds was

undertaken by reviewing the correlations between the proposed control variables and each outcome variables; embitterment for hypothesis 1 and affective rumination, problem-solving pondering and detachment for hypothesis 2a, 2b, 2c respectively.

---Table 2 about here---

Hypothesis 1a-1e (embitterment as outcome) was further tested using a multiple regression approach in which significant control variables were entered in model 1 and the predictor variables (supervisory over control, distributive, procedural, interpersonal, and informational justice) were entered in model 2. The results for embitterment are displayed in Table 3. Table 3 shows that the control variables accounted for 54.9% of the variance in embitterment. Control variables were statistically significant predictors. From the predictor variables entered in model 2 only supervisory control (2.5% of the unique variance) and procedural justice (0.7 % of the unique variance) contributed significantly to the prediction of embitterment.

---Table 3 about here---

Hypothesis 2a (affective rumination as outcome) was further tested using a multiple regression approach in which significant control variables were entered in model 1 and the predictor variable (embitterment) was entered in model 2. The results for affective rumination are displayed in Table 4. Table 4 shows that the control variables accounted for 49.1% of the variance in affective rumination. Control variables were statistically significant predictors. The predictor variable embitterment (6 % of the unique variance) entered in model 2 contributed significantly to the prediction of affective rumination.

---Table 4 about here---

Hypothesis 2b (problem-solving pondering as outcome) was further tested using a multiple regression approach in which significant control variables were entered in model 1 and the predictor variable (embitterment) was entered in model 2. The results for problem-

solving pondering are displayed in Table 5. Table 5, shows that the control variables accounted for 21.4% of the variance in problem-solving pondering. With the exception of social support, the remaining control variables were significant predictors within the model. The predictor variable embitterment entered in model 2 did not contribute significantly to the prediction of problem-solving pondering.

---Table 5 about here---

Hypothesis 2c (detachment as outcome) was further tested using a multiple regression approach in which significant control variables were entered in model 1 and the predictor variable (embitterment) was entered in model 2. The results for detachment are displayed in Table 6. Table 6 shows that the control variables accounted for 29.6% of the variance in detachment. With the exception of years worked in current role and PA the remaining control variables were significant predictors. The predictor variable embitterment entered in model 2 did contribute significantly, albeit weakly to the overall prediction of detachment (0.7 % of the unique variance).

---Table 6 about here---

The multiple regression analyses revealed that embitterment (6% of the unique variance) significantly predicted *affective rumination*. In order to test whether the feeling of embitterment mediates the relationship between the significant predictors of embitterment (i.e. procedural injustice and supervisory over-control) and affective rumination, two mediation analyses were performed. The model coefficients for all mediation analyses of affective rumination are presented in Table 7.

The first mediation analysis revealed that procedural injustice indirectly influenced affective rumination through its effect on embitterment. As can be seen from Table 7, perceptions of procedural injustice was significantly and positively correlated with embitterment (a_1) which was associated with a subsequent increase in affective rumination

(b_1). A bias-corrected bootstrap confidence interval for the indirect effect of embitterment ($ab_1 = 0.27$), was entirely above zero (95% CI [0.20, 0.35]); demonstrating a significant effect. There was no evidence that procedural injustice influenced affective rumination independent of its effect on embitterment because the direct pathway ($c_1 = 0.08$) was not statistically significant. These results represent a complete mediation effect of perceptions of procedural injustice through embitterment for its effect on affective rumination.

The second mediation analysis revealed that supervisory over-control indirectly influenced affective rumination through its effect on embitterment. As can be seen from Table 7, supervisory control was significantly and positively correlated with embitterment (a_2) which was associated with a subsequent increase in affective rumination (b_2). A bias-corrected bootstrap confidence interval for the indirect effect of embitterment ($ab_2 = 0.19$), was entirely above zero (95% CI [0.14, 0.25]); demonstrating a significant effect. However, there was also evidence that supervisory over-control influenced affective rumination independent of its effect on embitterment because the direct pathway ($c_2 = 0.07$) remained statistically significant. These results represent a partial mediation effect of supervisory over-control through embitterment for its effect on affective rumination.

---Table 7 about here---

Discussion

The present study examined the association between organisational justice, supervisory over-control, chronic embitterment and work-related rumination. It was hypothesised that the four concepts of organisational injustice and supervisory over-control, would be associated with increased levels of embitterment at work (Hypotheses 1a - 1e) and that embitterment would be associated with increased levels of affective rumination and decreased levels of problem-solving pondering and detachment (Hypotheses 2a - 2c). Except from hypothesis 2b, all the

remaining hypotheses were supported; the four concepts of organisational injustice and supervisory over-control were significantly correlated with embitterment in the direction predicted. Affective rumination correlated positively with embitterment and detachment correlated negatively with embitterment. The significant positive correlation between problem-solving pondering and embitterment however, was not in the direction predicted by hypothesis 2b. When applying the regression models, only supervisory over-control and procedural justice significantly predicted embitterment; high levels of supervisory control predicted an increase in embitterment and low levels of procedural justice predicted an increase in embitterment. With regards to predictors of affective rumination, problem-solving pondering and detachment, the regression models indicated that only affective rumination and detachment were significantly predicted by embitterment; high levels of embitterment predicted higher levels of affective rumination and low levels of detachment.

The present study contributes to the understanding of the distinctive features of ruminations occurring in the experience of embitterment in the workplace. To begin with, findings from the regression model indicate that after controlling for variables that could possibly impact the association between our study variables, embitterment accounted for 6% of the unique variance in affective rumination, suggesting that embitterment is indeed a significant factor in the context of insufficient recovery from work. As Linden (2003) suggested, individuals experiencing embitterment might regard their ruminations in a positive way, in that they consider it important not to forget the causes of their embitterment as they “feel the need to persuade others of the strengths of their cause” (Linden, 2003, 198) and they can thus persevere in seeking remedies of their perceived injustice. However, given that affective rumination can result in a negative emotional response (e.g., annoyance, feeling emotionally fatigued), embittered individuals might not actually benefit from engaging in such recurrent thoughts.

Hypothesis 2b was not supported by the findings. However, the fact that embitterment correlated positively with problem-solving pondering furthers our knowledge and understanding of the distinctive features of ruminations when embittered. Although the correlation between problem-solving pondering and embitterment was weaker than the correlation between affective rumination and embitterment, the fact that embitterment correlates significantly with problem-solving pondering might imply that individuals experiencing embitterment do consider problematic work issues (in their case the possible cause of their embitterment), and might try to engage in ways that potentially could enable them to overcome embitterment. This finding also suggests that individuals experiencing embitterment may not necessarily be characterised as hopeless and as lacking for strive and motivation to make an effort to 'fix' things, as Linden (2003) supported. Rather, this finding indicates that there is some hope in individuals experiencing embitterment and that they are willing to put some effort to solve the 'problem'. Given the fact that embitterment did not significantly predict problem-solving pondering within the regression model, this might also however suggest that experiencing embitterment in the workplace and engaging in affective rumination about the causes of embitterment might encourage individuals to apply problem-solving practises to aspects of their work, other than the causes of embitterment.

With regards to what predicts chronic embitterment in the workplace, the present findings are consistent with Sensky's et al., (2015) who reported an association between workplace embitterment and procedure justice, and further supports Linden's (2003) arguments that embitterment is mainly attributed to the individual's experience of injustice or unfairness. However, the present findings specifically suggest that perceived unfairness, because of structural and organisational aspects, significantly predict feelings of embitterment. The fact that reduced levels of perceived procedural justice predicted high levels of chronic embitterment indicates that when employees perceive injustice or unfairness in the procedures

and processes that led to the decisions and distribution of outcomes, then they might experience feelings of embitterment.

A possible explanation for why procedural injustice and over-controlling supervision were significant predictors of embitterment may be due to the fact that both predictors share in common the concept of 'control'. Procedural justice is rooted in Thibaut and Walker's (1975) criteria for procedural justice; process control (e.g., the ability to voice one's views and arguments during a procedure) and decision control (e.g., the ability to influence the actual outcome itself), as well as Leventhal's (1980) fair process criteria, such as consistency, lack of bias, correctability, representation, accuracy and ethicality. Thibaut and Walker (1975) argued that influence and sense of control are vital components of procedural justice, and Leventhal (1980) further argued that procedures should be representative of employees' views and opinions. These assertions are violated when participation and autonomy are lacking in supervisor-subordinate interactions (Judge and Colquitt, 2004).

The two main criteria of procedural justice (i.e. process and decision control) are reflected in Colquitt's (2001) organisational justice perceptions measure employed in the present study and reflect the notion that lack of control has the ability to amplify perceptions of injustice. Moreover, over-controlling supervision accounted for 2.7% of the unique variance in embitterment. Dupré and Barling, (2006), found that excessive control over employees' performance may have a detrimental influence on employees. When employees are subject to controlling supervision, they may feel unjustly treated. The experience of being controlled in a large extent causes employees to feel that they personally lack freedom and control in the way they perform their work, which subsequently has been found in the present study to generate experiences of embitterment. Thus, organisational injustice in the form of lack of control predicts feelings of embitterment in the workplace.

This study also examined the mediating effect of chronic embitterment in the

relationship between procedural injustice, supervisory over-control and affective rumination. Chronic embitterment was found to be a significant mechanism through which procedural injustice and supervisory over-control exerted their effect on affective rumination. Experiencing procedural injustice can generate feelings of embitterment leading to rumination, which in turn prevents employees from sufficiently recovering between work shifts.

Although the current study advances knowledge of the predictors and consequences of embitterment in the workplace, there were also some limitations. The cross-sectional nature of the study makes it impossible to establish causality. Although our interpretation is that lack of perceived procedural justice predicts high levels of embitterment, it is also possible that the direction of causality is reversed. Another limitation is the self-report nature of the data. According to Podsakoff, MacKenzie, Lee, and Podsakoff (2003) self-report measures threaten the validity of the conclusions about the relationship between measures because of the measurement error enclosed in common method variance (e.g. social desirability). However, this should have been lessened due to the fact that the online survey was anonymous and this should have reduced respondent's evaluation apprehension and made them less likely to respond in a more socially desirable manner. Moreover, the use of different scale points for the various measures used, as well as the use of verbal labels for the scales, might have controlled for common method variance and reduced the likelihood of participants responding 'by rote' (Podsakoff et al. 2003). Finally, due to the fact that 75% of the sample were above the cut-off point on the PTED scale (Linden et al., 2009), this might impact the generalizability of the findings as people high in embitterment might be more motivated to participate.

These findings nonetheless, also raise some practical implications for organisations to consider. The fact that perceived organisational injustice is implicit in the experience of embitterment, suggests that the organisational management should be attentive to organisational justice issues and the amount of control exerted by supervisors. Organisational

management should encourage open and responsive communications with employees as both a way for employees to express their views on a decision made that might impact their outcomes (e.g. getting a promotion) but also on issues that they might be facing at work or with their supervisors.

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Table 1. Mean and Standard deviations for all study variables

Study variable	<i>M</i>	<i>SD</i>
1.Organisational Justice		
1a.Procedural justice	2.74	0.85
1b.Distributive justice	2.71	1.06
1c.Interpersonal justice	3.98	0.80
1d.Informational justice	3.34	1.03
2.Supervisory control	2.30	0.85
3.Embitterment	2.44	0.96
4.Work-related rumination		
4a.Affective rumination	2.91	1.04
4b.Problem-solving pondering	3.04	0.86
4c.Detachment	3.03	0.91

Note. Study variables: 1 = organizational justice (OJP measure); 2 = supervisory control (SCOWP scale); 3 = embitterment (PTED scale); 4 = work-related rumination (WRRQ scale).

Table 2. Zero-order Correlations for all study variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Gender	-																	
2. Age	.042	-																
3. Dependent children	.050	-.198**	-															
4. Hours worked per week	-.218**	.028	-.033	-														
5. Years in current job	-.029	.698**	-.182**	.044	-													
6. Negative affect	.103*	-.110*	.017	.059	-.026	-												
7. Positive affect	-.031	.054	.024	.066	.002	-.318**	-											
8. Job demands	.054	.190**	-.133**	.210**	.147**	.011	.331**	-										
9. Social support	-.047	.023	.029	-.092	-.014	-.411**	.337**	.075	-									
10. Procedural justice	-.086	-.093	.034	-.059	-.147**	-.353**	.307**	.118*	.408**	-								
11. Distributive justice	-.065	.027	.071	-.098	-.055	-.275**	.163**	.085	.367**	.566**	-							
12. Interpersonal justice	-.077	-.037	-.070	.011	-.088	-.327**	.150**	.097	.362**	.496**	.353**	-						
13. Informational justice	-.088	.048	-.078	-.039	-.006	-.322**	.250**	.041	.427**	.554**	.423**	.598**	-					
14. Supervisory control	.047	-.195**	.103*	.022	-.218**	.271**	-.112*	-.108*	-.334**	-.219**	-.259**	-.404**	-.325**	-				
15. Embitterment	.112*	.060	-.083	.169**	.132**	.607**	-.359**	-.003	-.595**	-.492**	-.367**	-.425**	-.467**	.400**	-			
16. Affective rumination	.150**	.015	-.019	.263**	.043	.577**	-.337**	.092	-.490**	-.395**	-.286**	-.328**	-.447**	.343**	.669**	-		
17. Problem-solving pondering	.004	.080	-.070	.232**	.082	.247**	.156**	.347**	-.131**	-.016	-.106**	-.052	-.098	.122*	.223**	.363**	-	
18. Detachment	-.022	-.089	.171**	-.295**	-.141**	-.369**	.158**	-.223**	.363**	.173**	.231**	.153**	.232**	-.162**	-.423**	-.565**	-.465**	-

Note. Control variables: Gender (1 = male; 2 = female), age, dependent children, hours worked per week, years in current job, NA, PA, job demands, social support. Study variables: procedural justice, distributive justice, interpersonal justice, informational justice, supervisory control, embitterment, affective rumination, problem-solving pondering, detachment.

* $p < .05$, ** $p < .001$

Table 3. Results From Multiple Regression Analysis Predicting Embitterment

	Model 1		Model 2	
	β	t	β	t
1. Gender	.082	2.156*	.068	1.905
2. Hours worked per week	.130	3.416*	.126	3.508*
3. Years in current role	.134	3.649**	.157	4.294**
4. NA	.405	9.792**	.342	8.511**
5. PA	-.111	-2.764*	-.091	-2.376*
6. Social support	-.374	-8.973**	-.264	-6.196**
7. Procedural justice			-.118	-2.401*
8. Distributive justice			.018	.428
9. Informational justice			-.088	-1.839
10. Interpersonal justice			-.007	-.140
11. Supervisory control			.186	4.577**
Adjusted R^2		.549		.603
F		69.122**		47.423**
ΔR^2		.557		.059

Note. Control variables: 1 = Gender, 2 = hours worked per week, 3 = years in current role, 4 = NA, 5 = PA, 6 = social support. Study measures: 7 = Procedural justice, 8 = Distributive justice, 9 = Informational justice, 10 = Interpersonal justice, 11 = Supervisory control.

* $p < .05$. ** $p < .000$

Table 4. Results From Multiple Regression Analysis Predicting Affective Rumination

	Model 1		Model 2	
	β	t	β	t
1. Gender	.149	3.685**	.120	3.144*
2. Hours worked per week	.259	6.350**	.209	5.370**
3. NA	.401	9.043**	.255	5.421**
4. PA	-.138	-3.218**	-.097	-2.390*
5. Social support	-.248	-5.558**	-.110	-2.362*
6. Embitterment			.365	6.730**
Adjusted R^2		.482		.543
F		63.589**		67.632**
ΔR^2		.490		.062

Note. Control variables: 1= Gender, 2 = hours worked per week, 3 = NA, 4 = PA, 5 = social support. Study measures: 6 = Embitterment.

* $p < .05$. ** $p < .000$

Table 5. Results From Multiple Regression Analysis Predicting Problem-Solving Pondering

	Model 1		Model 2	
	β	t	β	t
1. Hours worked per week	.142	2.856*	.130	2.579*
2. NA	.252	4.614**	.206	3.349*
3. PA	.170	3.038*	.184	3.256*
4. Job demands	.265	5.032**	.261	4.953**
5. Social support	-.091	-1.660	-.048	-.785
6. Embitterment			.114	1.609
Adjusted R^2		.214		.218
F		19.315**		16.604**
ΔR^2		.226		.006

Note. Control variables: 1 = hours worked per week, 2 = NA, 3 = PA, 4 = Job demands, 5 = social support. Study measures: 6 = Embitterment.

* $p < .05$. ** $p < .000$

Table 6. Results From Multiple Regression Analysis Predicting Detachment

	Model 1		Model 2	
	β	t	β	t
1. Hours worked per week	-.218	-4.621**	-.203	-4.271**
2. Years worked in current role	-.104	-2.243*	-.086	-1.831
3. PA	.088	1.665	.073	1.358
4. NA	-.234	-4.521**	-.177	-3.019*
5. Job demands	-.206	-4.085**	-.204	-4.055**
6. Social support	.230	4.430**	.178	3.086**
7. Embitterment			-.138	-2.037*
Adjusted R^2		.296		.303
F		24.575**		21.859**
ΔR^2		.309		.009

Note. Control variables: 1 = hours worked per week, 2 = years worked in current role, 3 = PA, 4 = NA, 5 = Job demands, 6 = social support. Study measures: 7 = Embitterment.

* $p < .05$. ** $p < .000$

Table 7. Model coefficients for mediation analyses of affective rumination

		<i>M</i> (Embitterment)					<i>Y</i> (AR)			
		Coeff.	SE	<i>p</i>	R^2	<i>F</i>				
							Coeff.	SE	<i>p</i>	
<i>X</i> (PRO)	a_1	1.5067	0.1456	.000	.2422	107.09	c_1	0.0758	0.0404	.062
<i>X</i> (SUP)	a_2	1.0778	0.1347	.000	.1604	63.98	c_2	0.0683	0.0337	.044
<i>M</i> (EMB)		-	-	-	-	-	b_1	0.1781	0.0132	.044
<i>M</i> (EMB)		-	-	-	-	-	b_2	0.1801	0.0125	.000
Constant	i_1	11.9125	3.4357	.000	-	-	i	4.5784	0.8453	.000
$R^2 = .1563$										
$F(1,335) = 62.07, p = .000$										
Constant	i_2	24.4651	2.6440	.000	-	-	i	4.9569	0.6915	.000
$R^2 = .1176$										
$F(1,335) = 44.66, p = .000$										

Note. PRO = Procedural; SUP = Supervisory control; AR = Affective rumination; EMB = Embitterment