The role of BIS/BAS in effective coping with psychological contract breach

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Abstract

Psychological contract (PC) breach perceptions are formed when employees detect discrepancies between obligated and delivered inducements. PC breach stresses and strains employees to varying degrees and has detrimental consequences for employees and the organization. Employees activate various coping strategies to respond to the stress elicited by PC breach, and effective coping helps enhance employees’ well-being. In this study, we propose and test a moderated mediation model, where approach and avoidance coping strategies mediate the relationship between PC breach and stress, and employees’ goal-based personality (i.e., behavioral inhibition system—BIS and behavioral activation system—BAS) moderates the relationship between PC breach and coping strategies. We further examine the effectiveness of the subdimensions of coping, as well as how BIS/BAS influences the choice of these subdimensions in a sample of Western employees. Our results suggest approach coping effectively reduces stress elicited by PC breach, whereas avoidance coping increases stress. Moreover, employees with higher BAS are more likely to engage in approach coping, whereas those with higher BIS use avoidance coping. We advance the research on coping with PC breach by showing a more nuanced understanding of the subdimensions of coping as well as exploring diverse personality models in moderating the choice of coping strategies.

Keywords: psychological contract breach, coping, BAS/BIS, stress
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Introduction

The psychological contract (PC) is a cognitive schema that represents an individual’s perceptions of reciprocal obligations between the employee and the organization (Rousseau, Hansen, & Tomprou, 2018). Research shows that PCs offer a powerful lens to understand exchange relationships between employees and employers in various cultural contexts (Thomas et al., 2010). In particular, these studies show that PC breach perceptions are formed when employees detect discrepancies between obligated and delivered inducements (Lambert, Edwards, & Cable, 2003). Traditionally, PC breach is defined as delivered inducements falling short of obligated levels, whereas recent research shows that breach can be a positive discrepancy (i.e., over-fulfillment) and a negative discrepancy (i.e., under-fulfillment; Rousseau et al., 2018). PC breach is known to stress and strain employees to varying degrees, which has detrimental consequences for the employee (Achnak, Griep, & Vantilborgh, 2018), such as poor mental health and even burn-out (Maslach et al., 2001), eventually hindering the performance of the organization. As active sense makers of the PC, employees engage in various coping mechanisms to respond to stress caused by PC breach, and effective coping helps employees to make sense of their PC process and enhance well-being (Tomprou, Rousseau, & Hansen, 2015). However, we still lack the knowledge of the factors that affect how employees enact coping behavior as well as how coping actions result in desirable outcomes. Although the reciprocal nature of the PC implies that employees assess obligated and delivered inducements relative to their contributions to the organization (Morrison & Robinson, 1997), the literature shows that operationalization of breach without accounting for employee contributions still captures perceptions of breach from the employee’s perspective (Tomprou et al., 2015). Therefore, this
study draws from prior research on breach perceptions based on assessment of obligated and delivered inducements to investigate how employees cope with PC breach.

Prior research on coping shows that personality interacts with coping in shaping adjustment to stress and influencing well-being, and evidence suggests that extraversion positively relates to approach coping and general well-being, whereas neuroticism positively relates to avoidance coping and negatively to well-being (Carver & Connor-Smith, 2010). However, broad personality traits such as the Big Five account for less variance in adjustment than specific personality facets (Steel, Schmidt, & Shultz, 2008), and other personality models remain unexplored. Therefore, this study explored a personality model that directly relates to motivational behavior and thus has a closer link with coping—namely, BIS/BAS, or the fight-flight system. The behavioral activation system (BAS) is sensitive to signals of reward and causes an individual to move toward goals, whereas the behavioral inhibition system (BIS) inhibits behavior that may lead to negative outcomes and causes inhibition of movement toward goals (Gary, 1990). Unlike the traditional Big Five, the BIS/BAS personality model maps well onto the self-regulatory process of the PC, in the sense that the employee’s perceived success of coping affects choice of coping actions, resulting in either approaching or avoiding the stressor (Tomprou et al., 2015).

We propose and test a moderated mediation model, in which coping mediates the relationship between PC breach and stress, and BIS/BAS personality moderates the relationship between PC breach and coping. Our study offers two main contributions to the literature. First, we extend previous research on coping with PC breach and provide more insight on the holistic pathway from PC breach to well-being through various coping strategies. Second, we move away from the classic personality model and offer a new perspective of examining the
moderating role of BIS/BAS personality in coping with PC breach, offering a more precise explanation for how goal-directed personality leads to certain coping behaviors and encouraging more research to explore how diverse models of personality affect employees’ well-being in coping with PC breach.

**Coping with PC breach**

The PC is a cognitive schema that represents mutual obligations between an individual and the employer, and these obligations originate from various sources, both internal and external, and evolve over time (Rousseau et al., 2018). Employees use the PC to make sense of their daily work environment as well as monitor the progress toward attaining personal goals (Vantilborgh, 2019). While the specific obligations that are part of the PC are influenced by various contextual factors—e.g., the employee’s personality, the employment sector, or the cultural context (Du & Vantilborgh, 2020)—the reactions of employees to unfulfilled obligations appear to be predominantly negative (Jayaweera et al., 2021). In the dynamic phase model, Rousseau and colleagues (2018) theorized PC breach—both over-fulfillment and under-fulfillment—as disruptive events that relate to various negative attitudinal outcomes such as feelings of violation (Montes & Irving, 2008; Morrison, 2000) and stress (Achnak et al., 2018). Feelings of violation describe “feelings of betrayal and deeper psychological distress, whereby the victim experiences anger, resentment, a sense of injustice and wrongful harm” (Rousseau, 1989, p. 129). In other words, feelings of violation constitute a primary emotional response to a specific workplace stressor (i.e., perceptions of breach) that is characterized by negative valence and high arousal emotions (Lazarus, 1966). In contrast, perceived stress refers to the strain that is experienced when exposed to a stressor and is characterized by physiological (e.g., increases in blood pressure and heart rate), psychological (e.g., tension, anxiety, depression, and
psychological fatigue), and behavioral (e.g., absenteeism and turnover) indicators (Achnak et al., 2018). Stress occurs in situations involving loss, potential loss, or failure to gain resources, such as time, money, and relationships (Kiazad, Seibert, & Kraimer, 2014). Although stress and feelings of violation are both instances of the negative outcomes of PC breach and both are related due to their affective component, perceived stress captures a broader negative response to a stressor which includes both primary/secondary appraisals and reappraisals of the stressor and triggers a set of responses that extends beyond mere affective reactions (Achnak et al., 2018; Lazarus, 1966). PC breach—a domain specific stressor—elicits stress as it represents a loss or potential loss of valued resources (Achnak et al., 2018). For example, PC breach is an important predictor of employees’ stress and strain in the public sector (Noblet & Rodwell, 2009). As active participants of the PC, employees take coping actions to resolve the stress of breach and adjust course according to the progress towards goal attainment (Tomprou et al., 2015). Evidence suggests that approach coping is adaptive and enhances well-being, whereas avoidance coping may be maladaptive and deplete coping resources (Skinner et al., 2003).

The core of coping is to prevent or diminish threat, harm and loss, or to reduce associated distress (Tomprou et al., 2015). However, the concept of coping is very broad, and various distinctions have been made within this broad domain (Skinner et al., 2003). Skinner and colleagues (2003) emphasized that the key is whether the individual moves towards or away from the stressor, and the type of stressor and developmental level play important roles in determining what coping actions are taken. A particularly important distinction is between approach or engagement coping and avoidance or disengagement coping—namely, approach coping involves problem-focused coping and some forms of emotion-focused coping such as support seeking and emotion regulation, whereas avoidance coping includes primarily
disengagement and denial (Carver & Connor-Smith, 2010). In coping with the stress associated with PC breach, coping actions represent an employee’s attempts to resolve the breach and are distinguished by the degree to which they approach or avoid the breach event (Tomprou et al., 2015). Some employees seek closer contact with the stressful situation or related emotions (i.e., approach coping), whereas others withdraw from the stressor and related emotions (i.e., avoidance coping; Roth & Cohen, 1986).

Previous research showed that approach coping effectively reduces work-related distress and stress (Baker & Williams, 2001), whereas by engaging in avoidance coping, employees may temporarily escape the distress caused by PC breach and the associated negative feelings. However, avoidance coping tends to be ineffective in reducing stress in the long term because it does not eliminate the stressor and its impact (Carver & Connor-Smith, 2010). To the contrary, it might even have an opposite effect on the stress employees experience. In specific, the longer an employee avoids dealing with the breach, the more possibility for rumination about the stressful events, which in turn increases negative emotions and anxiety (Najmi & Wegner, 2008). Moreover, while avoiding confrontation with the breach, employees continue with their daily work, resulting in less available time to deal with the breach. In the post-violation model, Tomprou and colleagues (2015) proposed that approach coping—specifically, problem-focused (such as active coping and planning) and some forms of emotion-focused coping (such as venting, using emotional support) have a positive effect on breach resolution and eventually well-being, whereas avoidance coping (such as mental and behavioral disengagement) allows individuals to avoid the stressor and eventually increases stress. Prior empirical evidence has mainly differentiated the effects of approach coping and avoidance coping as two broad categories, overlooking the differences among the subdimensions. However, putting sub-
dimensions of coping actions under the umbrella of approach and avoidance coping can obfuscate the distinctions among the multiple sub-dimensions (Skinner et al., 2003). Therefore, in this study, on the one hand, we examine the effectiveness of approach and avoidance coping, and on the other hand, we depart from the proposition in the post-violation model (Tomprou et al., 2015) and examine the effectiveness of the subdimensions in coping with PC breach. In specific, we propose that breach triggers coping behaviors (approach coping: active coping, planning, venting, and using emotion support; avoidance coping: self-distraction and behavioral disengagement). In turn, this choice of coping behavior will determine whether employees are successful or not in dealing with the stress elicited by the PC breach. In line with the post-violation model, we suggest that they will be more likely to reduce stress when they engage in approach coping and less likely when they engage in avoidance coping (Tomprou et al., 2015). We will examine these effects both at a general level (Hypothesis 1: approach vs. avoidance coping) and at a specific level (Hypothesis 2: active coping, planning, venting, and using emotion support vs. self-distraction and behavioral disengagement). At this point, it is important to point out that we will focus on testing these hypotheses in a Western context. However, employees in different cultural contexts may react differently to negative events, such as PC breach, in terms of emotions and stress, and they may rely on different coping strategies (De Vaus et al., 2018; Du & Vantilborgh, 2021). We will discuss the implications of our study’s cultural context in the discussion section.

**H1a:** Employees experience less stress following PC breach by engaging in approach coping.

**H1b:** Employees experience more stress following PC breach by engaging in avoidance coping.

**H2a:** Employees experience less stress following PC breach by engaging in active coping, planning, venting, and using emotional support.
**H2b: Employees experience more stress following PC breach by engaging in self-distraction and behavioral disengagement.**

**BIS/BAS in coping with PC breach**

Prior research that focused on the relationship between Big Five personality traits and coping offers mixed results, warranting further research on specific coping actions rather than broad coping types and diverse personality models rather than the traditional personality models (Carver & Connor-Smith, 2010). Analyses of specific coping actions show that a trait can correlate positively with one sub-dimension of approach coping and negatively with another, because each broad trait consists of multiple facets, which provides a more nuanced relationship between personality and coping (Carver & Connor-Smith, 2010). The distinction between approach and avoidance coping maps well onto the goal-based model of personality (Carver & Connor-Smith, 2010). In goal-based personality, individuals aim at moving towards goals and away from threats, as well as engage or disengage their behavior according to the change of their goals. Goal-based personality also incorporates an expectancy construct—a sense of confidence or doubt that a given outcome will be successfully obtained (Carver et al., 1989). Goals operating at a given time influence the recall of events and attention to past events (Lord et al., 2010). As a result, personal goals may impact employees’ perceptions and recall of obligated as well as delivered inducements when assessing their PC status (Rousseau et al., 2018). Moreover, the likelihood of breach resolution will be accounted by employees’ goal-based personality to influence the enactment of coping, which aligns with the proposition of the post-violation model (Tomprou et al., 2015).

Two psychological self-regulatory systems in personality explain the individual differences in the sensitivity of responding to environmental cues—namely, the BIS/BAS
systems. The behavioral inhibition system regulates aversive motivation, whereas the activation system regulates appetitive motivation (Carver & White, 1994). In specific, the BIS is sensitive to punishment and non-reward and it inhibits behavior that may lead to negative outcomes, thus causing inhibition of moving towards goals and increases experience of negative feelings such as frustration and stress, whereas the BAS is sensitive to signals of reward and non-punishment and increases progress towards goal attainment by engaging in goal-directed efforts, resulting in experience of positive feelings such as hope and happiness (Carver & White, 1994). BIS/BAS represent distinct structures in the nervous system, so within a population, there should be people with all combinations of high and low BIS/BAS sensitivity. For example, people with higher BIS sensitivity would be more prone to anxiety and stress under proper circumstances, whereas those with higher BAS would be more prone to engage in goal-directed efforts and experience positive feelings (Carver & White, 1994).

Goal driven behavior echoes with the self-regulatory nature of the PC, in which employees monitor goal progress through discrepancy feedback processes (Rousseau et al., 2018). A sufficiently large discrepancy between obligated and delivered inducements may exceed the coping resources one possesses and thus be perceived as a stressor or threat (Ho & Yeung, 2016). Employees with high BIS may perceive the breach as an impending punishment and inhibit moving towards dealing with the stressor, resulting in delay of breach resolution and increased experience of anxiety and stress (Carver & White, 1994). The high BIS inhibits individuals from moving towards their goals, for example, by distracting oneself from the situation or disengaging behaviorally. In contrast, employees with high BAS are likely to hold hopeful feelings towards the future and thus view the PC breach as a temporary setback in the pursuit of their goals, which can be dealt with if they engage (Carver & White, 1994). As a
result, successful breach resolution may be perceived as potentially rewarding and encourage individuals to directly deal with the situation, for example, by actively trying to make the situation better, planning the steps to take, expressing negative feelings and seeking emotional support (Carver, 1997). Therefore, we assume that employees with high BIS are more likely to engage in avoidance coping, whereas those with high BAS are more likely to engage in approach coping. Moreover, we explore how BIS and BAS relate to the subdimensions of coping. In specific, we propose the following hypotheses:

\[ H3a: \text{Employees engage in approach coping to deal with PC breach when they are characterized by high BAS.} \]

\[ H3b: \text{Employees engage in avoidance coping to deal with PC breach when they are characterized by high BIS.} \]

\[ H4a: \text{BAS moderates the relationship between breach and active coping, planning, venting, as well as emotional support, such that the relationship is stronger when individuals are characterized by high BAS.} \]

\[ H4b: \text{BIS moderates the relationship between breach and self-distraction and behavioral disengagement, such that the relationship is stronger when they are characterized by high BIS.} \]

\section*{Methods}

\section*{Procedure}

We collected monthly data at two measurement points among employees from various Belgian organizations (private and public sectors). Participants received a link to the survey at 11AM on the last Friday of the month and had until 11PM on Sunday of the same week to
complete the surveys. Daily reminders were sent to the participants who did not complete the surveys in the following three days. Only participants who had actually worked in the past month were required to fill out the surveys. All the other participants were directed to the end of the survey. All the surveys were administered in both English and Dutch, with the measures having been validated in prior research.

**Sample**

In total, we recruited 245 employees to complete the survey at the first measurement moment (T1), and we excluded two participants that did not work that month and 12 participants that did not complete the first survey (completion rate 94%). At T2, 180 participants completed the second survey (22% dropout rate). We performed a drop-out analysis to test whether demographic variables, BIS/BAS, PCB perceptions and stress at T1 related to drop-out at T2. The results suggest that none of the variables significantly predicted whether the participants completed both surveys. At T1, the respondents were on average 35.83 years old (SD = 9.66), 74% were female, 88% had a higher education degree, and had an average tenure at the current organization of 7 years (SD = 7.41). Out of the 162 participants that provided information regarding whether they worked full-time or part-time, 79% were working full-time at the time of participation.

**Measures**

**Demographic information.** We collected demographic information including respondents’ age (in years), gender (female, male or other), education (highest level of school education), company tenure (in years), as well as employment status (full-time or part-time). These questions were only asked at the first measurement moment.
**PC breach perceptions.** The perceptions of PC breach were measured at T1 and T2 with a direct comparison approach (Achnak et al., 2018). Respondents were presented with 13 commonly studied employer inducements (Achnak et al., 2018) and instructed to indicate on a 5-point Likert scale to what extent they actually received each one of the inducements compared to what they believed the employer was obligated to deliver (1 = Received much less than the obligation to 5 = Received much more than the obligation). This operationalization allowed us to measure both under- and over-fulfillment. To assist interpretation, we reversed coded the scores of PC breach so that high scores on this variable reflect under-fulfilment. The reliability estimates ($\alpha_{T1} = .82$, $\alpha_{T2} = .83$) were good for both measurement moments.

**BIS/BAS.** The measure for BIS/BAS was developed by Carver and White (2013). The Dutch version was developed and validated by Franken and colleagues (2005). An example item of the scale is “I go out of my way to get things I want”. The respondents were requested at T1 and T2 to indicate on a 7-point Likert scale to what extent they agreed with each statement (1 = Very false for me to 7 = Very true for me). The reliability estimates were good for both BIS ($\alpha_{T1} = .84$, $\alpha_{T2} = .85$) and BAS ($\alpha_{T1} = .76$, $\alpha_{T2} = .88$) at both measurement moments.

**Coping.** Coping strategies were measured with the items from the Brief COPE (Carver, 1997). In particular, we included two items for self-distraction (e.g. “I have been turning to work or other activities to take my mind off things.”), emotional support (e.g. “I’ve been getting emotional support from others.”), behavioral disengagement (e.g. “I’ve been giving up trying to deal with it.”), active coping (e.g. “I’ve been taking action to try to make the situation better.”), venting (e.g. “I’ve been expressing my negative feelings.”), as well as planning (e.g. “I’ve been thinking hard about what steps to take.”). In the analyses uncovering the effects of approach and avoidance coping, we grouped active coping, venting, planning as well as emotional support in
the category of approach coping, and self-distraction as well as behavioral disengagement in the category of avoidance coping (Carver & Connor-Smith, 2010). In the analyses for the subdimensions of coping, the six subdimensions are analyzed independently. We performed a multilevel confirmatory factor analysis (CFA) clustered by individuals to test the structure of the measures and the fit indices are relatively acceptable based on the number of items used for each coping action \((CFI = .92; TLI = .85; RMSEA = .09; SRMR = .04; Hooper et al., 2008)\). The respondents were instructed to indicate on a 4-point Likert scale to what extent they had been doing each of the coping actions \((1 = I \text{ haven’t been doing this at all to } 4 = I \text{ have been doing this a lot})\). The reliability estimates for approach coping \((\alpha_{T1} = .88, \alpha_{T2} = .75)\) are generally acceptable and less desirable for avoidance coping \((\alpha_{T1} = .58, \alpha_{T2} = .53)\), which could be due to the limited number of items (i.e., four items) for avoidance coping. Each subdimension of coping included two items, therefore we report the correlation between these two items at both T1 and T2 (see Table 1). Although the correlations for venting at T2, self-distraction at both measurement moments, self-distraction at T1 are lower than .50, all items for each subdimension are significantly and positively correlated. Given the small number of items in the scale, we assume that the measures are usable for further analyses.

**Stress.** Stress was measured with the 15-item Stress-in-General Scale (SIG) by Stanton and colleagues (2001) at T1 and T2. The Dutch version was adopted from the work of Achnak and colleagues (2018). An example item of the scale is “This month my job was demanding”. Respondents were instructed to indicate the extent to which their experience in the past month was described by the presented adjectives on a 5-point Likert scale \((1 = \text{Strongly disagree to } 5 = \text{Strongly agree})\). Among the 15 items, five items were positively worded (“calm”, “relaxed”, “under control”, “comfortable”, and “smooth running”), whereas the other 10 items were
negatively worded. The ratings for the positively worded words were reverse coded for the analyses. The reliability estimates ($\alpha_{T1} = .92$, $\alpha_{T2} = .96$) were good for both measurement moments.

Analysis

**Multilevel moderated mediation analysis.** We propose and test a moderated mediation model, where coping strategies (M) mediate the relationship between PC breach perceptions (X) and stress (Y), and BIS/BAS (W) moderate the relationship between PC breach perceptions and coping strategies. Previous research shows that not only under-fulfillment leads to negative emotions and work behavior (Zhao et al., 2007), over-fulfillment of certain inducements also leads to negative emotions such as stress (Achnak et al., 2018; Lambert et al., 2003; Montes & Irving, 2008). Therefore, we also test the curvilinear effects of PC breach to capture the relationship between both under- and over-fulfillment with stress (i.e., a significant U-shaped curvilinear effect would signal that both over- and under-fulfilment elicit stress). Moreover, we opt for a Bayesian approach with non-informative priors for its advantage of not relying on large sample approximations (Bidee et al., 2017). With this approach, we do not report $p$-values, and instead, we report credibility intervals, which can be used to assess the uncertainty about a given effect. If this interval includes zero, the probability that the effect is actually zero is small. We use non-informative priors because no reliable prior information concerning the current hypotheses or parameters exists, and the inference is only based on the data (Bidee et al., 2017).

Results

**Descriptive statistics**
Table 2 shows the means and standard deviations of PC breach, stress, BAS, BIS approach coping, avoidance coping, as well as their correlations at both within-person and between-person level. The results show that at the within-person level, perceptions of PC breach and stress have a negative but nonsignificant relationship ($r = -.06, p = .22$), suggesting that at the within-person level the stress employees experience are not directly influenced by their perceptions of PC breach. Moreover, there appears to be no significant relationship between BAS and approach coping ($r = -.05, p = .31$) or between BIS and avoidance coping ($r = -.01, p = .84$). Interestingly, at the within-person level, approach coping positively relates to stress ($r = .19, p < .0001$), whereas avoidance coping negatively relates to stress ($r = -.14, p = .00$). We further examine the moderating role of BIS/BAS in this relationship in the hypothesis testing section.

INSERT TABLE 2 ABOUT HERE.

Table 3 presents the relationships between the subdimensions of coping and the key variables at both the within-person and between-person level. The results suggest that at the within-person level, BAS ($r = -.24, p = .00$) relates negatively to stress, whereas BIS ($r = .30, p < .0001$) relates positively to stress. Moreover, BAS positively relates to actively coping ($r = .24, p = .00$), planning ($r = .20, p = .00$), self-distraction ($r = .30, p < .0001$) and negatively to seeking emotional support ($r = -.20, p = .00$), suggesting that BAS personality may affect emotional support differently than other subdimensions of approach coping. On the other hand, BIS relates negatively to planning ($r = -.21, p = .002$) and positively to self-distraction ($r = .34, p < .0001$).

INSERT TABLE 3 ABOUT HERE.

**Hypothesis testing**
First, before we tested the mediation effect of coping in the relationship between PC breach perceptions and experienced stress, we compared a full mediation with a partial mediation model, and the model fit indices suggest that the full mediation model provided a better fit for the data (DIC = 12211.50) compared to the partial mediation model (DIC = 18427.55). Therefore, we selected the full mediation model for further analyses. H1a and H1b aim to examine the mediating effect of approach and avoidance coping in the relation between PC breach and stress. We first compared the model that includes the squared term of PC breach with the one that only includes the main effect of PC breach, and the results suggest that the main-effect model (DIC = 4365.13) fits the data better than the more complex curvilinear model (DIC = 5302.11). Therefore, we chose the simpler model and report these results (see Figure 1). The direct effects suggest that stress is significantly related with PC breach (β = .23, 95% credibility interval [-.07, .41]), suggesting that as employees experience less over-fulfillment and more under-fulfillment their experience of stress increases. Counterintuitively, the direct relationships show that approach coping relates positively to stress (β = .31, 95% credibility interval [.14, .45]), whereas avoidance coping shows no significant relationship with stress (β = -.07, 95% credibility interval [-.18, -.07]). In addition, the indirect effects (i.e., mediation effects) of PC breach on stress via coping also show no significant mediation effect of approach coping (β = .01, 95% credibility interval [-.04, .06]) or avoidance coping (β = -.01, 95% credibility interval [-.05, .01]). Therefore, H1a and H1b are not supported.

Moreover, we followed the advice of Bliese and Wang (2019) and performed a post-hoc power analysis to calculated the cumulative probability of significant effects, which shows the probability of finding significant effects based on the characteristics of the sample and model. The results suggest that the cumulative probability of significant effects for approach coping,
avoidance coping, and PC breach on stress are .97, .19 and .77 respectively, and the cumulative probability of significant effects for the effects of PC breach on approach coping and avoidance coping are .05 and .46 respectively. In other words, we have a power of 97% to find a significant effect of approach coping on stress and a power of 77% to find a significant effect of PC breach on stress, given our sample property and model. The other probability indices suggest little power of finding a significant effect, supporting the results of the model.

We further examined the relationships between PC breach and the subdimensions of coping, the relationships between stress and the subdimensions of coping, as well as the mediation effects of the subdimensions of coping. We first compared the model including the squared term of PC breach and the one without, and the model fit indices suggest that the model with only main effects (DIC = 7789.95) fits the data better than the more complex model (DIC = 9566.98). Therefore, we chose the simpler model and report these results (see Figure 2).

The direct effects suggest that venting shows a significant positive relationship with stress ($\beta = .14$, 95% credibility interval [.03, .26]), whereas behavioral disengagement shows a significant negative relationship with stress ($\beta = -.09$, 95% credibility interval [-.18, -.00]). Moreover, the direct effects of PC breach on all six subdimensions of coping appear to be significantly positive, suggesting that as employees experience less over-fulfillment and more under-fulfillment, they engage in more coping in general. In terms of the mediating effects of these subdimensions in the relationship between PC breach and stress, participants experience more stress when engaging in venting ($\beta = .09$, 95% credibility interval [.02, .17]), whereas they experience less stress when engaging in behavioral disengagement ($\beta = -.03$, 95% credibility interval [-.08, -.00]), not supporting H2a or H2b. The other subdimensions of coping show no
significant mediating effect. Moreover, the results of the post-hoc power analysis show that the power of finding a significant effect of the following variables on stress are: active coping (.12), venting (.72), planning (.40), self-distraction (.14), emotional support (.04), behavioral disengagement (.52), and PC breach (.30). In addition, the cumulative probabilities of finding a significant effect of PC breach on all six subdimensions of coping are 1.00 except for behavioral disengagement (.99).

**INSERT FIGURE 2 ABOUT HERE.**

H3a and H3b aimed to test the moderation effects of BAS and BIS in the relationship between PC breach perceptions and coping strategies. Similarly, we first compared the model with the squared term of PC breach and the model that only includes main effects, and the model fit indices suggest that the simple model (DIC = 4168.36) fits the data better than the more complex model (DIC = 6000.70). As a result, we chose the main-effect model and report these results (see Figure 3).

The direct effects show that approach coping relates positively to stress ($\beta = .32$, 95% credibility interval [.13, .52]), whereas avoidance coping does not significantly relate to stress ($\beta = -.02$, 95% credibility interval [-.16, .11]). Our results (see Figure 3) show that BIS intensifies the relationship between PC breach and avoidance coping ($\beta_{BISXPCB} = .04$, 95% credibility interval [.02, .05]), whereas BAS does not significantly moderate the relationship between PC breach and approach coping ($\beta_{BASXPCB} = .01$, 95% credibility interval [-.01, .03]), whereas. In other words, employees are more likely to engage in avoidance coping when they report higher BIS, whereas the engagement in approach coping is not affected by BAS. Therefore, H3a is not supported, and H3b is supported. The results of the post-hoc power analysis suggest that the cumulative probabilities of the effect of approach coping, avoidance coping and PC breach on
stress given are .93, .05 and .52 respectively. In other words, given the sample and the model, we have a power of 93% to find a significant effect of approach coping on stress. The cumulative probabilities of the effect of the following variables on approach coping are: PC breach (.20), BAS (.02), interaction between BAS and PC breach (.27), and BIS (.03). The cumulative probabilities of the effect of the following variables on avoidance coping are: PC breach (.26), BIS (.11), interaction between BIS and PC breach (1.00), and BAS (.17).

Moreover, we examined how the interaction between PC breach and BAS as well as BIS relates to the subdimensions of coping. Again, we compared the model with only main effects of PC breach with the model that also includes the curvilinear effect of PC breach, and the more complex model encountered convergence issues. Therefore, we chose the main-effect model. The direct effects show that PC breach positively relates to stress ($\beta = .24$, 95% credibility interval [.04, .43]), suggesting that employees experience more stress as they experience less over-fulfillment and more under-fulfillment. In addition, venting positively relates to stress ($\beta = .15$, 95% credibility interval [.04, .26]). The interaction effects show that employees are less likely to engage in active coping ($\beta = -.06$, 95% credibility interval [-.08, -.03]) and more likely in behavioral disengagement ($\beta = .08$, 95% credibility interval [.04, .11]) when they score high in BIS. Therefore, H4a is not supported, and H4b is partially supported. The results of the post-hoc power analysis show that the cumulative probabilities of the effect of the following variables on stress are: active coping(.03), venting (.76), planning (.29), self-distraction (.19), emotional support (.17), behavioral disengagement (.44), and PC breach (.68). The cumulative probabilities of the effect of PC breach, BAS, BIS, and the interaction terms of BAS and PC breach as well as BIS and PC breach are shown in Table 4.

INSERT FIGURE 3 ABOUT HERE.
Discussion

In this study, we proposed and tested a moderated mediation model, where approach and avoidance coping mediate the relationship between PC breach and stress, and BIS/BAS personalities moderate the relationships between PC breach and coping strategies. We followed the call of Carver and Connor-Smith (2010) and investigated how BAS and BIS personality characteristics influence employees’ coping strategies. We found that by using a monthly interval, engagement of approach coping positively relates to increased stress at the within-person level. In addition, employees tend to engage in more avoidance coping when they were characterized by higher BIS and higher BAS does not relate to more approach coping. Furthermore, we also explored how the subdimensions of coping affects stress employees experience following PC breach as well as how BIS/BAS affects the subdimensions of coping when employees deal with PC breach.

Theoretical implications

First, aligned with prior research, our results suggest that the stress level increases as employees experience stronger under-fulfillment. However, contrary to our prediction, we found that approach coping positively relates to stress associated with PC breach, whereas avoidance coping does not relate to the level of stress (Carver & Connor-Smith, 2010). Roth and Cohen (1986) argued that the timing of measurements—namely, short-term or long-term outcomes—may reveal different effectiveness of coping. Prior research found that avoidance coping is effective when measured immediately after the stressful experience, whereas approach coping is more effective when long-term outcomes are measured (Mullen & Suls, 1982). In our study, we measured monthly perceptions of PC breach and stress as a relatively long-term outcome of breach. Unlike chronic pain or health-stressor, PC breach is a domain-specific stressor that
causes stress in employees and requires clear and specific responses (Carver & Connor-Smith, 2010). Our results suggest that by confronting the stressor and dealing with it actively, employees experience increased stress. Folkman and Moskowitz (2004) suggested that the coping process can be stressful itself, especially when there is a successful resolution will positive emotions predominate. Moreover, coping with stress is a dynamic process (Roth & Cohen, 1986). Approach and avoidance coping are not mutually exclusive, but both have benefits and costs. For instance, avoidance may increase stress in the long run, but it allows for a gradual recognition of the breach event. Approach coping, on the other hand, takes charge of the situation and orients individuals towards the breach event, but it may lead to increased immediate distress (Roth & Cohen, 1986). Our results suggest that employees use approach and avoidance coping simultaneously ($r = .31$, $p < .001$) to deal with PC breach. It is possible that these two strategies operate intermittently, in a way that approach coping puts individuals in the front line dealing with the stressor and avoidance coping helps to reduce immediate stress.

Second, closer examination of the subdimensions of both approach and avoidance coping reveals the underlying mechanism of effectively dealing with stress induced by PC breach. Although incorporated within approach coping, venting of emotions is more emotion-focused and considered to offer mixed outcomes (Carver & Connor-Smith, 2010). Contrary to the theoretical model of Tomprou and colleagues (2015), our results suggest that venting increases the stress induced by PC breach, whereas behavioral disengagement significantly decreases stress induced by PC breach. It is possible that by expressing negative emotions, individuals recall the stressful event and thus experience elevated level of stress. Carver and colleagues (2010) pointed out that behavioral disengagement refers to reducing one’s effort to deal with the stressor and even giving up the attempt to attain one’s goals. Although disengaging from a goal
can impede adaptive coping, it can also be adaptive (Klinger, 1975). For example, by temporarily distancing from the stressor, individuals may have more time to make sense of the breach event and assess their relationship with the organization.

Third, our findings support the moderating role of BIS in coping with PC breach, expanding our understanding of how personality models affect the effectiveness of coping. Carver and Connor-Smith (2010) discussed in a meta-analysis that specific personality traits may show positive relationships with one subdimension of coping and negatively with another, and assessing specific coping response provides a more nuanced understanding of coping than assessment of broad coping. In addition, the Big Five personality model provides mixed findings regarding the relationship between personality and coping, warranting research using other models of personality (Carver & Connor-Smith, 2010). For example, Connor-Smith and Flachsbart (2007) found in a meta-analysis that neuroticism predicted seeking emotional support, whereas Bishop and colleagues (2001) found the opposite effects in a study on how Big Five personality traits affect various approach and avoidance coping actions in an Asian context. We adopted the BIS/BAS personality model and showed that in the European context individuals are more likely to engage in avoidance coping when they are characterized with higher BIS. Moreover, we examined the subdimensions of coping and found that employees tend to engage in less active coping and more self-distraction when they are characterized by higher BIS. This finding underpins the importance of distinguishing specific coping responses as well as warrants further research using diverse models of personality.

Finally, it is important to consider how contextual factors may influence our model and findings. First, how employees perceive PCs and react to breaches is shaped by various factors, such as cultural differences (Thomas et al., 2010). For example, the sensemaking process can be
quite different for employees from various cultural backgrounds, with employees from Western cultural backgrounds more likely to attribute breaches to intentional acts of the employer (Du & Vantilborgh, 2021). Indeed, a recent meta-analysis suggests that while PC breach perceptions generally have negative consequences, the strength of the relationship is attenuated by certain cultural dimensions such as collectivism. Second, coping behaviors tend to be shaped by cultural factors as well. For example, employees in collectivistic cultures may be less likely to engage in approach oriented coping behaviors than employees in individualistic cultures (Thomas et al., 2010). Hence, it is important to recognize that our findings may only apply to Western cultural contexts.

**Practical implications**

This study offers three main practical implications, mainly towards the management of employees in a Western context. First, employers need to understand that employees engage in various coping strategies and actions to deal with stressful events at the workplace, such as PC under-fulfillment. Although approach coping may lead to better adaptive outcomes in the long term, employees experience temporarily increased stress when engaging in approach coping. Moreover, not everyone has a preference to engage in the same type of coping. As a result, some employees can cope with breach more effectively and experience less stress than others. Employers may choose to accommodate individual coping preferences or provide relevant training opportunities for employees with different preferences to learn how to deal with stress more actively. The fit between coping style and certain demands of the situation influences the effectiveness of coping (Roth & Cohen, 1986). For example, Cohen and Roth (1986) found that when patients’ coping strategies are consistent with the counseling strategies of the clinic, they experience less anxiety. Second, a better understanding of what factors affect employees’ choice
of coping will help the employer to provide training to the need of the employee. Our findings suggest that employees’ inhibition personality tendencies predict which type of coping responses they will have. These personality characteristics closely relate to employees’ motivation and goal attainment. Employees with higher BIS activation tend to be more inhibited from moving towards their goals (Carver & White, 1994). For example, our results suggest that employees are likely to engage in behavioral disengagement when they experience higher BIS. This is especially helpful for employees to make sense of their coping styles and undesirable coping outcomes. Third, Folkman Moskowitz (2004) found that the effectiveness of coping depends on the controllability of the situation. Prior PC research on social accounts shows that if employees perceive that their employer cares enough to explain the reasons behind their decisions, they will be more likely to perceive PC fulfillment and thus experience less negative emotions (Lester et al., 2007). In the context of coping with PC breach, employers can help employees enhance their sense of control by offering explanations for the breach events and thus improve the effectiveness of coping actions.

Limitations

Despite the theoretical and practical contributions of this study, a few limitations should be considered. First, the generalizability of our findings may be limited to a specific population. For one, our sample comes from diverse employment backgrounds, which offers heterogeneity and representation of the broader working population. However, it does not account for the potential relationship between job nature and work-related behavior (Ho & Yeung, 2016). In addition, the current study is conducted in a European context, and the influence of cultural backgrounds on stress experienced at work and perceptions of PC breach is not accounted for (Györkös et al., 2012). Second, the reciprocal nature of the PC breach implies that obligated and
delivered inducements are evaluated in relevance to employees’ contributions; however, we did not measure employee contributions in this study. Third, we adopted a within-person approach to investigate how BAS/BIS personality influences the relationship between PC breach and stress, and we collected data at two measurement moments with a one-month interval. Given the ongoing debate on the time frame of longitudinal studies, the monthly interval might not be sufficient to reflect the dynamic characteristics of the PC and stress (Achnak et al., 2018), and two measurement moments might not provide enough opportunities to capture how the changes in PC breach perceptions relate to experienced stress. Moreover, the strength of the relationships may vary as the length of the time-interval changes (Yang et al., 2020). Psychological contract research needs to examine which time-intervals are optimal, so that study designs can take this into account. Fourth, we proposed a moderated mediation model where the moderators are only present in the $a$ path—namely, between the independent variable and the mediator. Prior research on the interplay of personality and coping in predicting adjustment shows that personality may influence how effective a given strategy works for an individual (Carver & Connor-Smith, 2010). In this study, the BAS/BIS personality might also moderate the relationship between coping and stress. Due to the complexity this would add to the model, we did not include it.

**Recommendations for future research**

The proposed model and findings of this study not only enrich the literature on the underlying mechanism of coping with stress elicited by PC breach, but it also provides new avenues for future empirical research on coping with PC breach. First, we answered the call of Carver and Connor-Smith (2010) to explore other personality models than the Big Five, and our findings on the moderating role of BIS/BAS personality warrants future research to further
explore how diverse personality models affect coping in the work context. Moreover, we also encourage future research to empirically investigate the moderating role of personality in the relationship between a certain coping strategy and its outcomes. Second, career goals might interact with stressors in predicting coping responses and with specific coping styles in predicting the effectiveness of coping. For example, a PC under-fulfillment can be perceived as a threat in obtaining one’s career goals, and those with long-term career goals may actively cope with stressful events, so that they can clear possible obstacles in their career path. Therefore, we recommend future research to explore the role of career goals in the context of coping with PC breach. Third, we call on future research to better capture the reciprocity in the PC process and take into account how employees’ contributions might influence breach formations. Fourth, although cross-cultural studies show similarities in terms of job stress (Györkös et al., 2012), we encourage future research to investigate how culture independently and interactively with personality affects coping with stressful work events such as PC breach. Most research on PCs to date relies on Western samples (Du & Vantilborgh, 2020). Yet, culture is likely an important factor that shapes how employees perceive their PC and make sense of disruptions in their PC. We therefore strongly encourage scholars to explore how employees from various cultural backgrounds react to PC disruptions, how their stress reactions unfold over time, and how they cope with such negative workplace events.

Conclusions

In this study, we proposed and empirically tested a moderated mediation model where approach and avoidance coping mediate the relationship between PC breach and stress, and BIS/BAS moderates the relationship between PC breach and the choice of coping strategies. We adopted a within-person approach and collected survey data from employees across various
backgrounds with two monthly surveys. We explored the effectiveness of the subdimensions of coping as well as how these subdimensions of coping are influenced by BIS/BAS. Our results suggest that approach coping increases stress elicited by PC breach, whereas avoidance coping does not significantly change level of experienced stress. Moreover, employees engage in more avoidance coping when they are characterized by higher BIS.

Ethical compliance Section

The authors have no funding to disclose.

The authors confirm that all procedures performed in this study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

The authors declare they have no conflict of interest.

Informed consent was obtained from all individual participants included in the study.
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https://doi.org/10.1093/jopart/mun019


https://doi.org/10.1002/job.2284


Figure 1. Path estimates for the mediation model (H1a and H1b). Standard errors and standardized estimates are indicated between parentheses, and the variance explained by each variable ($R^2$) is indicated between parentheses together with individual variables, with an asterisk indicating significance. Solid lines indicate significant relationships, whereas dotted lines indicate nonsignificant relationships.

Figure 2. Path estimates for the mediation effects of the subdimensions of coping. Standard errors and standardized estimates are indicated between parentheses, and the variance explained by each variable ($R^2$) is indicated between parentheses together with individual variables, with an asterisk indicating for significance. Solid lines indicate significant relationships, whereas dotted
lines indicate non-significant relationships. The correlations between coping actions are accounted for but not visualized in the figure.

Figure 3. Path estimates of the moderated mediation model where BAS moderates the relationship between PC breach and approach coping, whereas BIS moderates the relationship between PC breach and avoidance coping. Standard errors and standardized estimates are indicated between parentheses, and the variance explained by each variable (R²) is indicated between parentheses together with individual variables, with an asterisk indicating for significance. Solid lines indicate significant relationships, whereas dotted lines indicate non-significant relationships.
Table 1. Reliability measures for subdimensions of coping at two measurement moments

<table>
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<th>Coping actions</th>
<th>Correlation</th>
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<th>T2</th>
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</thead>
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<td>.58**</td>
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<tr>
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<td>Planning</td>
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<tr>
<td>Self-distraction</td>
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<tr>
<td>Behavioral disengagement</td>
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<td>.51**</td>
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Note: ** p < .01.

Table 2. Means, standard deviations and correlations

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Notes: **p < .01, *p < .05. The lower triangular of the correlation matrix shows the correlations at the within-person level, and the upper triangular shows the correlations at the between-person level. PCB, App and Avo refer to PC breach, approach coping and avoidance respectively.

Table 3. Mean, standard deviations and correlations including subdimensions of coping

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<td>.17*</td>
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Table 4. Cumulative probability of significant effects for PC breach, BAS, BIS, the interaction between BAS and PC breach, and the interaction between BIS and PC breach on the subdimensions of coping.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Active coping</th>
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