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Coping with daily boredom: Exploring the relationships of job boredom, counterproductive work behavior, organizational citizenship behavior, and cognitive reappraisal

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Abstract

Given that job boredom is experienced by more than half of the workforce on a daily basis, more scientific research on its potential outcomes and moderators is warranted. This study examined whether daily fluctuations in job boredom are associated with daily increases or decreases in counterproductive work behavior and organizational citizenship behavior, and whether individual differences in cognitive reappraisal moderated these relationships. Our hypotheses were tested in a daily diary study (396 daily observations); results indicated that the predicted positive relationships of job boredom with both active and passive counterproductive work behavior were supported, whereas the direction of the relationship between job boredom and organizational citizenship behavior was person-specific. Contrary to our expectations, cognitive reappraisal did not moderate any of the above relationships. Our results clearly show that scores on these constructs vary more within than between individuals and suggest that combining the within- and between-person levels, both in theorizing and analyses, is necessary to understand these phenomena better.

Keywords Job boredom · Counterproductive work behavior (CWB) · Organizational citizenship behavior (OCB) · Cognitive reappraisal · Multi-level modelling

Job boredom refers to a negative, deactivating emotional state experienced by employees (Van Hooff & Van Hooff, 2014). Despite the ubiquity of job boredom, with research findings suggesting that it affects more than half of the workforce on a frequent basis, there are a lot of research areas that are still unexplored regarding this construct and its correlates (Fisher, 1993; Pekrun et al., 2010; Sánchez-Cardona et al., 2020). Of the existing studies on job boredom, the vast majority have been cross-sectional, treating job boredom as a phenomenon that varies between jobs or persons, and therefore examining its stable, between-person correlates: in essence, researching questions such as which

individuals are more prone to feeling bored at work, or in which behaviors do employees who in general score higher on job boredom engage, compared to those who in general score lower (Oprea, 2019; Sánchez-Cardona et al., 2020). Although this approach has its merits, it conflicts with most conceptualizations that conceptualize job boredom as an emotion, which by definition is a construct of transient nature (Loukidou et al., 2009). The relatively few studies that have examined job boredom as a state have found that it varies more strongly within an individual than between individuals (van Hooff & van Hooff, 2016, 2017), and thus have demonstrated that it is essential to not only study stable between-person differences in job boredom, but also the short-term within-person fluctuations, and their relation to short-term antecedents and outcomes.

Towards this end, in this study we focus on the relationship between job boredom and two types of job performance, namely organizational citizenship behavior and counterproductive work behavior. Organizational citizenship behavior refers to employee behaviors that promote organizational functioning (Lee & Allen, 2002), whereas counterproductive work behavior consists of

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employee acts that go against the legitimate interests of the organization (Sackett, 2002). Similar to most studies of job boredom, the majority of studies on organizational citizenship behavior and counterproductive work behavior have researched these constructs through a static lens. This approach has led to a steady stream of studies examining the characteristics that can explain why certain employees choose to engage in more organizational citizenship behaviors—or more counterproductive work behaviors—than other employees. Although the findings of these between-person studies have been critical to our understanding of organizational citizenship behavior and counterproductive work behavior, they fail to provide insight into two important characteristics of these constructs. That is, by focusing on stable, between-person differences, these studies fail to acknowledge that performance is dynamic, rather than static (Beal et al., 2005; for example, the typical employee would not always volunteer to help a colleague but rather would show this behavior now and then), or that the same individual often engages in both organizational citizenship behavior and counterproductive work behavior (Dalal et al., 2009; Spanouli & Hofmans, 2016). In response to these issues, the episodic approach to performance looks at how performance fluctuates within individuals over time (Beal et al., 2005). Although this stream of research is still in its infancy, it has convincingly shown that, on average across studies, roughly half of the total variance in organizational citizenship behaviors and counterproductive work behaviors is due to within-person fluctuations (Dalal et al., 2014; McCormick et al., 2020; see also Dalal et al., 2009; Spanouli & Hofmans, 2016; Trougakos et al., 2015). Given that results at the between-person level cannot automatically be generalized to the within-person level (for a detailed conceptual and mathematical explanation, see Hamaker, 2012), this observation implies that, if we are to focus exclusively on between-person, cross-sectional approaches and results, we risk missing about half the story (Scott et al., 2016).

In this paper, we combine the episodic within-person and the stable between-person approach to the study of job boredom, organizational citizenship behavior, and counterproductive work behavior. We do so by studying how within-person fluctuations in organizational citizenship behavior and counterproductive work behavior relate to within-person fluctuations in job boredom, and how stable between-person differences in cognitive reappraisal may moderate these relationships. We argue that momentary experiences of job boredom relate to an employee's momentary engagement in organizational citizenship behaviors and counterproductive work behaviors through the adoption of two coping behavioral strategies: an active

one, composed of stimulation-seeking behaviors, and a passive one, composed of withdrawal behaviors. We further argue that an employee's level of cognitive reappraisal may moderate these relationships.

To our knowledge, this is the first study to research daily job boredom and its relationships with daily organizational citizenship behavior, counterproductive work behavior, and cognitive reappraisal. Although by now we have clear evidence for various long-term negative consequences of job boredom, research on the short-term behavioral strategies associated with job boredom is scarce (Van der Heijden et al., 2012). Such studies are important not only for theory but also for practice, as job boredom is a phenomenon that is widespread across different industries and professions (Harju et al., 2014), suggesting that it is a much more prevalent work phenomenon than previously assumed. This creates a pressing need for more research on job boredom, as studies have demonstrated that it can have detrimental consequences for both employee and organizational well-being, as shown by its positive link with constructs such as depression (van Hooff & van Hooff, 2014) absenteeism (Kass et al., 2001), turnover intentions (Harju et al., 2014), and its negative link with overall quality of life (for overviews of job boredom and its correlates, see Fisher, 1993, 2018; Loukidou et al., 2009

Job boredom and counterproductive work behavior

Numerous studies have dealt with the effect of over-stimulation and its many manifestations in work settings, while much less attention has been drawn to its counterpart: under-stimulation (Schaufeli & Salanova, 2013). Job boredom, a typical construct measuring under-stimulation at work, refers to “an unpleasant affective state resulting from the under-use of a person's physical or cognitive capacity at work” (Van der Heijden et al., 2012, p. 350). Although we know by now of some of the negative consequences that job boredom can have in the long term, much less is known about the correlates of daily experiences of job boredom (Van der Heijden et al., 2012). In what follows, we discuss how daily job boredom is expected to relate to daily engagement in counterproductive work behavior and organizational citizenship behavior, and how individual differences in cognitive reappraisal may moderate these relationships.

Counterproductive work behavior is an umbrella construct, representing the dark side of employees' extra role performance. Traditionally, scholars have either studied counterproductive work behavior as a single index (e.g., Miles et al., 2002) or subdivided it into various categories

of counterproductive work behavior. Regarding the second option (i.e., subcategories of counterproductive work behavior), the ones receiving the most research attention are the ones differentiating per target of the behavior (towards the individual vs. towards the organization; e.g., Bennett & Robinson, 2000), per severity (minor vs. serious; e.g., Robinson & Bennett, 1995) and per behavior type (abuse, withdrawal, theft, production deviance and sabotage; e.g., Spector et al., 2006). For the needs of this study we, however, differentiate between active and passive counterproductive work behavior (see Bauer & Spector, 2015). Active counterproductive work behavior refers to those behaviors that require employees to actively engage in them (corresponding to the behavior types of abuse, sabotage and theft), whereas passive counterproductive work behavior refers to those behaviors that are characterized by an employee's inaction (namely production deviance and withdrawal; for more information see Bauer & Spector, 2015). Despite their differences, what all the above approaches have in common is that the behaviors composing them are considered intentional and harmful for the organization and/or its members (Fox et al., 2001).

Consistent with the construct definition of counterproductive work behavior, most studies have started from the assumption that employees engage in these acts with the intention to harm the organization, either owing to their personality or as a response to unfavorable organizational conditions (e.g., Fox et al., 2001; Spector, 2011). This fact, in combination with the predominant between-person approach, has resulted in a stream of literature suggesting that this behavior is rather static, with some people being more inclined than others to engage in counterproductive work behaviors (e.g., based on their high scores on boredom proneness or low scores on conscientiousness; Bowling, 2010; Bruursema et al., 2011). Recent studies, however, have shown that counterproductive work behaviors are quite volatile over time and that employees have not just one but rather a variety of reasons to engage in them (see Bolton et al., 2012; Bruursema et al., 2011; Dalal et al., 2009, 2014; Krischer et al., 2010; McCormick et al., 2020; Park et al., 2021; Wehrt, 2020).

In line with this recent stream in the literature, we suggest that one of the reasons why employees engage in counterproductive work behaviors is to attenuate their feelings of job boredom. But why would employees who experience boredom engage in counterproductive work behaviors, considering that the latter are generally perceived as negative employee behaviors? According to functional models of emotion, boredom is a call for action in the sense that it signals to the individual that the current situation they

are involved in is no longer fulfilling, and thus it is time for them to pursue new goals and experiences (Bench & Lench, 2013; Elpidorou, 2022). Interestingly, the only criterion for the pursuit of these new goals and experiences is that they elicit an emotional response, regardless of whether the response or the experiences themselves are considered positive or negative. This has repeatedly been shown in studies relating boredom with behaviors such as seeking negative images (Bench & Lench, 2019), gambling (Mercer & Eastwood, 2010), substance abuse (LePera, 2011), or even sadistic behaviors (Pfattheicher et al., 2021). In line with this reasoning, the few between-person studies that studied job boredom in relation to counterproductive work behavior have reported a positive relationship for boredom with both counterproductive work behavior (Kim et al., 2021; van Hooff & van Hooff, 2014) and its sub-dimensions (Bauer & Spector, 2015; Bruursema et al., 2011; Spector et al., 2006), suggesting that people who in general experience more job boredom also engage more often in counterproductive work behaviors.

In this study, we focus at the state level of counterproductive work behavior and we propose that, when employees experience high levels of job boredom, they can engage in two different coping behavioral strategies, an active one or a passive one (for a similar approach, see Van der Heijden et al., 2012). In the active form, employees seek stimulation as a way to deal with job boredom and thus may engage in active counterproductive work behaviors in an attempt to lift their mood, keep themselves busy, or simply look for distraction. Examples of such behavior might include playing a mean prank on a coworker, starting an argument with a customer, or capriciously pulling the fire alarm. In the passive form, employees are distancing themselves from the cause of their boredom and therefore these employees might engage in passive counterproductive work behaviors such as taking a longer break or leaving work early. We thus maintain that within-person variation in job boredom will be positively linked to within-person variation in both active and passive counterproductive work behavior—or, put differently, that, at moments when employees experience high levels of job boredom, they engage in more active and passive counterproductive work behaviors.

Hypothesis 1 Within-person fluctuations in job boredom relate positively to within-person fluctuations in active counterproductive work behavior.

Hypothesis 2 Within-person fluctuations in job boredom relate positively to within-person fluctuations in passive counterproductive work behavior.

Job boredom and organizational citizenship behavior

As opposed to counterproductive work behavior, organizational citizenship behavior is considered favorably by organizations. A plethora of articles have been written since the construct's foundation by Organ and colleagues (Organ, 1988; Smith et al., 1983), leading to various developments that have shaped the construct in the form that it has at present. For example, contrary to the initial conception of “good soldiers” as a term to represent employees who generally engage in organizational citizenship behaviors compared to those who do not, researchers have now shown that the reality of who and why engages in organizational citizenship behavior is much more complex, as these behaviors can vary within individuals in a matter of months, weeks or even days (e.g., Dalal et al., 2009, 2014; Ilies et al., 2013; Koopman et al., 2016; McCormick et al., 2020; Methot, 2021; Spanouli & Hofmans, 2021).

Even though there is a vast literature on the antecedents of organizational citizenship behavior (see Ocampo, 2018; Podsakoff et al., 2000), little is written on its relation to job boredom. Spector and Fox (2010), in their theoretical proposition paper, have suggested that bored employees might engage in more organizational citizenship behaviors as a strategy to enrich their jobs and to escape boredom, while Skowronski (2012) proposed a model in which organizational citizenship behavior serves as a problem-focused response to boredom. The reasoning of these approaches is similar to our reasoning, which holds that, at moments when employees feel bored, they may engage in organizational citizenship behavior as a result of their engagement in an active, stimulation-seeking strategy to deal with the feelings of boredom. Although the reasons why employees may seek stimulation can vary (e.g., see links with extraversion, Loukidou et al., 2009; Pletzer et al., 2021; or boredom proneness, Kass et al., 1990), in the present paper we focus on the state level, and maintain that when employees experience job boredom they may engage in more organizational citizenship behavior as a means to craft or enrich their job, and thus actively deal with boredom. An example of such organizational citizenship behaviors may be volunteering for an extra assignment, offering to help a colleague with a new skill, or helping new employees get oriented to the job. In a related context, van Tilburg and Igou (2017) have found that boredom promotes prosocial intentions as a form of self-regulation.

However, as we have argued before, there are two different coping strategies employees may use to deal with job boredom: an active one and a passive one (Van der Heijden et al., 2012). Following this reasoning, employees may

also choose to engage in a passive, withdrawal strategy in response to boredom, and as a result opt out from citizenship behaviors altogether. As the source of their boredom is their job, at moments when employees experience job boredom, they may choose to disassociate and distance themselves from work instead of going the extra mile. Thus, at those moments, employees may not engage in stimulation-seeking behaviors in response to boredom, but instead, may adopt a more passive approach by choosing to do the absolute minimum needed of them, or in any case not more than they have to. As organizational citizenship behaviors are generally considered extra-role behaviors and therefore not part of their formal tasks, employees have the discretion to withdraw from engaging in such behaviors when they experience high levels of job boredom. In the same examples used above, at moments when one feels bored at work, one may choose not to volunteer for that extra assignment, may not feel like offering help to the colleague who is learning a new skill, or may not offer to help the new employee get oriented to the job. The study by Kim et al. (2021) corroborated this approach, showing a negative relationship between job boredom and organizational citizenship behavior.

As employees can choose either the active or the passive strategy, we expect that within-person variation in job boredom can be either positively or negatively linked with within-person variation in organizational citizenship behavior, with some people engaging in the active, stimulation-seeking strategy (giving rise to a positive within-person boredom-organizational citizenship behavior relationship) and others engaging in the passive, withdrawal strategy (giving rise to a negative within-person boredom-organizational citizenship behavior relationship). As we have no reasons to expect one relationship to prevail over the other, we will formulate and examine this relationship as a research question:

RQ How do within-person fluctuations in job boredom relate to within-person fluctuations in organizational citizenship behavior?

Cognitive reappraisal as a moderator of the relationship between job boredom and counterproductive work behavior/organizational citizenship behavior

Any attempt to influence the experience or the expression of our emotions falls under the scope of emotional regulation, defined as “the activation of a goal to modify the emotion-generative process” (Gross et al., 2011, p. 767). Although individuals may employ a variety of strategies to regulate their emotions (see Koole, 2009), one of the most effective

strategies—as demonstrated in numerous studies—is cognitive reappraisal (for an overview see Webb et al., 2012; for a different approach, see Troy et al., 2013). Cognitive reappraisal is an antecedent-focused emotion regulation strategy, concerned with seeking to regulate one's emotions rather than the response to it (i.e., response-focused emotion regulation). In particular, cognitive reappraisal refers to the process in which individuals reframe their thoughts on a situation or on their ability to tackle the situation, and by doing so alter their emotions about the situation at hand (Gross, 1998a, 1998b).

Whereas engaging in organizational citizenship behavior and counterproductive work behavior when feeling bored is essentially a behavioral adaptation strategy, cognitive reappraisal is, as its name reveals, a conceptual adaptation strategy. What that means is that individuals who engage in cognitive reappraisal seek to mentally re-evaluate their experience and alter their emotions, and as such they have less of a need to adapt their behaviors in response to their emotions (Gross & John, 2003). Studies have shown that this is one of the most effective strategies students use to tackle boredom as by changing the perception of the situation (e.g., by focusing on the utility of a course) they manage to experience less boredom (Nett et al., 2010, 2011; Schwartze et al., 2020). Taken to a work context, reframing a boring repetitive task as an opportunity to gain mastery, or changing the meaning of a menial task in a way that you perceive it as being an integral part for your future career success are examples of such reappraisal.

In terms of our study, we expect that people who tend to engage more in conceptual emotional regulation (i.e., cognitive reappraisal) will be less likely to also engage in behavioral emotion regulation through organizational citizenship behavior and counterproductive work behavior than people who engage less in cognitive reappraisal. As such, we expect that the relationship between job boredom and counterproductive work behavior and job boredom and organizational citizenship behavior will be weaker for employees who score high (compared to employees who score low) on cognitive reappraisal. Although there are, to our knowledge, no studies that have examined these relationships, past studies have reported similar weakening effects of cognitive reappraisal on the relationship between significant work events and negative emotional reactions (Matta et al., 2014), and the relationship between abusive supervision and supervisor-directed deviance (Peng et al., 2020).

Hypothesis 3 Cognitive reappraisal moderates the within-person relationship between job boredom and active

counterproductive work behavior, such that the positive relationship is weaker for people high on cognitive reappraisal than for people low on cognitive reappraisal.

Hypothesis 4 Cognitive reappraisal moderates the within-person relationship between job boredom and passive counterproductive work behavior, such that the positive relationship is weaker for people high on cognitive reappraisal than for people low on cognitive reappraisal.

Hypothesis 5 Cognitive reappraisal moderates the within-person relationship between job boredom and organizational citizenship behavior, such that the relationship is weaker for people high on cognitive reappraisal than for people low on cognitive reappraisal.

Methods

Participants and procedure

Fifty-eight employees, 24 of whom were men, participated in a daily diary study which took place in Belgium. A plurality (45.7%) of respondents had completed their secondary education, and organizational tenure varied from less than a year to 39 years ($M = 11.96$, $SD = 12.48$). Respondents had an average age of 36 years ($SD = 11.63$) and the sectors in which they were employed included—among others—education, human health and social services, administrative and support services, financial activities and insurance, arts and entertainment, and real estate.

A research assistant contacted individuals within her personal network, asking them to participate in the study. All individuals who agreed to participate signed an informed consent in which it was indicated that all responses given would be anonymized, and that they could withdraw from the study at any point they wished. Because the data collection took part in Belgium, all measures were translated from the original English version to Dutch, using the back-translation procedure (Brislin, 1980). Before launching the daily diary study, participants received an online questionnaire in which they had to fill out some demographics and the cognitive reappraisal scale (note that the original questionnaire included additional variables that are not reported in this study; data available via open science framework https://osf.io/z432b/?view_only=6f392429f0194456b740b6154678297e). For the next 10 consecutive workdays, they received the daily diary survey at the end of each workday with questions pertaining to job boredom, counterproductive work behavior, and organizational citizenship behavior. In total, we

obtained 396 daily observations out of a maximum number of $58 \times 10 = 580$ observations, equaling a response rate of 68% (note that for 12 of these participants we do not have cognitive reappraisal scores).

Measures

Job boredom was measured with the 5-item scale by van Hooff and van Hooft (2014). The scale was based on Lee's (1986) Job Boredom scale but, consistent with current conceptualizations, the items that confounded job boredom with its potential antecedents (e.g., "Is your work monotonous?") or outcomes (e.g., "Do you get apathetic on the job?") were omitted (for a complete list of items, see Table 2 in Appendix). As our study focused on daily fluctuations of job boredom, we added "today" to each item, with an example item being "There were long periods of boredom on my job today". Respondents rated the items on a scale ranging from 1 (*almost never*) to 5 (*almost always*). Because we focus on within-person fluctuations in job boredom, we tested the within-person reliability of the five-item job boredom scale using the multilevel confirmatory factor analysis approach of Geldhof et al (2014), resulting in a within-person omega reliability coefficient of 0.95.

Counterproductive work behavior was measured with the 32-item Counterproductive Work Behavior Checklist (Spector et al., 2006). Following Bauer and Spector (2015), we measured *active* counterproductive work behavior with the subscales of Abuse, Sabotage, and Theft, and *passive* counterproductive work behavior with the subscales of Production Deviance and Withdrawal (note that we excluded two withdrawal items as they could not be linked with state boredom chronologically; for a complete list of items, see Table 3 in Appendix). Because we wanted to capture daily performances of counterproductive work behavior, we prefaced all items with "Today, I", and, consistent with several other experience-sampling measures of counterproductive work behavior (e.g., Dalal et al., 2009), provided our participants with two response categories (0 = no, 1 = yes). An example item for active counterproductive work behavior is "Today, I started an argument with someone at work", and for passive counterproductive work behavior is "Today, I took a longer break than I was allowed to take". As counterproductive work behavior is a formative construct, meaning that the behaviors comprising it are conceptually related but not necessarily correlated within one day (e.g., it is not because on one day you took a longer break than you were allowed that you also started an argument with someone at work

on that same day), we calculated no internal consistency reliability index (see Bollen & Lennox, 1991; Edwards & Bagozzi, 2000).

Organizational citizenship behavior was measured with the 20-item Organizational Citizenship Behavior Checklist (Fox et al., 2012; see Table 4 in Appendix). Similar to counterproductive work behavior, we prefaced all items with "Today, I" and provided two response categories (0 = no, 1 = yes). An example item is "Today, I helped a co-worker who had too much to do". Similar to counterproductive work behavior, no internal consistency reliability index was calculated for organizational citizenship behavior.

Cognitive reappraisal was measured with the corresponding scale of the Emotional Regulation Questionnaire (Gross & John, 2003; see Table 5 in Appendix). The scale included 6 items with an example item being "I control my emotions by changing the way I think about the situation I'm in". Participants indicated their answers on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha was 0.82.

Analyses

Due to the repeated measurements design, our data have a nested structure with i daily measurements nested within j participants. To account for dependencies in the data resulting from this nested data structure, we analyzed the data using multilevel regression analysis. Moreover, because the counterproductive work behavior and organizational citizenship behavior scales are count variables—reflecting the number of behaviors the participants engaged in on that particular day—we modelled counterproductive work behavior and organizational citizenship behavior using multilevel Poisson regression. All analyses were conducted using the lme4 package in R (Bates et al., 2015).

To test Hypotheses 1 and 2 (i.e., within-person fluctuations in job boredom relate positively to within-person fluctuations in active, and passive counterproductive work behavior respectively) as well as our Research Question (i.e., how do within-person fluctuations in job boredom relate to within-person fluctuations in organizational citizenship behavior?), we first group-mean centered (here: person-mean centered) the job boredom scores. By group-mean centering the scores, all between-person differences in the job boredom scores are removed from the data, retaining only within-person variability. Subsequently, we regressed active counterproductive work behavior (respectively passive counterproductive work behavior and organizational citizenship behavior) on (1) the group-mean centered job boredom scores and (2) the group-mean centered previous day active

counterproductive work behavior (respectively passive counterproductive work behavior and organizational citizenship behavior) scores. By including previous-day active counterproductive work behavior (respectively passive counterproductive work behavior and organizational citizenship behavior) as a predictor of current-day active counterproductive work behavior (respectively passive counterproductive work behavior and organizational citizenship behavior), we essentially control for autocorrelation or the effect of a variable on itself at a future time, thereby testing whether boredom predicts active counterproductive work behavior (respectively passive counterproductive work behavior and organizational citizenship behavior) above and beyond previous-day active counterproductive work behavior (respectively passive counterproductive work behavior and organizational citizenship behavior), where \ln is the natural logarithm (i.e., logarithm to the base e , where $e \approx 2.718$).

$$\begin{aligned} \ln(\text{Counterproductive Work Behavior}_{ij}) \\ = \beta_{0j} + \beta_{1j}(\text{Job Boredom})_{ij} \\ + \beta_{2j}(\text{Counterproductive Work Behavior})_{i-1j} \end{aligned} \quad (1)$$

$$\beta_{0j} = \gamma_{00} + \mu_{0j} \quad (2)$$

$$\beta_{1j} = \gamma_{10} + \mu_{1j} \quad (3)$$

$$\beta_{2j} = \gamma_{20} + \mu_{2j} \quad (4)$$

Hypotheses 1 and 2 (i.e., within-person fluctuations in job boredom relate positively to within-person fluctuations in active and passive counterproductive work behavior, respectively), are tested by assessing whether γ_{10} is positive and statistically significant. For testing our Research Question (i.e., how do within-person fluctuations in job boredom relate to within-person fluctuations in organizational citizenship behavior?), the statistical significance of γ_{10} is less relevant because this parameter pertains to the *average effect* of job boredom on organizational citizenship behavior, across individuals. Instead, our Research Question predicts the random effect associated with this slope (i.e., μ_{1j}) to be statistically significant. Moreover, we expect some slope estimates to be positive and others to be negative. This will be tested by inspecting the distribution of the random slopes.

The third and fourth hypothesis (i.e., cognitive reappraisal moderates the within-person relationship of job boredom with active and passive counterproductive work behavior, such that the positive relationship is weaker for people high than low on cognitive reappraisal) were tested in a model in which: (1) within-person fluctuations in job boredom and the previous day active or passive counterproductive work

behavior score predicted within-person fluctuations in active or passive counterproductive work behavior (see Formula 5, which is identical to Formula 1), (2) between-person fluctuations in cognitive reappraisal predicted between-person fluctuations in active or passive counterproductive work behavior (see Formula 6), and (3) between-person fluctuations in cognitive reappraisal predicted the strength of the within-person relationship between job boredom and active or passive counterproductive work behavior (see Formula 7). The cognitive reappraisal scores were grand-mean centered before performing the analyses. Hypothesis 3 and 4 are supported when γ_{11} is negative and statistically significant.

$$\begin{aligned} \ln(\text{Counterproductive Work Behavior}_{ij}) \\ = \beta_{0j} + \beta_{1j}(\text{Job Boredom})_{ij} \\ + \beta_{2j}(\text{Counterproductive Work Behavior})_{i-1j} \end{aligned} \quad (5)$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Cognitive Reappraisal})_j + \mu_{0j} \quad (6)$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}(\text{Cognitive Reappraisal})_j + \mu_{1j} \quad (7)$$

$$\beta_{2j} = \gamma_{20} + \mu_{2j} \quad (8)$$

Finally, whereas Hypothesis 5 (i.e., cognitive reappraisal moderates the within-person relationship between job boredom and organizational citizenship behavior such that the relationship is weaker for people high than low on cognitive reappraisal) superficially resembles Hypotheses 3 and 4, it was tested in a different way. The reason is that we expected the relationship between job boredom and organizational citizenship behavior (i.e., γ_{10}) to be positive for some people and negative for others. For people characterized by a positive relationship between job boredom and organizational citizenship behavior, high levels of reappraisal should dampen the positive relationship in the sense that it becomes less positive. For people characterized by a negative relationship between job boredom and organizational citizenship behavior, high levels of reappraisal should also weaken the relationship and make it less negative. Thus, both the positive and negative relationships between job boredom and organizational citizenship behavior should converge to zero when cognitive reappraisal is high. To test this idea, we estimated the random slopes relating job boredom to organizational citizenship behavior (i.e., the β_{1j} s), removed the direction of these slopes by taking their absolute value, and correlated the absolute value of the slopes with the cognitive reappraisal scores. A negative correlation between the absolute slope values and the cognitive reappraisal scores would support the idea that cognitive reappraisal dampens the relationship between job boredom and organizational

Table 1 Means, intra-class correlation coefficients (ICCs), variances and correlations

	Mean	ICC	1	2	3	4	5
1. Active CWB	0.35	0.30	0.47/0.27	0.54**	0.28*	0.28*	-0.04
2. Passive CWB	0.15	0.12	0.09	0.14/0.05	0.06	0.41**	-0.01
3. OCB	3.83	0.38	0.18**	0.01	4.92/5.23	0.10	0.12
4. Job boredom	1.63	0.32	0.13**	0.27**	-0.08	0.54/0.37	0.27
5. Cognitive reappraisal	4.46	–	–	–	–	–	-1.11

On the diagonal, within-person variances are before and between-person variances are after the slash. Within-person correlations are below and between-person are above the diagonal

* $p < 0.05$. ** $p < .01$. *** $p < 0.001$

citizenship behavior, regardless of the direction of the job boredom-organizational citizenship behavior relationship.

Statistical power

Calculating statistical power for multilevel regression models is a complicated issue because it “is a complex combination of the number of higher-level units and lower-level units under investigation, the co-variances within and between units, and a slew of other factors that are still being investigated” (Mathieu & Chen, 2011, p. 631). Despite this complexity, some authors have come up with rules of thumb for multilevel analysis. For example, in their overview article of multilevel modeling, González-Romá and Hernández (2017) argued that estimates of cross-level interactions are typically unbiased when one has 30 or more level-2 units. Additionally, LaHuis and Ferguson (2009) demonstrated that there is enough statistical power to detect small cross-level interactions (see Hypotheses 3 and 4) and variance components (see Research Question 1) with at least 50 level-2 units, each having 10 level-1 units. For testing fixed effects (see Hypotheses 1 and 2), both the number of level-1 units and the number of level-2 observations matter, with level-2 sample sizes larger than 30 having minimal impact on the standard errors of those fixed effects (Maas & Hox, 2005). As the sample sizes in the present study are roughly in line with these guidelines, having 58 level-2 units with an average of 7 level-1 observations, we anticipate no large statistical power issues.

Results

Means, intra-class correlation coefficients (ICCs), within- and between-person variances (on the diagonal) and the within- and between-person correlations between active counterproductive work behavior, passive counterproductive work behavior, organizational citizenship behavior, job boredom, and cognitive reappraisal are shown in Table 1. First of all, the ICCs (which represent the amount

of variance that can be explained by between-person differences) revealed that a substantial part of the variance in active counterproductive work behavior (i.e., 70%), passive counterproductive work behavior (i.e., 88%), organizational citizenship behavior (i.e., 62%), and job boredom (i.e., 68%) was due to within-person fluctuations, supporting the idea that these constructs fluctuate substantially on a daily basis. Regarding the interrelationships, we found positive correlations at both the within- and between-person levels between active counterproductive work behavior and job boredom ($r_{within} = 0.13$; $p = 0.008$; $r_{between} = 0.28$; $p = 0.031$), and passive counterproductive work behavior and job boredom ($r_{within} = 0.27$; $p < 0.001$; $r_{between} = 0.41$; $p = 0.001$). Organizational citizenship behavior, instead, turned out to be unrelated to boredom at both the within- and between-person levels ($r_{within} = -0.08$; $p = 0.108$; $r_{between} = 0.10$; $p = 0.461$). Organizational citizenship behavior was positively related to active counterproductive work behavior ($r_{within} = 0.18$; $p < 0.001$; $r_{between} = 0.28$; $p = 0.032$)¹ but unrelated to passive counterproductive work behavior ($r_{within} = 0.01$; $p = 0.858$; $r_{between} = 0.06$; $p = 0.675$), whereas active counterproductive work behavior was unrelated to passive counterproductive work behavior at the within-person level but positively related at the between-person level ($r_{within} = 0.09$; $p = 0.089$; $r_{between} = 0.54$; $p < 0.001$). Finally, between-person differences in cognitive reappraisal did not relate to between-person differences in job boredom ($r = 0.27$; $p = 0.068$), active counterproductive work behavior ($r = -0.04$; $p = 0.795$), passive counterproductive work behavior ($r = -0.01$; $p = 0.970$), or organizational citizenship behavior ($r = 0.12$; $p = 0.418$).

Next, we tested whether within-person fluctuations in job boredom related to within-person variation in active and passive counterproductive work behavior. In line with

¹ Positive relationships between organizational citizenship behavior and counterproductive work behavior have often been observed in prior literature (see, e.g., Dalal et al., 2009; Fox et al., 2012; Ilies et al., 2013; Spector, Bauer, & Fox, 2010; for potential theoretical explanations, see Bolino & Klotz, 2013, 2015; Dalal & Carpenter, 2018; Fox et al., 2012; Spector & Fox, 2010).

Hypotheses 1 and 2 we found that, while controlling for the autoregressive effect (i.e., the effect of the outcome variable on itself on the next time point), job boredom related positively to active counterproductive work behavior ($\gamma_{10}=0.32$; $p=0.028$), and passive counterproductive work behavior ($\gamma_{10}=0.71$; $p<0.001$).

Regarding organizational citizenship behavior, the relationship with job boredom was not statistically significant ($\gamma_{10}=-0.11$; $p=0.172$). However, there were substantial individual differences in the extent to which within-person variation in job boredom related to within-person variation in organizational citizenship behavior ($Var(\mu_{1j})=0.06$; $p<0.001$). That is, whereas some people increased their level of organizational citizenship behavior when experiencing increased levels of job boredom, others decreased it.

To test Hypotheses 3 and 4, we examined the moderating effect of cognitive reappraisal on the relationship of job boredom with active and passive counterproductive work behavior (once again controlling for the autoregressive effect). Between-person differences in cognitive reappraisal did not moderate the within-person relationship of job boredom with either active counterproductive work behavior ($\gamma_{11}=-0.05$; $p=0.845$) or passive counterproductive work behavior ($\gamma_{11}=0.11$; $p=0.699$). Moreover, there was no direct effect of cognitive reappraisal on active counterproductive work behavior ($\gamma_{01}=-0.30$; $p=0.438$) or on passive counterproductive work behavior ($\gamma_{01}=-0.19$; $p=0.531$).

Finally, we tested the moderating effect of cognitive reappraisal on the relationship between job boredom and organizational citizenship behavior by: (1) saving the random slopes relating job boredom to organizational citizenship behavior, (2) removing the direction of these slopes by taking the absolute value, and (3) correlating the absolute value of the slopes with the cognitive reappraisal scores. In line with the findings for counterproductive work behavior, we found no significant relationship between the magnitude of the job boredom-organizational citizenship behavior slope and individual differences in cognitive reappraisal ($r=-0.16$; $p=0.289$).

Sensitivity checks

As a first sensitivity check, we tested the sensitivity of our findings to organizational tenure. This might be the case if people with longer tenure in the organization would become more adept at coping with boredom.² To test this possibility, we examined whether organizational tenure moderated the relationship between job boredom and active counterproductive work behavior, passive counterproductive work behavior, and organizational citizenship behavior. For active

counterproductive work behavior, neither the moderation effect of organizational tenure on the within-person relationship between job boredom and active counterproductive work behavior ($\gamma_{11}=0.01$; $p=0.475$) nor the main effect of organizational tenure ($\gamma_{10}=-0.01$; $p=0.660$) was statistically significant. Similarly, for passive counterproductive work behavior, the cross-level interaction effect between job boredom and organizational tenure ($\gamma_{11}=-0.00$; $p=0.951$) and the main effect of organizational tenure ($\gamma_{10}=-0.01$; $p=0.568$) were non-significant. Finally, organizational tenure turned out to moderate the relationship between job boredom and organizational citizenship behavior ($r=0.30$; $p=0.044$). Because this moderation effect was tested by computing the correlation between the absolute values of the random slope estimates and organizational tenure, this finding implies that people with longer tenure in the organization react more strongly to fluctuations in job boredom, regardless of whether they increase or decrease their level of organizational citizenship behavior in response to within-person fluctuations in job boredom.

Second, we tested the possibility that the within-person associations between boredom and passive counterproductive work behavior, active counterproductive work behavior, and organizational citizenship behavior might be different for employees with different baseline levels of job boredom. We computed per participant the average job boredom score across all their repeated measurements and tested whether individual differences in (average) job boredom moderated the relationship of job boredom with active counterproductive work behavior, passive counterproductive work behavior, and organizational citizenship behavior. This turned out to not be the case, with non-significant cross-level interactions for active counterproductive work behavior ($\gamma_{11}=-0.35$; $p=0.103$) and passive counterproductive work behavior ($\gamma_{11}=-0.28$; $p=0.372$). Moreover, we found that people who on average experience more job boredom engage in higher levels of active counterproductive work behavior ($\gamma_{10}=1.03$; $p=0.042$) but not of passive counterproductive work behavior ($\gamma_{10}=0.47$; $p=0.354$). Finally, we found no association between the absolute values of the random slope estimates and the person's average level of job boredom ($r=0.26$; $p=0.059$). This sensitivity check reveals that the within-person associations between job boredom and active counterproductive work behavior, passive counterproductive work behavior, and organizational citizenship behavior do not differ as a function of one's overall level of job boredom.

Finally, we also tested a series of models in which we regressed active counterproductive work behavior, passive counterproductive work behavior, and organizational citizenship behavior on the group-mean centered job boredom scores, the group-mean centered previous day outcome variable scores (i.e., the previous day's active counterproductive work behavior, passive counterproductive work behavior,

² We thank an anonymous reviewer for bringing up this point.

and organizational citizenship behavior, respectively), and the group-mean centered previous day job boredom scores. This allows testing whether: (a) previous day job boredom predicts today's active counterproductive work behavior, passive counterproductive work behavior, and organizational citizenship behavior, and (b) whether today's job boredom predicts today's active counterproductive work behavior, passive counterproductive work behavior, and organizational citizenship behavior above and beyond previous day job boredom and previous day active counterproductive work behavior, passive counterproductive work behavior, and organizational citizenship behavior. In none of those models was the previous day job boredom a significant predictor ($\gamma=0.11$; $p=0.480$ for active counterproductive work behavior, $\gamma=0.09$; $p=0.676$ for passive counterproductive work behavior, and $\gamma=-0.00$; $p=0.939$ for organizational citizenship behavior). Moreover, same day job boredom remained a significant predictor for active counterproductive work behavior ($\gamma=0.33$; $p=0.025$) and passive counterproductive work behavior ($\gamma=0.75$; $p<0.001$), while it remained non-significant for organizational citizenship behavior ($\gamma=-0.11$; $p=0.174$), thereby showing that including previous day job boredom as a control variable in our model does not affect our main findings.

Discussion

The aim of our paper was to test whether within-person variation in job boredom is associated with within-person variation in active counterproductive work behavior, passive counterproductive work behavior, and organizational citizenship behavior—and whether individual differences in cognitive reappraisal moderate these relationships. Our results showed that the predicted positive within-person relationships of job boredom with active and passive counterproductive work behavior were supported. Job boredom was on average unrelated to organizational citizenship behavior at the within-person level, although there was substantial between-person variation in this association, implying that the direction of the boredom-organizational citizenship behavior relationship is person-specific. Finally, contrary to our hypotheses, cognitive reappraisal did not moderate the relationship of job boredom with active counterproductive work behavior, passive counterproductive work behavior, or organizational citizenship behavior.

Our prediction was that employees who experience job boredom will engage either in withdrawal behaviors or in behaviors that increase stimulation, which translate into higher levels of passive and active counterproductive work

behavior, respectively. This reasoning was supported in our study and was in line with findings from studies at the between-person level, which showed a positive relationship between job boredom and counterproductive work behavior (Bauer & Spector, 2015; Bruuserma et al., 2011; Kim et al., 2021; Spector et al., 2006; van Hooff & van Hoft, 2014), demonstrating that individuals who on average experience more job boredom engage in more counterproductive work behaviors. Our results confirm that a similar relationship holds at the within-person level, showing that daily levels of job boredom are positively related to daily active and passive counterproductive work behaviors. More specifically, based on the respective effect sizes, our results indicated that employees experiencing job boredom tend to distance themselves from work by engaging in passive counterproductive work behaviors (e.g., taking a longer break than allowed) rather than seek stimulation in the form of active counterproductive work behaviors (e.g., starting an argument). Interestingly the results were reversed at the between-person level, with our sensitivity analysis showing that employees who on average experience more job boredom engage in higher levels of active counterproductive work behavior while they do not engage in passive counterproductive work behaviors. This finding is indicative of the different mechanisms that may underlie the relationship of job boredom and counterproductive work behavior at different levels of analysis, and highlights the importance of combining both the between- and within-person levels, as by focusing only on one level we run the risk of missing about half the story (Scott et al., 2016). Future research can shed light as to which mechanisms are into play at different levels of analysis, and whether there are such differences in the link of job boredom with other organizational constructs.

Turning to the relationship between boredom and organizational citizenship behavior, we found that the direction of the within-person relationship turned out to be person-specific. This finding adds to the existing theories that proposed a positive link between job boredom and organizational citizenship behavior (Skowronski, 2012; Spector & Fox, 2010) and the results by Kim et al. (2021) who reported a negative link between the two constructs. One interpretation of our results is that, while individuals might be consistent on whether they engage in organizational citizenship behaviors while feeling bored, the direction of this relationship can drastically differ between individuals. This is an interesting finding, because, although there exists a construct that captures individual differences in the *experience* of boredom (i.e. boredom proneness), there are to our knowledge no constructs capturing individual differences in the *reaction* to job boredom. Past research has demonstrated that individual differences in the reactivity to situational features are observed

with other constructs (e.g., extraversion; Minbashian et al., 2010). We therefore maintain that future research would benefit by zooming in on those person-specific differences by studying how different situational characteristics may differentially influence employee momentary behaviors.

Contrary to our expectations, we found no significant moderation effect of cognitive reappraisal on the job boredom-active and passive counterproductive work behavior links, nor on the job boredom-organizational citizenship behavior link. As cognitive reappraisal strategies assist in altering the thoughts and ultimately the emotions individuals experience (Gross, 1998a, 1998b), we expected that employees who score high (compared to low) on cognitive reappraisal will not need to engage in behavioral regulation strategies. If that had been true, we should have observed a weakening effect on the job boredom-active counterproductive work behavior, job boredom-passive counterproductive work behavior, and the job boredom-organizational citizenship behavior relationships. This weakening effect was not, however, evident in our results. This suggests that employees who tend to engage more in cognitive reappraisal do not differ from employees who tend to engage less in cognitive reappraisal when it comes to their performance of counterproductive work behavior or organizational citizenship behaviors when experiencing different degrees of job boredom. As cognitive reappraisal taxes one's cognitive resources, the lack of findings might be indicating that the effectiveness of such techniques is context dependent (Gan et al., 2017). Therefore, in situations where these resources are in short supply, due to for example a demanding task or as a result of accumulated feelings of boredom, the effectiveness of cognitive reappraisal might be impaired so that an employee's general level of cognitive reappraisal might not impact much the present job boredom-counterproductive work behavior and job boredom-organizational citizenship behavior relationships. Another possible explanation might be that there is an interplay of motives for employees engaging in counterproductive work behavior and organizational citizenship behavior when bored, such that, even when individuals engage in cognitive reappraisal, their behavioral response to boredom is not substantially affected. For example, if employees view engaging in organizational citizenship behavior as a way to craft their job, or if they view engaging in counterproductive work behavior as a way to retaliate, they may still choose to engage in these behaviors even after reframing their thoughts or their experience of boredom. Future studies may be able to shed more light on these relationships, by examining different situational and personal constructs that can potentially moderate these links.

Finally, our results also extend our knowledge on the extent to which job boredom, organizational citizenship

behavior and counterproductive work behavior vary within and between individuals. In previous studies, the relationships of job boredom with counterproductive work behavior and organizational citizenship behavior were typically studied at the between-person level (e.g., Bruursema et al., 2011; Kim et al., 2021). In fact, we were unable to find a study that examined these relationships at the within-person level. Yet, with ICC values ranging from 0.12 to 0.38, our results clearly show that these constructs vary more within individuals than between individuals. What this means is that employees' experiences and behaviors do not only differ compared to those of other employees, but also compared to their own typical experiences and behaviors, and that such fluctuations happen on a day-to-day basis. This finding is an important one, as it suggests that combining the between- and within-person levels, both in theorizing and analyses, is necessary if the goal is to understand these organizational phenomena better.

Practical implications

As our results suggest, some employees who experience job boredom might engage in more organizational citizenship behaviors while others might limit their organizational citizenship behaviors. Therefore, organizations might benefit by giving employees more freedom to decide how to enrich their job or by increasing the incentives for employees to engage in organizational citizenship behaviors. Caution must be taken, however, not to increase pressure as past research shows that citizenship pressure can lead to negative individual and organizational outcomes (e.g., Bolino et al., 2010; Spanouli & Hofmans, 2016).

The positive link between job boredom and active and passive counterproductive work behaviors demonstrates that both employees and organizations might benefit from designing jobs in a way that does not lead to high levels of job boredom. Possible ways to achieve that would be by offering employees options for job rotation, allowing them to craft their jobs, or increasing their autonomy and task variety (e.g., Fisher, 1993; Harju et al., 2016).

Limitations and future research recommendations

The self-reported measures that were used in our study beget concerns for common method bias. However, other-reported data are not suitable to measure job boredom or cognitive reappraisal, as individuals themselves are the sole proprietors of this information. Moreover, whereas this is not necessarily the case for all forms of counterproductive work behavior and organizational citizenship behavior, meta-analytic studies on these constructs have concluded

that other-reported data do not incrementally contribute over self-reported data (Berry et al., 2012; Carpenter et al., 2013). Thus, the decision to rely solely on self-report measures seems defensible—and is common in experience sampling studies. However, other limitations also exist.

First, even though we have chosen a widely used and validated measure for counterproductive work behavior, this scale did not include items representing more contemporary forms of these behaviors such as cyberloafing or making use of social media (e.g., Mastrangelo et al., 2006; Vitak et al., 2011), and thus counterproductive work behaviors might be under reported in our study. With that said, the main-effect hypotheses pertaining to the relationships of boredom with active and passive counterproductive work behavior were nonetheless supported with the current measure of counterproductive work behavior.

Second, although our sample size was roughly in line with the guidelines for estimating statistical power in multilevel models, we cannot rule out the possibility that our relatively small sample size was responsible for not detecting a significant moderation effect of cognitive reappraisal on the job boredom-counterproductive work behavior link, and on the job boredom-organizational citizenship behavior link.

Third, as is typical in experience sampling studies, the data we collected are correlational in nature. Given the large time scale of our data collection, where participants were asked to report at the end of the day how bored they felt, and how many organizational citizenship behaviors and counterproductive work behaviors they engaged in that day, it is possible to construct different predictions. Therefore, even though we theorize that job boredom leads to counterproductive work behavior and organizational citizenship behavior, and despite the statistical controls we employ in the focal analyses and the sensitivity checks, we cannot rule out the scenario in which counterproductive work behavior and organizational citizenship behavior lead to job boredom.

Fourth, even though our results showed, consistent with our Research Question, that the direction of the within-person relationship between job boredom and organizational citizenship behavior is person-specific, another interpretation to this finding is that organizational citizenship behaviors are normally distributed around no change (i.e., a nil effect of boredom). As such, the results on the relationship of job boredom with organizational citizenship behavior should be interpreted with caution. Finally, while we proposed that employees would engage in two different strategies to deal with feelings of boredom, we did not explicitly test these strategies.

Future research can overcome these limitations by using a bigger sample size and combining different methods, such as using other-reported measures to exclude common method bias, using an experimental design or shorter time lags to enhance causal conclusions, or using a qualitative study to further explore employee motives and strategies in their response to boredom. As each research design comes with its strengths and limitations, combining different methods can help overcome each design's shortcomings.

In terms of future research directions, our understanding of how job boredom influences an employee's daily job experience would benefit from expanding our model to include more outcomes, such as task performance, turnover intentions, or employee well-being. Past research on similar constructs, for example, has shown that daily fluctuations in exhaustion (vs. boredom) are negatively related to in-role performance and organizational citizenship behavior towards the organization, while being positively related with organizational citizenship behavior towards individuals (Halbesleben & Wheeler, 2011). It would thus be interesting to study whether employees who experience job boredom prioritize task performance or whether they engage in counterproductive work behavior or organizational citizenship behavior instead, and how this experience influences other domains of their work and personal life.

Moreover, it would be interesting to examine how social and economic factors contribute to employee experiences of and reactions to job boredom, via constructs such as job insecurity, employability, and overqualification (see for instance Andel et al., 2022; Kim et al., 2021). For example, it may be that, when work is precarious, the relationship between boredom and counterproductive work behavior is attenuated.

Additionally, as cognitive reappraisal did not prove to be an effective coping mechanism in our study, future research can interview employees with the aim of discovering the ways in which they cope with feelings of boredom at work. Past research in different settings has shown that individuals who score high on boredom proneness (that is individuals who tend to frequently and intensely experience boredom) tend to score low on self-control (e.g., Boylan et al., 2021; Isacescu et al., 2017; Wolff et al., 2020) and modes of self-regulation (e.g., Mugon et al., 2018; Struk et al., 2016). It would thus be interesting to study whether these results also hold true in work settings, by testing for example whether employees who experience job boredom engage in actions such as counterproductive work behaviors as a result of poor self-regulation, or whether individuals scoring high

in self-control and low on boredom proneness adopt more constructive coping strategies when feeling bored at work. Game (2007), for example, based on a combination of a survey and critical incident interviews, has concluded that individuals cope with boredom by either using an engagement or a disengagement strategy (or a combination of both). Engagement focused strategies tackle the source of the problem constructively (e.g., looking for ways to improve the task), whereas disengagement focused strategies aim at regulating the emotion (e.g., daydreaming) instead of addressing its cause. Future studies can shed light on which personal and situational characteristics determine which coping strategies employees may choose in response to job boredom and why.

Lastly, boredom is not the only emotion that affects employee behavior; we believe that studies focusing on other emotions such as anger, frustration, or joy might also yield useful insights. To be clear, some of these emotions have already been studied in connection with counterproductive work behavior, however, future research can adopt a more nuanced approach. As counterproductive work behavior and organizational citizenship behavior are composed of a variety of behaviors, it would be interesting to examine whether different emotions influence different behaviors within these constructs, by researching for example whether anger leads to more serious counterproductive work behaviors, such as theft, and anxiety leads to more minor counterproductive work behaviors, such as withdrawal (see for example Spector & Fox, 2002).

Appendix

Study measures

See Tables 2, 3, 4, and 5.

Table 2 Job boredom scale by van Hooff and van Hooft (2014)

Job boredom items
1. Today I thought my work was boring
2. There were long periods of boredom on my job today
3. My job went by slowly today
4. I often got bored with my work today
5. The time seemed to go by slowly when I was at work today

For the purposes of the study, we added the word “today” to all items; Van Hooff and van Hooft (2014) reported a correlation of 0.88 ($p < 0.01$) with Reijseger et al.’s (2013) Boredom Scale

Table 3 Counterproductive Work Behavior Checklist (32 item), from Spector et al. (2006)

Counterproductive work behavior items
1. Purposely wasted your employer’s materials/supplies
2. Purposely did your work incorrectly
3. Came to work late without permission
4. Stayed home from work and said you were sick when you weren’t
5. Purposely damaged a piece of equipment or property
6. Purposely dirtied or littered your place of work
7. Stolen something belonging to your employer
8. Started or continued a damaging or harmful rumor at work
9. Been nasty or rude to a client or customer
10. Purposely worked slowly when things needed to get done
11. Taken a longer break than you were allowed to take
12. Purposely failed to follow instructions
13. Left work earlier than you were allowed to
14. Insulted someone about their job performance
15. Made fun of someone’s personal life
16. Took supplies or tools home without permission
17. Put in to be paid for more hours than you worked
18. Took money from your employer without permission
19. Ignored someone at work
20. Blamed someone at work for error you made
21. Started an argument with someone at work
22. Stole something belonging to someone at work
23. Verbally abused someone at work
24. Made an obscene gesture (the finger) to someone at work
25. Threatened someone at work with violence
26. Threatened someone at work, but not physically
27. Said something obscene to someone at work to make them feel bad
28. Did something to make someone at work look bad
29. Played a mean prank to embarrass someone at work
30. Looked at someone at work’s private mail/property without permission
31. Hit or pushed someone at work
32. Insulted or made fun of someone at work

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Active counterproductive work behavior items: 1, 5–9, 14–32.
Passive counterproductive work behavior items: 2, 10–13. Items excluded from analyses: 3, 4. Each of the above items was preceded by the words “Today, I”

Table 4 Organizational Citizenship Behavior Checklist (OCB-C) from Fox et al. (2012)

Organizational citizenship behavior items

1. Picked up meal for others at work
2. Took time to advise, coach, or mentor a co-worker
3. Helped co-worker learn new skills or shared job knowledge
4. Helped new employees get oriented to the job
5. Lent a compassionate ear when someone had a work problem
6. Lent a compassionate ear when someone had a personal problem
7. Changed vacation schedule, work days, or shifts to accommodate co-worker's needs
8. Offered suggestions to improve how work is done
9. Offered suggestions for improving the work environment
10. Finished something for co-worker who had to leave early
11. Helped a less capable co-worker lift a heavy box or other object
12. Helped a co-worker who had too much to do
13. Volunteered for extra work assignments
14. Took phone messages for absent or busy co-worker
15. Said good things about your employer in front of others
16. Gave up meal and other breaks to complete work
17. Volunteered to help a co-worker deal with a difficult customer, vendor, or co-worker
18. Went out of the way to give co-worker encouragement or express appreciation
19. Decorated, straightened up, or otherwise beautified common work space
20. Defended a co-worker who was being "put-down" or spoken ill of by other co-workers or supervisor

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Each of the above items was preceded by the words "Today, I"

Table 5 Emotional regulation questionnaire by Gross and John (2003)

Cognitive reappraisal items

1. I control my emotions by changing the way I think about the situation I'm in
2. When I want to feel less negative emotion, I change the way I'm thinking about the situation
3. When I want to feel more positive emotion, I change the way I'm thinking about the situation
4. When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about
5. When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about
6. When I'm faced with a stressful situation, I make myself think about it in a way that helps

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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