

Boredom at Work: Proximal and Distal Consequences of Affective Work-Related Boredom

Madelon L. M. van Hooff
Radboud University Nijmegen

Edwin A. J. van Hooff
University of Amsterdam

Boredom is an emotion that occurs regularly at the workplace, with negative consequences for the employee and the organization. It is therefore important to understand why work-related boredom leads to such adverse consequences and what can be done to mitigate its occurrence and its negative consequences. In the present study we proposed a model suggesting that feelings of boredom at work induce immediate affect-based bored behaviors, and that such bored behavior leads to depressive complaints, distress, and counterproductive work behavior. We further posed that job crafting can mitigate work-related boredom and its negative outcomes. Results of a survey study among 189 employees showed that work-related boredom and bored behavior are empirically distinct, though related, constructs. Work-related boredom was positively related to depressive complaints, distress, and counterproductive work behavior, and these associations were fully mediated by bored behavior. Job crafting related negatively to work-related boredom, and attenuated the relationship of work-related boredom with bored behavior. Moreover, the indirect effects of work-related boredom through bored behavior on its outcomes were smaller the more employees engaged in job crafting. This research enhances insight into work-related boredom by showing that boredom as an affective state can be distinguished from its proximal behavioral consequences, and by providing a first onset to obtain insight in moderating and mediating mechanisms that may explain work-related boredom's consequences. It highlights the importance of employees' opportunities to work in jobs that do not cause work-related boredom to develop, and the role of job crafting as a potential intervention tool.

Keywords: boredom, coping, counterproductive work behavior, job crafting, well-being

Feelings of boredom at work are common, with prevalence estimates ranging from a quarter up to 87% of the employees reporting that they feel bored at work at least some times (cf. Fisher, 1993; Mann, 2007; Van der Heijden, Schepers, & Nijssen, 2012; Watt & Hargis, 2010). Research has demonstrated that work-related boredom relates to a variety of negative outcomes such as low effort and performance, job dissatisfaction, absenteeism, turnover intentions, counterproductive work behavior, and work injuries (Bruursema, Kessler, & Spector, 2011; Frone, 1998; Kass, Vodanovich, Stanny, & Taylor, 2001; Reijseger et al., 2013; Spector et al., 2006). Given these negative effects, it is important to understand why work-related boredom leads to such adverse consequences and what can be done to mitigate these.

With the present study, we aim to extend previous research by proposing and testing a model of work-related boredom outlining the

underlying psychological mediating and moderating mechanisms that explain its negative effects. Our model is guided by Spector and Fox's (2002) emotion-centered model of voluntary work behavior, which poses that emotions are central in explaining behavior at work. Emotions develop as a consequence of appraisals based on the combination of employees' personality and their work environment. Negative emotions elicit coping behaviors that are aimed at reducing this negativity. Spector and Fox (2002) specifically consider counterproductive work behavior (CWB) as a coping mechanism to deal with negative emotions. In line with this idea, we assume that work-related boredom—as a negative emotion—positively relates to CWB. Based on affective events theory (Weiss & Cropanzano, 1996), we additionally argue that this association is mediated by specific affect-based behaviors that we will label bored behavior. Furthermore, and based on Spector and Fox's (2002) proposition that behavior may also affect employees' emotions, we pose that bored behavior will result in affectively laden outcomes, such as depressive complaints and distress. Finally, we examine job crafting as a type of functional coping behavior, that may reduce work-related boredom directly, and may affect the extent to which the experience of work-related boredom translates into both proximal (i.e., bored behavior) and more distal negative consequences. Figure 1 presents our overarching conceptual model.

Work-Related Boredom

Work-related boredom is characterized by a lack of interest and difficulty concentrating (Fisher, 1993), and can be defined as a

This document is copyrighted by the American Psychological Association or one of its allied publishers. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

This article was published Online First June 2, 2014.

Madelon L. M. van Hooff, Behavioural Science Institute, Radboud University Nijmegen; Edwin A. J. van Hooff, Work and Organizational Psychology, University of Amsterdam.

This work was supported by the FMG-UvA Research Priority Grant on Affect Regulation. A previous version of this article was presented at the 2012 Annual Meeting of the Academy of Management, Boston.

Correspondence concerning this article should be addressed to Madelon L. M. van Hooff, Behavioural Science Institute, Radboud University, PO Box 9104, 6500 HE Nijmegen, The Netherlands. E-mail: m.vanhooff@psych.ru.nl

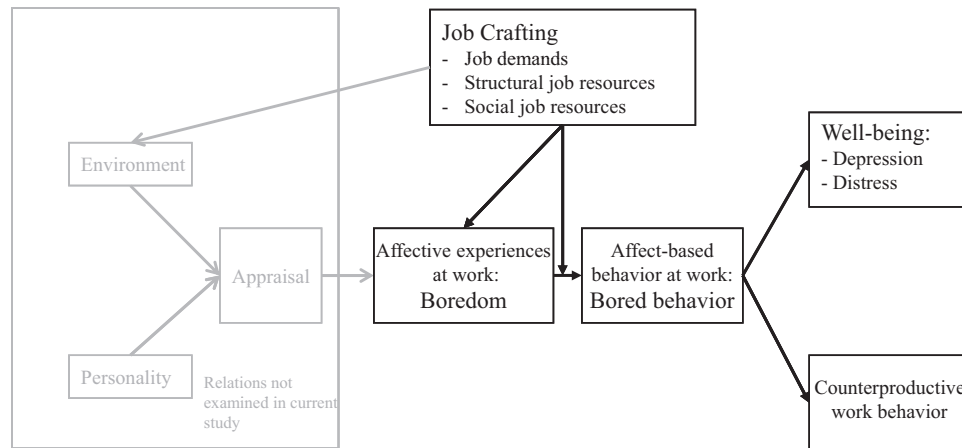


Figure 1. Overview of the theoretical model.

negative (i.e., unpleasant, dissatisfying) and often deactivating (i.e., low arousal) activity-related emotion, implying that the activity (e.g., the work task) acquires negative intrinsic value (Fisher, 1993; Mikulas & Vodanovich, 1993; Pekrun, Goetz, Daniels, Stupnisky, & Perry, 2010). It is distinct from other negative affective states as it makes people feel unchallenged, perceiving the situation as meaningless (Van Tilburg & Igou, 2012). Research on work-related boredom has started in the beginning of the previous century (e.g., Münsterberg, 1913; Wyatt, Langdon, & Stock, 1937), and has generally shown that causes of work-related boredom relate to characteristics of both the individual and the work situation (see Figure 1). Personality traits that have been associated with the experience of boredom are, for example, extraversion and boredom proneness. Regarding work characteristics, it has been shown that too little work, monotony, repetition, and underutilization of skills may induce work-related boredom (Fisher, 1993; Fisher, in press; Loukidou, Loan-Clarke, & Daniels, 2009; Smith, 1981).

Previous research on boredom in work-related contexts mostly focused on boredom proneness as indicator of boredom (see Vodanovich, 2003 for a review). Although it can be assumed that high boredom prone individuals are more likely to experience boredom in a specific situation than less boredom prone individuals, levels of boredom proneness do not by definition give an indication of actual levels of experienced boredom in a certain situation. Kass et al. (2001) indeed report only a moderate correlation between boredom proneness and state boredom. Thus, because work-related boredom as a state and boredom proneness as a trait represent different aspects of boredom, to obtain insight in work-related boredom as a state, it should be measured as such. Although some studies incorporated state measures of work-related boredom, these scales tend to confound boredom with its potential causes (e.g., work characteristics) or consequences (e.g., affective responses; see Van der Heijden et al., 2012 for an overview of how boredom is measured). For example, Lee's (1986) scale asks respondents to answer questions such as *Does the job seem repetitive?*, and Van der Heijden et al.'s (2012) measure includes items such as *Is there insufficient work to do?* and *Is there variety in your work?* These items refer to job characteristics such as repetitiveness, work load, and task variety, which may be considered causes

rather than indicators of work-related boredom. For example repetitiveness can, but does not necessarily have to, result in feelings of work-related boredom, as not all employees will become bored as a result of repetitive work (e.g., routinization may even promote creativity; Ohly, Sonnentag, & Pluntke, 2006). Regarding potential consequences, Lee's (1986) measure, for example, includes the item *Do you become irritable on the job?* This item refers to feelings of irritability, which may be caused by boredom, but also by other aspects of the work situation, such as stress resulting from high work pressure or difficult interactions with colleagues.

Given this current situation regarding the measurement and conceptualization of work-related boredom (i.e., often measured as a trait instead of a state, confounding with causes and consequences), we argue that it is first important to rely on a clear definition of work-related boredom and to measure it without confounding it with its possible causes and consequences. In this paper we follow Fisher (1993) and Pekrun and colleagues (2010) by defining work-related boredom as a negative, deactivating emotional state experienced while performing work-related activities, and thus, by defining it as distinct from its possible causes and consequences, or from its trait-like counterpart boredom proneness.

Bored Behavior

Emotions are associated with certain immediate affect-based behavioral tendencies (e.g., affective events theory; Weiss & Cropanzano, 1996), in such a way that they motivate behavior that will reduce negative feelings and enhance positive feelings (Spector & Fox, 2002). Likewise, we pose that the emotion of work-related boredom evokes immediate boredom-based behaviors. As work-related boredom is a negative emotional experience, such behaviors will likely be aimed at reducing this negativity, because, in general, people are motivated to reduce negative affect (cf. Carver, 2004). An easy way to alleviate the feeling of boredom would be to quit the boring activity (Berlyne, 1960), or to engage in other, nonwork related activities as a coping response (Fisher, 1993; Van der Heijden et al., 2012). Individuals may also try to change their behavior while staying on the same (boring) task, for example, by varying the pace or method of work (Runcie, 1980). Although this

change in work behavior may sometimes increase productivity, it is likely not functional in obtaining one's work goals. We refer to those immediate adverse behaviors as bored behavior, which we define as "specific affect-based withdrawal behaviors of employees at work, which are not directly functional in obtaining one's work goals." Examples of bored behavior include working slowly and spending time on nonwork related activities. Some preliminary empirical support for the need to differentiate between the experience of work-related boredom and bored behavior can be found in the work by Reijseger et al. (2013), who found a specific behavioral factor in their initial work-related boredom measure, and Van der Heijden et al. (2012) who found work-related boredom to be different from, but positively related to distracting behaviors. We therefore hypothesize that *work-related boredom is positively related to, but distinct from bored behavior (Hypothesis 1)*.

Consequences of Boredom

Previous research has indicated that work-related boredom is related to various adverse outcomes for employee well-being and performance. We aimed to disentangle *why* these relations exist, positing that bored behavior acts as a mediator explaining these relations.

Distress and Depressive Complaints

Previous research suggested that boredom leads to increased levels of distress and depression (Game, 2007; Sommers & Vodanovich, 2000; Wiesner, Windle & Freeman, 2005). However, it remains unclear why boredom has such adverse consequences. To increase our understanding of work-related boredom and its consequences, it is vital to obtain insight in the underlying process that explains these associations. Work-related boredom is a transient affective state, and fades away when one is no longer performing the boredom evoking activity. In contrast, distress and depressive complaints are not domain specific and refer to employees' generally experienced affective states. This leads to the question how a transient affective state develops into more stable indicators of decreased well-being.

Integrating affective events theory with Folkman and Lazarus's (1988) work, we pose that bored behavior functions as a mediator in this relationship. Specifically, negative emotions such as work-related boredom induce immediate, and often rather automatic actions (e.g., bored behavior), aimed at coping with the negative emotion. However, such immediate affect-based responses likely are rather ineffective in coping with work-related boredom. First, because boredom is associated with a sense of meaninglessness (Van Tilburg & Igou, 2011, 2012), bored behavior can be considered meaningless behavior, that is not functional in obtaining one's work goals. Second, bored behavior is not likely to reduce work-related boredom, as it does not change the conditions that cause this affective state to develop. Following Folkman and Lazarus (1988), we assume that this ineffective coping process leads to an unfavorable reappraisal of the environment, which evokes other adverse emotional outcomes, such as distress and depressive complaints. This can be further understood from the assumptions of control theory (Carver, 2004; Carver & Scheier, 1990), which poses that if individuals sense that—despite their efforts—goal

approach (i.e., finishing one's work tasks, or reducing work-related boredom) develops slower than expected, this will result in negative affect. The tone of this negative affect will vary depending on the size of the discrepancy between actual and desired goal progress. At first, inadequate or no progress will result in frustration, irritation, and anger (i.e., distress-related responses), but if eventually it is sensed that the goal will not be attained, feelings of depression and sadness are supposed to develop (Carver, 2004). Related ideas can be found in the literature on stress and depression, in which lack of control and 'learned helplessness' have been considered explanatory factors in the development of stress (Sells, 1970) and depression (Abramson, Seligman, & Teasdale, 1978). Bored behavior, given that it is not functional in changing employees' negatively evaluated situation or in attaining their work goals, may evoke feelings of lack of control and helplessness and consequently result in stress and depressive complaints. Therefore, we pose that *work-related boredom will relate positively to depressive complaints and distress and these associations are mediated by bored behavior (Hypothesis 2)*.

Counterproductive Work Behavior

Besides being associated with health-related consequences for the employee, work-related boredom may also have negative effects for the organization. In this study, we focus on CWB, which has been defined as behavior that harms or intends to harm organizations and/or organizational stakeholders (Spector & Fox, 2005). Previous research reported a positive association between work-related boredom and CWB (Bruursema et al., 2011; Spector et al., 2006). This association can be understood from Spector and Fox's (2002) emotion-centered model of voluntary work behavior. In this model, it is assumed that negative emotions produce action tendencies aimed at reducing the negative emotional state. Engaging in CWB may lower negative emotions because such behaviors may help employees to passively and indirectly cope with the emotion (e.g., by stealing company equipment), or to actively and directly attack the agent of the situation (e.g., by intimidation and threats).

In the present study we follow Spector and Fox (2002) in proposing that work-related boredom positively relates to CWB, but additionally argue that this relation (at least partly) develops as a result of bored behavior that is taking increasingly severe forms. Namely, boredom is a moderately negative emotion (e.g., Warr, 1990), which makes it unlikely to immediately result in rather extreme types of behavior such as CWB. We therefore pose that employees first exhibit less dysfunctional behaviors, which we labeled bored behaviors. When these behaviors persist for a longer period of time, the relatively 'harmless' bored behaviors can gradually spiral into the more severe CWB's, because employees will become increasingly frustrated by their undesirable boring situation (Carver, 2004). This negative affective experience may eventually evoke CWB to cope with these more extreme negative affective experiences. Thus, *work-related boredom will relate positively to counterproductive work behavior, and this association is mediated by bored behavior (Hypothesis 3)*.

The Role of Job Crafting

Given the potential negative consequences of work-related boredom, it is important to prevent or decrease this negative affective

state and/or to reduce its negative consequences. As work characteristics play a pivotal role in the development of work-related boredom (cf. Fisher, 1993; Spector & Fox, 2002), changing unfavorable work characteristics would be a valuable starting point. We therefore focus on ‘job crafting’ as a coping behavior that employees can engage in to change their work characteristics. We propose that job crafting not only decreases work-related boredom, but may also mitigate its associations with proximal (i.e., bored behavior) and—indirectly—distal (i.e., depressive complaints, distress, and CWB) outcomes (see Figure 1).

Job crafting refers to “changes that employees make to balance their job demands and job resources with their personal abilities and needs” (Tims, Bakker, & Derks, 2012, p. 174). It refers to a process in which employees change the tasks they do at work and/or the people they interact with in their job, to improve their person-job fit and work motivation (Tims et al., 2012). Unlike other efforts to change jobs, job crafting entails changes that are initiated by employees themselves instead of by their supervisors. Although job crafting views employees as the actors in changing a boring work-situation, it of course does not discharge employers from their responsibility to provide employees with well-designed jobs.

Tims et al. (2012) distinguish between job crafting activities that aim to change job demands and activities that aim to change job resources, describing four types of job crafting activities employees can perform. *Increasing challenging job demands* refers to increasing those job demands that stimulate employees to develop their knowledge and skills or to attain more difficult goals (e.g., starting new work projects). *Decreasing hindering job demands* entails the lowering of job demands when employees feel that their demands have become overwhelming (e.g., minimizing contact with people whose expectations are unrealistic). *Increasing structural job resources* implies that employees take actions to gain more responsibility and/or knowledge about the job (e.g., learning new things at work). *Increasing social resources* refers to acts such as obtaining satisfactory levels of interaction and asking for feedback and/or coaching (e.g., asking colleagues for advice). Job crafting differs from job control, as job control is neither a necessary nor a sufficient condition for crafting one’s job. That is, “even in low-autonomy jobs, employees can create new domains for mastery and shape facets of job tasks to take control over some aspect of the work” (Wrzesniewski & Dutton, 2001, p. 181). Also, having high job control does not by definition imply that employees use this control to craft their jobs.

Recent work by Reijseger et al. (2013) applied the Job Demands-Resources Model (JD-R; Schaufeli & Bakker, 2004; Bakker & Demerouti, 2007) to work-related boredom, concluding that job demands and resources relate negatively to boredom. Extending this work, we pose that employees who engage in job crafting activities aimed at increasing challenging job demands, increasing structural job resources, or increasing social resources will experience less work-related boredom, because these activities make job-related tasks and/or social interactions more interesting, challenging, and satisfactory. Furthermore, Spector and Fox (2002) argue that negative emotions at work such as boredom develop as a function of an unfavorable work environment. Job crafting is directed at improving the work environment and therefore likely reduces work-related boredom. The job crafting dimension ‘decreasing hindering job demands’ was not included in our

study, because this type of job crafting is unlikely to be used as a coping mechanism to decrease work-related boredom. As job crafting aims at obtaining an optimal person-job fit, and as work-related boredom refers to an imbalance between person and job attributable to *lack of demands*, decreasing demands even further unlikely reduces boredom. Thus, we expect that the *job crafting dimensions of (a) increasing structural job resources, (b) increasing social job resources, and (c) increasing challenging job demands are negatively related to work-related boredom (Hypothesis 4)*.

Furthermore, in case employees do experience work-related boredom, those who engage in job crafting activities likely will be displaying fewer bored behaviors than those who do not engage in job crafting. Thus, we argue that the strength of the association between work-related boredom and bored behavior depends on employees’ job crafting activities as a coping mechanism. Specifically, we pose that the association between work-related boredom and bored behavior will be smaller for employees who are capable of changing their work environment. That is, these employees will be more likely to engage in other more interesting and fulfilling and meaningful goal-directed tasks when feeling bored, rather than resorting to relatively meaningless bored behaviors. Thus, *the job crafting dimensions (a) increasing structural job resources, (b) increasing social job resources, and (c) increasing challenging job demands moderate the work-related boredom - bored behavior relationship, in the sense that these will attenuate this relationship (Hypothesis 5)*.

So far, we have argued that work-related boredom has adverse consequences, and that these associations are mediated by bored behavior (Hypothesis 2–3). We also posed that job crafting moderates the relation between work-related boredom and bored behavior (Hypothesis 5). Based on the rationales for these hypotheses, it can be expected that the indirect association of work-related boredom with depressive complaints, distress and CWB through bored behavior is weaker if employees report high levels of job crafting. Thus, *the indirect effect of work-related boredom through bored behavior on (a) depressive complaints, (b) distress, and (c) CWB is smaller if employees report high levels of job crafting (i.e., increasing job demands, increasing structural job resources, increasing social job resources) than if they report low levels of job crafting (Hypothesis 6)*.

Method

Participants and Procedures

Data were collected in The Netherlands, by means of an Internet-based survey among employees with various occupations (e.g., teachers, secretaries, project managers, advisors, IT-specialists). Participants were located via the social and professional networks of two research assistants involved in the study. These networks consisted of personal and professional contacts of the two research assistants. Employed people in these networks received an e-mail with the request to participate, which contained a link to a Web-based questionnaire. Data collection took place in two waves: in a first questionnaire background information was assessed (age, sex, occupation, boredom susceptibility) and in a second questionnaire a month later, the core study variables were assessed. Data of the two questionnaires were merged based on

participants' e-mail addresses, which were deleted from the dataset after the merge. Confidentiality of participants' responses was guaranteed. Of the 263 participants who completed the first questionnaire, 200 (76%) also completed the second questionnaire. However, data of 11 of them were removed because they worked fewer than 20 hours per week. Our final sample therefore included 189 employees, with 55% being female, a mean age of 39.61 years ($SD = 12.73$), and 84.7% with a bachelor/master degree. Participants worked on average 35.07 hours per week ($SD = 7.73$).

Measures

Work-related boredom. We used Lee's (1986) boredom questionnaire to measure work-related boredom, but consistent with the definition of boredom (Fisher, 1993; Mikulas & Vodanovich, 1993; Pekrun et al., 2010) our scale was based on only those items that tap the affective and cognitive aspects of work-related boredom as an emotional state. Items that confounded boredom and its potential causes (e.g., *Is your work monotonous?*) or consequences (e.g., *Do you become irritable on the job?*) were omitted. The items we used were translated into Dutch by the authors of the present study. Translations were made based on the original English items and construct definition, and were carefully checked against the original items, keeping the construct definition in mind. Items were additionally rephrased from questions into statements, and were rated on a 5-point scale, ranging from 1 ([almost] never) to 5 ([almost] always), with higher scores indicating higher levels of work-related boredom. The specific items read as follows: *I think my work is boring*, *There are long periods or boredom on my job*, *My job goes by slowly*, *I often get bored with my work*, and *The time seems to go by slowly when I'm at work* ($\alpha = .91$). Supporting the validity of our measure, it was found to correlate substantially ($r = .88, p < .01$) with Reijseger et al.'s (2013) Boredom Scale.

Bored behavior. Bored behavior was measured with six items in Dutch that were developed by the authors based on our definition of bored behavior (i.e., "specific affect-based withdrawal behaviors of employees at work, which are not directly functional in obtaining one's work goals") and examples of bored behavior in the literature (Fisher, 1993; Runcie, 1980; Van der Heijden et al., 2012). Items were written to specifically refer to behaviors and rated on a 5-point scale (1 = [almost] never; 5 = [almost] always) with higher scores reflecting higher levels of bored behavior. The items used are *I work slowly*, *I take long breaks*, *I pretend to be busy*, *I am daydreaming*, *I am involved in other, non-work-related activities*, and *I am busy with activities to kill the time* ($\alpha = .81$).

Depressive complaints. We used the 11-item short Dutch version (Bouma, Ranchor, Sanderma, & van Sonderen, 1995) of the Center for Epidemiologic Studies Depression Scale (CES-D; Kohout, Berkman, Evans & Cornoni-Huntley, 1993; Radloff, 1977) to measure depressive complaints. Participants were asked on a 4-point scale (1 = [almost] never, 4 = [almost] always) to indicate how often they experienced certain feelings and behaviors during the past week, for example, *I felt sad* and *I felt lonely* ($\alpha = .74$).

Distress. Distress was measured with the Dutch translation (de Beurs, Van Dyck, Marquenie, Lange, & Blonk, 2001) of the stress subscale of the Depression Anxiety Stress Scales (DASS; e.g., Crawford & Henry, 2003). Participants rated nine items on a

4-point scale with respect to the past week (1 = [almost] never, 4 = [almost] always), for example, *I found it difficult to relax* and *I tended to overreact to situations* ($\alpha = .87$).

Counterproductive work behavior. Counterproductive work behavior was measured by the 10-item scale of Kelloway, Loughlin, Barling, and Nault (2002), which was based on the behaviors identified by Robinson and Bennett (1995). Based on the original English items and construct definition, items were translated in Dutch by the authors of the present study. Participants indicated for each of 10 statements on a 5-point scale how often they performed a certain type of behavior in their current job (1 = never, 5 = very often), for example, *Blamed your coworkers for your mistakes* and *Taken company equipment or merchandise* ($\alpha = .65$).

Job crafting. The three dimensions of job crafting (i.e., *increasing structural job resources*, *increasing social job resources*, and *increasing challenging job demands*) were measured by the Dutch scale developed by Tims et al. (2012). The dimensions were measured with five items each, rated on a 5-point scale (1 = never, 5 = very often), and higher scores indicate higher levels of job crafting. Examples are *I try to learn new things at work* (*Increasing structural job resources*; $\alpha = .75$) *I ask colleagues for advice* (*increasing social job resources* $\alpha = .83$) and *When there is not much to do at work, I see it as a chance to start new projects* (*increasing challenging job demands* $\alpha = .77$).

Control variables. To reduce the risk of finding spurious associations between the study variables, we included age (in years), weekly working hours, sex (0 = male, 1 = female), and boredom susceptibility as control variables in our questionnaires. Boredom susceptibility was included to make sure that associations found in this study indeed reflected employees' state-levels of boredom, irrespective of their general tendency to be easily bored and was measured with the 11-item boredom susceptibility subscale of the Dutch version (Feij & Van Zuilten, 1984) of Zuckerman, Buchsbaum, and Murphy's (1980) sensation-seeking scale. All items were rated on a 9-point scale (1 = extremely disagree, 9 = extremely agree) and higher scores reflect higher levels of boredom susceptibility. A sample item is *I can't stand people who make a dull impression* ($\alpha = .76$).

Results

Table 1 shows means, standard deviations, and correlations of the study variables. Mean levels and standard deviations of work-related boredom ($M = 1.40, SD = 0.55$) and bored behavior ($M = 1.50, SD = 0.49$) were relatively low. Work-related boredom and bored behavior were highly correlated ($r = .73, p < .001$). Regarding the control variables, boredom susceptibility was not significantly related to work-related boredom ($r = .10, p = .16$), but was positively related to bored behavior ($r = .17, p = .02$). Age was negatively related to both work-related boredom ($r = -.30, p < .01$) and bored behavior ($r = -.29, p < .01$) as well as to distress ($r = -.14, p < .05$). As sex and working hours were not significantly related to work-related boredom and/or bored behavior, these variables were not included in further analyses.

Both work-related boredom and bored behavior were negatively related to increasing structural job resources ($r = -.30, p < .01$, and $r = -.24, p < .01$, respectively) and increasing challenging job demands ($r = -.20, p < .01$, and $r = -.19, p < .05$,

Table 1
Means, Standard Deviations, and Correlations of the Variables Under Study

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Sex (0 = male, 1 = female)			1										
2. Age	39.61	12.73	.10	1									
3. Working hours	35.07	7.73	-.29**	-.02	1								
4. Boredom susceptibility	4.79	0.85	-.08	-.03	.01	1							
5. Increasing structural job resources	3.66	0.66	.20**	.08	.15*	.09	1						
6. Increasing social job resources	2.50	0.72	.07	-.14 [†]	.06	-.01	.35**	1					
7. Increasing challenging job demands	2.88	0.74	.14*	.03	.25**	.12 [†]	.67**	.33**	1				
8. Work-related boredom	1.40	0.55	-.12 [†]	-.30**	-.10	.10	-.30**	-.10	-.20**	1			
9. Bored behavior	1.50	0.49	-.14 [†]	-.29**	-.07	.17*	-.24**	.01	-.19**	.73**	1		
10. Depressive complaints	1.49	0.31	.05	-.11	-.08	.11	-.13 [†]	.08	-.07	.27**	.32**	1	
11. Distress	1.44	0.42	.12	-.14*	-.06	.08	-.05	.06	-.06	.19**	.28**	.70**	1
12. CWB	1.27	0.22	-.07	-.11	-.13 [†]	.05	-.14 [†]	-.01	-.09	.28**	.44**	.20**	.30**

Note. *n* = 189.

[†] *p* < .10. * *p* < .05. ** *p* < .01.

respectively), but not significantly related to increasing social job resources ($r = -.10, p = .16$, and $r = .01, p = .85$, respectively). Finally, both work-related boredom and bored behavior were positively related to depressive complaints, distress, and counterproductive work behavior (work-related boredom: $r = .27, p < .01$, $r = .19, p < .01$, and $r = .28, p < .01$, respectively; bored behavior: $r = .32, p < .01$, $r = .28, p < .01$, and $r = .44, p < .01$, respectively).

Although bored behavior and counterproductive work behavior can be distinguished conceptually, we conducted a confirmatory factor analysis to examine whether these could also be considered distinct constructs empirically. Because of the skewness of the distribution of the items of both bored behavior and counterproductive work behavior (i.e., most participants scored 1 or 2 on these items), empirically these could not be considered continuous. We therefore used the Mplus 5 statistical software package to conduct a confirmatory factor analysis of categorical data. Results showed that a two-factor solution, CFI = .84, TLI = .86, and WRMR = 1.30, fitted the data better than a one-factor solution, CFI = .79, TLI = .83, and WRMR = 1.42, indicating that bored behavior and counterproductive work behavior are also distinct empirically.

Work-Related Boredom and Bored Behavior (Hypothesis 1)

To examine whether work-related boredom and bored behavior are distinct though related constructs, we conducted a confirmatory factor analysis and a regression analysis. Again, we used the Mplus 5 statistical software package to conduct a confirmatory factor analysis of categorical data, because of the skewness of the distribution of the items of both work-related boredom and bored behavior (i.e., most participants scored 1 or 2 on these items). Because of the estimation processes used in this specific type of factor analysis, chi-square difference tests cannot be computed (Muthén & Muthén, 2010) and, thus, we used other fit indices: Comparative Fit Index (CFI), Tucker-Lewis index (TLI), and Weighted Root Mean Square Residual (WRMR). Values above .90 (CFI and TLI; Bentler & Bonett, 1980; Bollen, 1989) or below 0.90 (WRMR; Yu, 2002) are indicative of a good model fit. Two models were compared. The first model, in which all items (i.e.,

the five items measuring work-related boredom and the six items measuring bored behavior) were forced to load on one factor fitted the data reasonably well, CFI = .96, TLI = .98, and WRMR = 1.11. In the second model, two factors were specified, one depicting work-related boredom and one depicting bored behavior. As this model provided a better fit, CFI = .97, TLI = .99, and WRMR = 0.93, we concluded that work-related boredom and bored behavior can be empirically distinguished.

Second, to examine the relationship between work-related boredom and bored behavior, we conducted a hierarchical regression analysis with bored behavior as dependent variable. In the first step, age and boredom susceptibility were included and in the second step work-related boredom was added. Results are presented in Table 2, which shows that, controlling for age and boredom susceptibility, work-related boredom was positively related to bored behavior. Thus, in support of Hypothesis 1 (which posed that work-related boredom and bored behavior are empirically distinct, but related constructs), results of the confirmatory factor analysis and the regression analysis showed that work-related boredom and bored behavior were empirically distinct but positively related constructs.

Bored Behavior as a Mediator Between Work-Related Boredom and Depressive Complaints, Distress, and Counterproductive Work Behavior (Hypotheses 2–3)

To test whether bored behavior mediated the relationship of work-related boredom with, respectively, depressive complaints, distress (Hypothesis 2), and counterproductive work behavior (Hypothesis 3), we employed the bootstrapping methodology as recommended by Preacher and Hayes (2008) and examined whether there was a significant indirect effect of work-related boredom on each of our outcome measures through bored behavior (controlling for age and boredom susceptibility). Results of these analyses using 10,000 bootstrapping samples showed that these indirect effects of work-related boredom through bored behavior on our outcome measures were positive and significant for distress (bootstrapping estimate = .15; 95% CI between .04 and .32), depressive complaints (bootstrapping estimate = .10; 95% CI between .01 and .24), and CWB (bootstrapping estimate = .14; 95% CI between .08 and .22). These analyses also revealed that,

Table 2

Regression Analyses Examining the Relationships Between Work-Related Boredom and Bored Behavior and the Moderating Effects of Job Crafting in the Relationship Between Work-Related Boredom and Bored Behavior

	Bored behavior		
	ΔR^2	R^2	β
Age		.11**	-.28**
Boredom susceptibility			.16*
Age	.44**	.55**	-.08
Boredom susceptibility			.09
Work-related boredom			.70**

	Increasing structural job resources			Increasing social job resources			Increasing challenging job demands		
	ΔR^2	R^2	β	ΔR^2	R^2	β	ΔR^2	R^2	β
Age	.00	.55**	-.08	.01	.56**	-.06	.00	.56**	-.08
Boredom susceptibility			.10			.09			.10*
Work-related boredom			.69**			.72**			.69**
Job crafting			-.03			.08			-.06
Age	.05**	.60**	-.07	.01	.57**	-.05	.04**	.60**	-.05
Boredom susceptibility			.06			.10*			.08
Work-related boredom			.66**			.75**			.68**
Job crafting			.02			.07			-.04
Work-related boredom \times Job crafting			-.24**			.10			-.21**

Note. $n = 189$.

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

when bored behavior was included in the analyses, there was no direct significant association between work-related boredom and the outcomes measures (Bs .05, $p = .41$ for depressive complaints, $-.03$ $p = .67$ for distress, and $-.04$ $p = .35$ for CWB), indicating that bored behavior fully mediated the associations between work-related boredom and each of the outcome measures. Altogether, these results support Hypotheses 2 and 3, which predicted bored behavior to mediate the relationships between work-related boredom and depressive complaints, distress, and CWB.

Job Crafting, Work-Related Boredom, and Bored Behavior (Hypotheses 4–6)

Three hierarchical regression analyses were conducted to test if each of the three types of job crafting relates negatively to work-related boredom (Hypothesis 4). For each type of job crafting (i.e., increasing structural job resources, increasing social job resources, and increasing challenging job demands) analyses were conducted in two steps: In the first step age and boredom susceptibility were included, and in the second step the job crafting dimension under study was added to the model. As shown in Table 3, all three forms of job crafting were negatively related to work-related boredom (Hypothesis 4a, 4b, and 4c supported). Additionally, to obtain insight in the unique effects of each of the job crafting types, we conducted a regression analysis in which all three dimensions were included simultaneously (controlling for age and boredom susceptibility). In this analysis ($R^2 = .18$, $p < .01$), only the effect of increasing structural job resources reached significance ($\beta = -.27$, $p < .01$), whereas those of increasing challenging job demands ($\beta = -.01$, $p = .91$) and increasing social job resources ($\beta = -.04$, $p = .55$) did not. This suggests that increasing

structural job resources is the most powerful type of job crafting to combat work-related boredom.

To examine Hypothesis 5, which stated that job crafting moderates the relationship between work-related boredom and bored behavior, three hierarchical regression analyses were conducted. In each analysis, first the job crafting dimension under study was added to the model that examined the relationship between work-related boredom and bored behavior. In a second step the interaction between work-related boredom and this job crafting dimen-

Table 3

Regression Analyses Examining the Relationships Between Job Crafting and Work-Related Boredom

	Work-related boredom		
	ΔR^2	R^2	β
Age		.10	-.29**
Boredom susceptibility			.09
Age	.08**	.18	-.27**
Boredom susceptibility			.12
Increasing structural job resources			-.29**
Age	.02*	.12	-.31**
Boredom susceptibility			.09
Increasing social job resources			-.15*
Age	.04**	.14	-.29**
Boredom susceptibility			.12
Increasing challenging job demands			-.20**

Note. $n = 189$.

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

sion was included, using mean-centered scores in order to avoid problems of multicollinearity (cf. Aiken & West, 1991). As presented in Table 2, there were significant Work-related boredom \times Job crafting interactions for increasing structural job resources and for increasing challenging job demands. Simple slope analyses of the interaction effects (not presented in the table) showed that—in line with our expectations—the association between work-related boredom and bored behavior was smaller when levels of job crafting were relatively high (i.e., one standard deviation above its mean score: increasing structural job resources: $\beta = .45, p < .05$; increasing job challenging demands: $\beta = .38, p < .05$) compared with when levels of job crafting were relatively low (i.e., one standard deviation below its mean score: increasing structural job resources: $\beta = .82, p < .01$; increasing job challenging demands: $\beta = .91, p < .01$), which provides support for Hypothesis 5a and 5c. A graphical representation of these effects can be found in Figures 2 and 3. No significant interaction was found for increasing social job resources (Hypothesis 5b not supported).

Moderation of the Indirect Relationship Between Work-Related Boredom and the Outcome Variables (Hypothesis 6)

To examine whether the indirect relation of work-related boredom through bored behavior with depressive complaints, distress, and CWB is smaller for employees high on job crafting than for those low on job crafting, we followed the guidelines of Hayes (2013) for testing moderated mediation. We only focused on increasing structural job resources and increasing challenging job demands, though, as increasing social job resources did not moderate the association between work-related boredom and bored behavior. Thus, in total, we conducted six analyses (for each combination of the two types of job crafting and three outcomes of

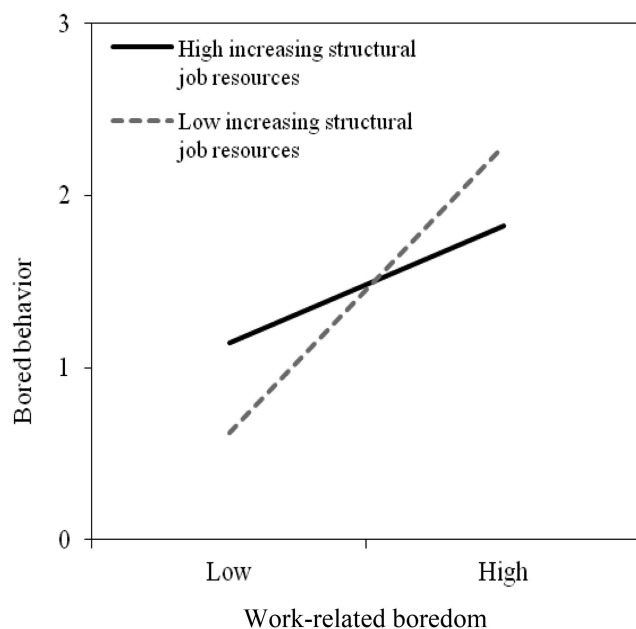


Figure 2. Interaction between work-related boredom and increasing structural job resources.



Figure 3. Interaction between work-related boredom and increasing challenging job demands.

work-related boredom). Each analysis was conducted with 10,000 bootstrapping samples, and effects were computed for values of the moderator variable one standard deviations above and below the mean.

As displayed in Table 4 the indirect effects of work-related boredom through bored behavior on distress (H6b) and CWB (H6c) were smaller when employees report higher levels of increasing challenging job demands than when they report lower levels of this type of job crafting. A similar pattern of results was observed for high versus low levels of increasing structural job resources. The size of the indirect effect of work-related boredom on depressive complaints (H6a) did not vary according to levels of increasing challenging job demands or increasing structural job resources.

These findings indicate that job crafting in terms of increasing challenging job demands and structural job resources reduces the associations of work-related boredom with distress and CWB, because it reduces the extent to which employees resort to bored behavior. Based on the results, Hypothesis 6b and 6c are partially supported (for increasing structural job resources and challenging job demands, and not for increasing social job resources). Hypothesis 6a was not supported.

Discussion

Based on Spector and Fox's (2002) emotion-focused model of voluntary work behavior and affective events theory (Weiss & Cropanzano, 1996), we aimed to uncover the mechanism by which feelings of boredom at the workplace result in negative outcomes such as depressive complaints, distress, and CWB. We found that work-related boredom strongly relates to displays of bored behavior, and that bored behavior explained why work-related boredom is related to increased levels of depressive complaints, distress, and

Table 4

Results of Moderated Mediation Analyses Examining Whether Job Crafting Moderates the Association Between Work-Related Boredom and Distress, Depressive Complaints, and Counterproductive Work Behavior Through Work-Related Boredom

	Increasing challenging job demands				Increasing structural job resources			
	Low	95% CI	High	95% CI	Low	95% CI	High	95% CI
Distress	.19	.04 to .36	.11	.01 to .27	.19	.04 to .36	.10	.02 to .22
Depressive complaints	.12	.00 to .27	.07	-.01 to .20	.12	.00 to .27	.07	.00 to .16
CWB	.17	.11 to .26	.11	.05 to .20	.17	.11 to .25	.10	.05 to .18

CWB. Lastly, job crafting was found to alleviate the negative effects of work-related boredom, such that increasing challenging job demands and structural job resources weakens the extent to which feelings of boredom translate in bored behavior, resulting in less distress and CWB.

Major Findings and Theoretical Implications

Our results contribute to and extend prior theorizing and research on boredom in three ways. First, many previous studies on boredom at work did not include explicit measures of the actual experience of work-related boredom, failed to differentiate between trait and state boredom, or confounded boredom with its causes and/or consequences (see for exceptions Bruursema et al., 2011; Van Tilburg & Igou, 2012; Reijseger et al., 2013). In the present study we therefore explicitly operationalized work-related boredom according to its definition as a negative, deactivating emotional state experienced while performing work-related activities, and distinguished boredom from its conceptually related antecedents and consequences. Furthermore, we advanced theory on boredom by distinguishing work-related boredom as an affective experience from its immediate behavioral consequences, that is, bored behavior. The distinction between the affective state of boredom and bored behavior is valuable because bored behavior was found to explain why feelings of boredom may have negative consequences.

As a second contribution, we found that the relationships of work-related boredom with distress, depressive complaints, and CWB are fully mediated by bored behavior. These findings extend previous theorizing and research on the consequences of boredom (e.g., Fisher, 1993; Game, 2007; Sommers & Vodanovich, 2000; Spector et al., 2006; Wiesner et al., 2005) by suggesting that it is not so much the feeling of work-related boredom, but the extent to which individuals display bored behaviors that explains boredom's adverse consequences. Our findings are in line with control theory (e.g., Carver, 2004) on the basis of which we proposed that bored behavior, because of its lack of goal-directedness and meaning will eventually be associated with certain adverse affective and behavioral consequences.

Third, our study adds to previous theory and research on boredom by investigating the role that job crafting (Wrzesniewski & Dutton, 2001) as a coping mechanism can play in decreasing both the experience of boredom at work and its adverse consequences. Focusing on the three dimensions of job crafting that consist of activities aimed at making one's job more interesting and meaningful (Tims et al., 2012), we found especially increasing structural job resources to relate negatively to work-related boredom. These results extend previous research on predictors of work-related

boredom by suggesting that not only personality traits and job characteristics may influence feelings of boredom, but also self-regulatory behaviors such as job crafting. This is of theoretical interest as it suggests that self-regulation theories and frameworks (e.g., Baumeister, Zell, & Tice, 2007; Carver, 2004; Carver & Scheier, 1990; Zimmerman, 2000) may be relevant in improving our understanding of why employees feel bored and how they can cope with those feelings. Future research could examine whether the association between job crafting and work-related boredom is mediated by job characteristics and appraisals, as suggested by Spector and Fox's (2002) theory (see Figure 1).

We also found that the work-related boredom–bored behavior relation was significantly weaker for individuals high on the job crafting dimensions increasing challenging job demands and increasing structural resources. These findings further illustrate the importance of distinguishing the affective state of boredom from bored behavior, because they suggest that feelings of boredom at work may not always translate into bored behavior. Moreover, these two job crafting dimensions were found to reduce the indirect relations of work-related boredom with distress and CWB (via bored behavior). Taken together, our findings imply that job crafting may diminish the occurrence of boredom at the workplace, and when boredom does occur, job crafting may attenuate its negative consequences.

Regarding the job crafting dimension of increasing social job resources, less support was found. Hence, this type of job crafting seems less effective when it comes to decreasing the immediate or more distal consequences of work-related boredom. This can be understood from the fact that increasing social job resources implies increasing feedback, coaching, and social support. Although such social interactions may decrease bored behavior if one experiences work-related boredom (e.g., expecting feedback may keep employees focused on their work task, despite it being boring), it may also promote bored behavior (e.g., by increasing the opportunities for small talk with colleagues). Altogether, these effects may cancel each other out, rendering the moderating effect of this type of job crafting nonsignificant.

Limitations and Suggestions for Future Research

We think several issues regarding the present study need attention. First, our study exclusively relied on self-reports, which may be considered to be a limitation. However, as suggested by Spector (2006), "the popular position suggesting that common method variance automatically affects variables measured with the same method is a distortion and oversimplification of the true state of affairs" (p. 221). In spite of this, it would be valuable if future

studies incorporated other measures such as supervisor- or peer-ratings of behavior.

A second issue concerns the low mean levels and small standard deviations of work-related boredom and bored behavior. These low scores are probably largely attributable to the fact that employees in our samples actually experienced low levels of boredom, or had limited opportunities to perform bored behaviors. Also, social desirability might (partially) explain these results. Employees may feel it to be 'not done' to admit to feeling and/or behaving bored. In designing the study, however, we made an effort to minimize this threat by emphasizing that the study was conducted by the university and guaranteeing the confidentiality of participants' responses. Furthermore, it should be noted that restriction of range and social desirability would probably have resulted in an underestimation (rather than an overestimation) of the true associations between boredom and our other study variables. Nevertheless, it would be valuable if future studies tested the generalizability of our findings in other samples with more variation in boredom levels.

Third, the distinction between work-related boredom and bored behavior needs attention. Although confirmatory factor analysis empirically supported the distinction, it should be noted that the two factor model fitted only slightly better than the one factor solution. The theoretical relevance of this distinction was nonetheless further supported by our finding that job crafting moderated the association between work-related boredom and bored behavior. Future research is needed, though, to shed more light on the conditions under which work-related boredom does or does not result in bored behavior.

Fourth, our study was based on correlational data. Therefore, causality can only be assumed on theoretical rather than empirical grounds. Future studies could start to provide insight in causality by employing a longitudinal, full-panel design, preferably with a substantial number of measurement waves (Taris & Kompier, 2003). Such a design would not only make it possible to obtain insight in the hypothesized causal spiral that connects bored behavior and CWB, but would also allow for the examination of reversed and reciprocal causal processes (e.g., between work-related boredom and job crafting).

Fifth, in the present study we only focused on adverse consequences of work-related boredom. However, it would also be interesting to examine whether and how work-related boredom may instigate positive outcomes. As there are some indications that repetition may promote creative behavior (Ohly et al., 2006), and that boredom may potentially lead to prosocial behaviors (Van Tilburg & Igou, 2011), future research should investigate under what conditions work-related boredom can result in positive organizational behaviors.

Sixth, our study only focused on the potential consequences of work-related boredom and paid only limited attention to personal and situational characteristics that may relate to the development of work-related boredom. Although we included sex, age, working hours, and boredom susceptibility, other characteristics may be relevant, such as responsibility level, tenure, and personality (e.g., proactivity and extraversion). Future studies could pay more attention to such characteristics and may also investigate work characteristics that cause or prevent work-related boredom to develop, for example based on the Job Demands-Resources model (Bakker & Demerouti, 2007). It would further be interesting to

examine whether, for example, personality characteristics such as boredom proneness moderate the associations between such work characteristics and the development of work-related boredom. Incorporating work characteristics would also make it possible to obtain more insight in the role of job crafting, by examining which actual changes in work characteristics result from employees' job crafting endeavors. Also, although on theoretical grounds we excluded the decreasing hindering job demands dimension, future research should include this dimension to empirically test whether it may be related to boredom.

Finally, the conceptual distinction between bored behavior and CWB may need attention, as one might argue that they tap similar constructs. We nonetheless think that there are both conceptual and empirical arguments that oppose this interpretation. Conceptually, the behaviors measured in the CWB scale are substantially more negative than the behaviors addressed in the bored behavior scale. CWB is defined as behavior that harms or intends to harm organizations and/or its stakeholders. Bored behavior, in contrast, does not have this intention: it is aimed at alleviating feelings of boredom instead. Furthermore, bored behavior is not necessarily harmful. For example, if an employee does not have enough work to do, and therefore takes long breaks, this would not negatively affect the organization and/or its stakeholders. Empirically, the two measures were only moderately correlated and our factor analysis supported the distinction between bored behavior and CWB, but it should be noted that the two-factor model did not provide a very good fit, and fitted only slightly better than the one factor solution.

Contribution and Practical Implications

Notwithstanding these limitations, we believe our study advanced knowledge on work-related boredom in conceptual, theoretical, and practical ways. From a conceptual point of view, we advance extant research by highlighting the importance of defining work-related boredom as an activity-related affective experience, and measuring work-related boredom without confounding it with its possible causes and consequences. Theoretically, we extend previous theory on boredom by proposing a model of mediating and moderating factors explaining the consequences of work-related boredom. Specifically, our findings extend previous theorizing on boredom by suggesting that feelings of boredom at the workplace may lead to bored behaviors, which can spiral into more detrimental consequences. Moreover, we found support for the suggestion that the negative effects of boredom may be alleviated by self-regulatory and coping behaviors such as job crafting.

From a practical point of view, our finding that even the relatively low levels of work-related boredom observed in our sample are related to adverse outcomes for employees (i.e., distress, depressive complaints) as well as the organization (i.e., CWB) indicates that it is important for employers to design jobs in such a way that work-related boredom is prevented, for example by decreasing repetitiveness and monotony (cf. Fisher, in press; Loukidou et al., 2009) or by applying work-directed interventions such as job enlargement and job enrichment. Additionally, our study suggests that employees themselves may have the opportunity to partly prevent the negative more distal outcomes of work-related boredom by engaging in job crafting activities. It should be noted, however, that this is not possible in every job. For example,

Wrzesniewski and Dutton (2001) indicate that job crafting is hampered by factors such as high task interdependence or close monitoring/supervision. If a job is suitable for job crafting, though, employees should be motivated to engage in such behaviors by raising their awareness about the possibilities of job crafting, for example, by emphasizing the possibilities of acting proactively to learn new things on the job, or to start new work projects. Furthermore, it is important to pay attention to employees' skills for engaging in this type of behaviors (e.g., by providing workshops), to make sure that they can use all opportunities to create a fulfilling work environment.

References

- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*, 49–74. doi:10.1037/0021-843X.87.1.49
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology, 22*, 309–328. doi:10.1108/02683940710733115
- Baumeister, R. F., Zell, A. L., & Tice, D. M. (2007). How emotions facilitate and impair self-regulation. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 408–426). New York, NY: The Guilford Press.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 588–606. doi:10.1037/0033-2909.88.3.588
- Berlyne, D. N. (1960). *Conflict, arousal and curiosity*. New York, NY: McGraw-Hill. doi:10.1037/11164-000
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY: Wiley.
- Bouma, J., Ranchor, A. V., Sanderma, R., & Van Sonderen, E. (1995). Het meten van symptomen van depressie met de CES-D: Een handleiding. [Measuring symptoms of depression with the CES-D: A manual]. Groningen, The Netherlands: Noordelijk centrum voor gezondheidsvraagstukken.
- Bruursema, K., Kessler, S. R., & Spector, P. E. (2011). Bored employees misbehaving: The relationship between boredom and counterproductive work behavior. *Work & Stress, 25*, 93–107. doi:10.1080/02678373.2011.596670
- Carver, C. S. (2004). Self-regulation of action and affect. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications*, pp. 13–39. New York, NY: The Guilford Press.
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control process view. *Psychological Review, 97*, 19–35. doi:10.1037/0033-295X.97.1.19
- Crawford, J. R., & Henry, J. D. (2003). The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample. *British Journal of Clinical Psychology, 42*, 111–131. doi:10.1348/014466503321903544
- de Beurs, E., Van Dyck, R., Marquenie, L. A., Lange, A., & Blonk, R. W. B. (2001). De DASS: Een vragenlijst voor het meten van depressie, angst en stress [The DASS: A questionnaire to measure depression, anxiety and stress]. *Gedragstherapie, 34*, 35–53.
- Feij, J. A., & Van Zuilen, R. W. (1984). *Spanningsbehoefelijst [Sensation Seeking Questionnaire]*. Lisse, The Netherlands: Swets & Zeitlinger.
- Fisher, C. D. (1993). Boredom at work: A neglected concept. *Human Relations, 46*, 395–417. doi:10.1177/001872679304600305
- Fisher, C. D. (in press). Interest and boredom at work. In H. M. Weiss (Ed.), *Handbook of work attitudes and affect*. New York, NY: Oxford University Press.
- Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology, 54*, 466. doi:10.1037/0022-3514.54.3.466
- Frone, M. R. (1998). Predictors of work injuries among employed adolescents. *Journal of Applied Psychology, 83*, 565–576. doi:10.1037/0021-9010.83.4.565
- Game, A. M. (2007). Workplace boredom coping: Health, safety, and HR implications. *Personnel Review, 36*, 701–721. doi:10.1108/00483480710774007
- Hayes, A. F. (2013). *An introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.
- Kass, S. J., Vodanovich, S. J., & Callender, A. (2001). State-trait boredom: Relationship to absenteeism, tenure, and job satisfaction. *Journal of Business and Psychology, 16*, 317–327. doi:10.1023/A:1011121503118
- Kass, S. J., Vodanovich, S. J., Stanny, C., & Taylor, T. (2001). Watching the clock: Boredom and vigilance performance. *Perceptual and Motor Skills, 92*, 969–976.
- Kelloway, E. K., Loughlin, C., Barling, J., & Nault, A. (2002). Self-reported counterproductive behaviors and organizational citizenship behaviors: Separate but related constructs. *International Journal of Selection and Assessment, 10*, 143–151. doi:10.1111/1468-2389.00201
- Kohout, F. J., Berkman, L. F., Evans, D. A., & Cornoni-Huntley, J. (1993). Two shorter forms of the CES-D Depression Symptoms Index. *Journal of Aging and Health, 5*, 179–193. doi:10.1177/089826439300500202
- Lee, T. W. (1986). Toward the development and validation of a measure of job boredom. *Manhattan College Journal of Business, 15*, 22–28.
- Loukidou, L., Loan-Clarke, J., & Daniels, K. (2009). Boredom in the workplace: More than monotonous tasks. *International Journal of Management Reviews, 11*, 381–405. doi:10.1111/j.1468-2370.2009.00267.x
- Mann, S. (2007). The boredom boom. *The Psychologist, 20*, 90–93.
- Mikulas, W. L., & Vodanovich, S. J. (1993). The essence of boredom. *The Psychological Record, 43*, 3–12.
- Münsterberg, H. (1913). *Psychology and industrial efficiency*. Boston, MA: Houghton, Mifflin and Company. doi:10.1037/10855-000
- Muthén, L. K., & Muthén, B. O. (2010). *Mplus User's Guide*, 6th ed. Los Angeles, CA: Muthén & Muthén.
- Ohly, S., Sonntag, S., & Pluntke, F. (2006). Routinization, work characteristics and their relationships with creative and proactive behaviors. *Journal of Organizational Behavior, 27*, 257–279. doi:10.1002/job.376
- Pekrun, R., Goetz, T., Daniels, L. M., Stupnisky, R. H., & Perry, R. P. (2010). Boredom in achievement settings: Exploring control-value antecedents and performance outcomes of a neglected emotion. *Journal of Educational Psychology, 102*, 531–549. doi:10.1037/a0019243
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879–891. doi:10.3758/BRM.40.3.879
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401. doi:10.1177/014662167700100306
- Reijseger, G., Schaufeli, W. B., Peeters, M. C. W., Taris, T. W., Van Beek, I., & Ouweneel, E. (2013). Watching the paint dry at work: Psychometric examination of the Dutch Boredom Scale. *Anxiety, Stress, & Coping, 26*, 508–525. doi:10.1080/10615806.2012.720676
- Robinson, S. L., & Bennett, R. J. (1995). A typology of deviant workplace behaviors: A multidimensional scaling study. *Academy of Management Journal, 38*, 555–572. doi:10.2307/256693
- Runcie, J. F. (1980). By days I make the cars. *Harvard Business Review, May-June, 1980*, 106–115.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*, 293–315. doi:10.1002/job.248

- Sells, S. B. (1970). On the nature of stress. In J. E. McGrath (Ed.), *Social and psychological factors in stress* (pp. 134–139). New York, NY: Holt Rinehard, & Winston.
- Smith, R. P. (1981). Boredom: A review. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 23, 329–340.
- Sommers, J., & Vodanovich, S. J. (2000). Boredom proneness: Its relationship to psychological and physical-health symptoms. *Journal of Clinical Psychology*, 56, 149–155. doi:10.1002/(SICI)1097-4679(200001)56:1<149::AID-JCLP14>3.0.CO;2-Y
- Spector, P. E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods*, 9, 221–232. doi:10.1177/1094428105284955
- Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behavior (CWB) and organizational citizenship behavior (OCB). *Human Resource Management Review*, 12, 269–292. doi:10.1016/S1053-4822(02)00049-9
- Spector, P. E., & Fox, S. (2005). A model of counterproductive work behavior. In S. Fox & P. E. Spector (Eds.), *Counterproductive workplace behavior: Investigations of actors and targets* (pp. 151–174). Washington, DC: APA. doi:10.1037/10893-007
- Spector, P. E., Fox, S., Penney, L. M., Bruursema, K., Goh, A., & Kessler, S. (2006). The dimensionality of counterproductivity: Are all counterproductive behaviors created equal? *Journal of Vocational Behavior*, 68, 446–460. doi:10.1016/j.jvb.2005.10.005
- Taris, T. W., & Kompier, M. A. J. (2003). Challenges in longitudinal designs in occupational health psychology [editorial]. *Scandinavian Journal of Work, Environment, & Health*, 29, 1–4. doi:10.5271/sjweh.697
- Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, 80, 173–186. doi:10.1016/j.jvb.2011.05.009
- Van der Heijden, G. A. H., Schepers, J. J. L., & Nijssen, E. J. (2012). Understanding workplace boredom among white collar employees: Temporary reactions and individual differences. *European Journal of Work and Organizational Psychology*, 21, 349–375. doi:10.1080/1359432X.2011.578824
- Van Tilburg, W. A. P., & Igou, E. R. (2011). On boredom and social identity: A pragmatic meaning-regulation approach. *Personality and Social Psychology Bulletin*, 37, 1679–1691. doi:10.1177/0146167211418530
- Van Tilburg, W. A. P., & Igou, E. R. (2012). On boredom: Lack of challenge and meaning as distinct boredom experiences. *Motivation and Emotion*, 36, 181–194. doi:10.1007/s11031-011-9234-9
- Vodanovich, S. J. (2003). Psychometric measures of boredom: A review of the literature. *The Journal of Psychology: Interdisciplinary and Applied*, 137, 569–595. doi:10.1080/00223980309600636
- Warr, P. (1990). The measurement of well-being and other aspects of mental health. *Journal of Occupational Psychology*, 63, 193–210. doi:10.1111/j.2044-8325.1990.tb00521.x
- Watt, J. D., & Hargis, M. B. (2010). Boredom proneness: Its relationship with subjective underemployment, perceived organizational support, and job performance. *Journal of Business and Psychology*, 25, 163–174. doi:10.1007/s10869-009-9138-9
- Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. *Research in Organizational Behavior*, 18, 1–74.
- Wiesner, M., Windle, M., & Freeman, A. (2005). Work stress, substance use, and depression in young adults: An examination of main and moderator effect models. *Journal of Occupational Health Psychology*, 10, 83–96. doi:10.1037/1076-8998.10.2.83
- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, 26, 179–201.
- Wyatt, S., Langdon, J. N., & Stock, F. G. L. (1937). *Fatigue and boredom in repetitive work*. London, UK: Industrial Fatigue Research Board.
- Yu, C. Y. (2002). *Evaluation of model fit indices for latent variable models with categorical and continuous outcomes* (Unpublished dissertation). Retrieved October 10, 2012, from Mplus Web site: <http://www.statmodel.com/download/Yudissertation.pdf>
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–39). San Diego, CA: Academic Press. doi:10.1016/B978-012109890-2/50031-7
- Zuckerman, M., Buchsbaum, M. S., & Murphy, D. L. (1980). Sensation seeking and its biological correlates. *Psychological Bulletin*, 88, 187–214. doi:10.1037/0033-2909.88.1.187

Received August 21, 2013

Revision received April 1, 2014

Accepted April 4, 2014 ■