DOCTORAL DISSERTATION

Taming the Beast of Boredom – Exploring Boredom at Work and the Role of Job Crafting

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Abstract

This dissertation seeks to extend our knowledge on job boredom which is a scarcely studied topic in the field of occupational health psychology. It does so by comparing the prevalence of job boredom across demographic and occupational groups and exploring its relations with employee well-being and work-related attitudes. In addition, it identifies the contexts of boredom in contemporary workplaces and sheds light on the role of job crafting in proactively coping with boredom at work. This dissertation builds upon theory and research on psychological well-being at work. While prior research has mostly associated job boredom with monotonous jobs and industrial work settings, this dissertation focuses on white-collar work and highly educated employees in Finland. Three studies using both quantitative and qualitative methods constitute the empirical foundation of this dissertation. These include: (1) A cross-sectional study among a sample of 11 468 employees of 87 Finnish organizations; (2) an inductive, exploratory study based on 13 focus-group interviews with 72 employees and supervisors of four organizations, and; (3) a longitudinal panel study among 1635 employees with a three-year time lag. The research findings show that boredom at work is experienced in diverse occupational groups extending beyond blue-collar work. The results highlight the potentially detrimental effects of boredom by showing that the more often boredom is experienced, the more employees report poor well-being and intentions to quit their jobs. Moreover, the findings point beyond the traditional understanding of job boredom as a state of low activation. In white-collar jobs, different types of boredom may emerge from distinct job contexts where various factors may inhibit individuals from fully using their capabilities. As such, this dissertation suggests that job boredom involves non-optimal activation and a sense of meaninglessness. However, the results also show that individuals may prevent boredom at work by proactively crafting more meaningful jobs. Particularly seeking more challenges in one's job may reduce future boredom. In contrast, boredom at work may reduce future job crafting activities. In other words, since bored employees do not have enough energy to craft their jobs, they may be at risk of further enhancing their boredom. This dissertation has practical implications for managers and practitioners who are committed to sustain and improve employee well-being and motivation. It suggests that to prevent boredom at work, jobs should be matched to the individual's capabilities and personal values. Furthermore, employees should be encouraged and enabled to craft more meaningful and inspiring jobs for themselves.

Keywords: job boredom, job crafting, employee well-being, job redesign

Tiivistelmä

Tämän väitöskirjan tavoite on lisätä tietoa vähän tutkitusta työpahoinvoinnin ilmiöstä, työssä tylsistymisestä. Tutkimus vertailee työssä tylsistymisen yleisyyttä eri työntekijäryhmissä ja kartoittaa sen yhteyttä työhyvinvointiin ja työtä koskeviin asenteisiin. Lisäksi se tutkii työssä tylsistymisen erilaisia kontekseja ja tarkastelee työn yksilöllisen muokkaamisen roolia tylsistymisen ehkäisyssä. Väitöskirja pohjautuu psykologisen hyvinvoinnin teoriaan ja tutkimukseen. Koska tylsistymistä on aiemmin tutkittu pääosin yksitoikkoisen ja teollisen työn yhteydessä, tässä tutkimuksessa keskitytään tutkimaan suomalaisia valkokaulustyöläisiä ja korkeasti koulutettuja työntekijöitä. Väitöskirjan empiirinen osuus koostuu kolmesta osatutkimuksesta, joissa hyödynnetään sekä tilastollisia että laadullisia tutkimusmenetelmiä. Näihin kuuluvat: (1) poikkileikkaustutkimus 11 468 työntekijän otoksessa 87 suomalaisessa organisaatiossa; (2) induktiivinen tutkimus 13 kohderyhmähaastattelusta 72 työntekijän ja esimiehen otoksessa neljässä organisaatiossa; ja (3) pitkittäistutkimus 1635 työntekijän otoksessa kolmen vuoden aikavälillä. Tutkimustulokset osoittavat, että työssä tylsistyminen ei rajoitu ainoastaan tietyntyyppisiin töihin, vaan koskettaa eri alojen työntekijöitä. Lisäksi työssä tylsistymisellä voi olla haitallisia vaikutuksia niin yksilöille kuin organisaatioille, sillä mitä useammin työssä tylsistymistä koetaan, sitä enemmän työntekijät raportoivat heikompaa työhyvinvointia ja aikeita lähteä työpaikasta. Tulokset avartavat perinteistä ymmärrystä tylsistymisestä matalan aktivaatiotason tilana. Valkokaulustöissä tylsistyminen voi herätä erityyppisissä työn konteksteissa, joissa monenlaiset tekijät voivat estää yksilöä käyttämästä koko kapasiteettiaan. Näin ollen tässä väitöskirjassa esitetään, että työssä tylsistymiseen liittyy epätyydyttävä aktivaatiotaso ja kokemus työn merkityksettömyydestä. Tulosten mukaan yksilöt voivat kuitenkin ennaltaehkäistä työssä tylsistymistä muokkaamalla oma-aloitteisesti työstään merkityksellisempää. Erityisesti proaktiivinen työn haasteiden lisääminen voi vähentää työssä tylsistymistä tulevaisuudessa. Sitä vastoin työssä tylsistyminen saattaa vähentää työn yksilöllistä muokkaamista tulevaisuudessa. Toisin sanoen, koska tylsistyneillä työntekijöillä ei ole riittävästi resursseja muokata työtään, he voivat olla vaarassa tylsistyä entisestään. Väitöskirjalla on käytännön merkitystä esimiehille ja muille työelämän toimijoille, jotka pyrkivät kehittämään työntekijöiden hyvinvointia ja motivaatiota. Sen mukaan tylsistymisen ehkäisemiseksi työtä tulisi voida sovittaa yksilön kykyihin ja arvoihin. Työntekijöitä tulisi myös rohkaista ja mahdollistaa muokkaamaan työstään merkityksellisempää ja inspiroivampaa.

Avainsanat: työssä tylsistyminen, työn yksilöllinen muokkaaminen, työhyvinvointi, työn uudelleensuunnittelu

Samenvatting

Dit proefschrift poogt onze kennis te vergroten over verveling op het werk *(job boredom*), een tot op heden nauwelijks bestudeerd onderwerp binnen de arbeids- en gezondheidspsychologie. Daartoe is de prevalentie van verveling vergeleken bij verschillende beroepsgroepen en zijn de relaties onderzocht van verveling op het werk met het welbevinden van werknemers en hun werk gerelateerde attitudes. Voorts is verveling binnen de context van de hedendaagse arbeid verkend en is de rol van het proactief omgaan met verveling op het werk belicht (*job crafting*). In dit proefschrift wordt voortgebouwd op eerder uitgevoerd onderzoek naar psychologisch welbevinden. Hoewel eerder onderzoek verveling op het werk voornamelijk relateert aan monotoon werk in de industriële sector, richt dit proefschrift zich op bedienden (*white-collar workers*) en meer specifiek op hoogopgeleide Finse werknemers.

De empirische basis van dit onderzoek wordt gevormd door drie studies, die zowel met behulp van kwantitatieve als kwalitatieve methoden zijn uitgevoerd. Deze drie studies omvatten achtereenvolgens: (1) een cross-sectionele studie bij een steekproef van 11 468 medewerkers uit 87 Finse organisaties; (2) een inductieve, verkennende studie gebaseerd op 13 interviews met focusgroepen bestaande uit 72 medewerkers en leidinggevenden van vier organisaties; (3) een longitudinaal panel onderzoek bij 1635 werknemers met een tijdsinterval van drie jaar. De bevindingen van de studies laten zien aan dat verveling op het werk niet alleen bij arbeiders (*blue-collar workers*) maar ook bij bedienden (*white-collar workers*) voorkomt. Bovendien suggereren de resultaten mogelijk schadelijke effecten van verveling, waarbij geldt dat hoe vaker verveling op het werk wordt ervaren, hoe groter de kans dat werknemers een geringe mate van welbevinden rapporteren en een sterkere neiging hebben om hun baan te verlaten. Bovendien, wijzen de onderzoeksbevindingen er op dat verveling op het werk meer is dan een toestand van geringe activatie die veroorzaakt wordt door een gebrek aan een stimulerende werkomgeving, zoals traditioneel wordt aangenomen. Zo blijken er bij bedienden, afhankelijk van de werkcontext, verschillende soorten verveling voor te komen, waarbij het werknemers wordt belet om volledig gebruik te maken van hun capaciteiten. Derhalve wordt in dit proefschrift gesteld dat het verveling op het werk in essentie gaat om een suboptimaal niveau van activatie en een gevoel van zinloosheid. Tot slot suggereren de onderzoeksresultaten van dit proefschrift dat werknemers verveling op het werk tegen kunnen gaan door proactief meer betekenis te geven aan hun baan (*job crafting*). Of anders gezegd, door actief op zoek te gaan naar meer uitdaging op het werk kan verveling worden verminderd. Het is echter ook gebleken dat verveling op het werk het toekomstige *job craften* beperkt. Met andere woorden, doordat werknemers die zich vervelen te weinig energie hebben om hun toestand

te veranderen, bestaat het risico dat de verveling verder toeneemt. Dit proefschrift heeft praktische implicaties voor managers en HR-professionals die zich inzetten voor het behoud en het verbeteren van het welbevinden en de motivatie van hun werknemers. De bevindingen laten namelijk zien het werk moet worden aangepast aan de capaciteiten en persoonlijke waarden van de werknemer om verveling te voorkomen. Bovendien kunnen werknemers worden aangemoedigd en in staat gesteld worden om proactief meer betekenis en inspiratie binnen hun baan te zoeken.

Sleutelwoorden: verveling op het werk, job crafting, welbevinden op het werk, taak-herontwerp

List of original publications

This doctoral dissertation consists of a summary and of the following publications which are referred to in the text by their numerals.

Article 1: Harju, L., Hakanen, J. J., & Schaufeli, W. B. (2014). Job boredom and its correlates in 87 Finnish organizations. *Journal of Occupational and Environmental Medicine, 56*(9), 911-918. DOI: 10.1097/JOM.0000000000000248.

Article 2: Harju, L. K., & Hakanen, J. J. (2016). An employee who was not there: a study of job boredom in white-collar work. *Personnel Review, 45*(2), 374-391. DOI: 10.1108/PR-05-2015-0125.

Article 3: Harju, L. K., Hakanen, J. J., & Schaufeli, W. B. (2016). Can job crafting reduce job boredom and increase work engagement? A three-year cross-lagged panel study. *Journal of Vocational Behavior, 95-96,* 11-20. DOI: 10.1016/j.jvb.2016.07.001.

AUTHOR'S CONTRIBUTION

Data collection and analysis

All the data for this dissertation were collected in the Spiral of Inspiration –Research and development project at the Finnish Institute of Occupational Health (FIOH). All members of the project team, including Lotta Harju, Jari Hakanen, Krista Pahkin, Piia Seppälä and Anna Laaksonen, participated in collecting the quantitative data. FIOH statisticians Aki Koskinen and Maria Hirvonen were involved in handling the quantitative data.

The qualitative data was collected by Lotta Harju. The recorded interviews were transcribed by Annapura Oy. Transcription did not influence the content of the interviews. This was ensured by Lotta Harju, who compared the audio records to the final transcripts. Lotta Harju translated the Finnish language quotes into English when they were included in the original article.

Lotta Harju conducted all the analyses for the original articles.

Writing:

Lotta Harju wrote most of the content for the original articles. Research Professor Jari Hakanen contributed, commented and gave input for all original articles. For the original articles 1 and 3, Professor Wilmar Schaufeli gave input, corrections and commentary. Alice Lehtinen from FIOH checked English language for the original articles. Each suggestion and correction made by Alice Lehtinen was checked and approved by Lotta Harju to ensure that the content of the original articles was not changed.

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1. Introduction

1.1. Understanding the contemporary experience of boredom at work

Boredom has been assessed in various off-work contexts, such as at leisure (Ragheb & Merydith, 2001; Iso-Ahola & Weissinger, 1990), in relationships (Harasymchuk & Fehr, 2012; Watt & Ewing, 1996), and in the academia (Acee, et al., 2010; Nett, Goetz & Daniels, 2010; Pekrun, Goetz, Titz & Perry, 2002). Although the role of emotions in individual well-being and performance is being acknowledged more and more in organizational research (Briner, 1999; Fredrickson, 1998; Diener & Larsen, 1993), boredom has remained a neglected area of study in work and organizational psychology (Piotrowski, 2013; Loukidou, Loan-Clarke & Daniels, 2009; Fisher, 1993).

Early studies on workplace boredom focused on the effects of monotonous and repetitive work in industrial settings before and after the II World War (see Schaufeli & Salanova, 2014; Piotrowski, 2013; Loukidou et al., 2009 for overviews), which may explain why boredom has later been understood as a symptom of, or even a synonym for, monotonous or unchallenging work (Salanova, Del Líbano, Llorens & Schaufeli, 2014; Melamed, Ben-Avi, Luz & Green, 1995; Lee, 1986; Hill & Perkins, 1985). However, more recent research shows that monotony is not the only cause for boredom (Loukidou, et al., 2009; Fisher, 1993), nor do repetitive jobs necessarily induce boredom, if the jobs are not perceived as monotonous by the employees (Tsai, 2016; Melamed, et al., 1995). Hence, boredom may not be caused by objective working conditions but rather reflects the individual's subjective experience of work.

As an occasional experience boredom is common and bears little impact on general well-being. However, numerous negative outcomes for individuals and organizations may arise if the situation prolongs or becomes chronic. For example, boredom at work has been associated with depressive symptoms (Wiesner, Windle & Freeman, 2005), distress and counterproductive work behavior (van Hooff & van Hooft, 2014), turnover intentions, low commitment and low job satisfaction (Reijseger, et al., 2013), deteriorated job performance (Drory, 1982), absenteeism (Melamed, et al., 1995), engaging in distractions (van der Heijden, Schepers & Nijssen, 2012) as well as with abuse, sabotage, withdrawal, production deviance and theft (Bruursema, Kessler & Spector, 2011).

Neglecting boredom as a threat to employee well-being and organizational functioning would therefore be short-sighted. Instead, better understanding of boredom at work may benefit organizations, especially as boredom is suggested to become more widespread due to increases in the educational levels of workforce, which means that the skills of many employees may exceed the requirements of their jobs (Loukidou, et al., 2009).

According to a recent Gallup poll in 2014, 68.5% of workers in the U.S. are "not engaged" or "actively disengaged" in their jobs (Adkins, 2015). Although lack of interest at work has thus been surveyed from a practical perspective, academic research has not yet assessed the prevalence of boredom across occupational groups in contemporary workplaces. Moreover, although it has been acknowledged that boredom is experienced beyond low-skilled work, only few empirical studies have been conducted on boredom among white-collar workers, professionals or educated workers (e.g. Reijseger, et al., 2013; van der Heijden, et al., 2012).

One potential reason for, and a consequence of, the scarcity of empirical studies is that research keeps struggling with how to define and capture the experience of boredom (Vodanovich & Watt, 2016; Piotrowski, 2013). Boredom is considered as "an evasive and elusive matter" that has a "tendency to hide

in its causes and to escape with it's a/effects" (Johnsen, 2016, p. 2). Consequently, relatively little is known of boredom in contemporary working environments. Hence, this dissertation set out to investigate how often boredom is experienced in different employee cohorts. Moreover, the purpose of this work was to contextualize and characterize job boredom in white-collar work and examine the role of specific employee-initiated behaviors in reducing boredom.

Although interest in the role of *proactive* behaviors in employee well-being and motivation has grown over the recent decades (Grant & Parker, 2009; Spreitzer, Sutcliffe, Dutton, Sonenshein & Grant, 2005; Wrzesniewski & Dutton, 2001), research has mostly focused on what employees do to cope with boredom at work (Skowronski, 2012; Spector & Fox, 2010; van der Heijden, et al., 2012; Game, 2007) rather than studying behaviors that can *prevent* boredom. To shed light on how employees can protect themselves from becoming bored at work, this dissertation examined the role of job crafting which refers to activities employees initiate to create more meaningful and motivating jobs for themselves (Wrzesniewski & Dutton, 2001). Through these objectives this dissertation proposes that although job boredom may concern employees in diverse jobs and work situations, contemporary work environments also provide possibilities for individuals to actively participate in sustaining their interest and inspiration at work.

In the following, I will briefly introduce the models of psychological well-being and motivation which comprise the theoretical foundation of this study. Thereafter, I will present the study aims and research questions which have guided this dissertation.

1.2. Employee psychological well-being

Over the recent decades, work and organizational psychology has turned from examining mainly job satisfaction and stress towards studying emotions and affective states at work more broadly (Briner, 1999; Fredrickson, 1998). Affect at work is suggested to drive motivation and performance, (Côté, 1999; Staw & Barsade, 1993), (dis-)engaged behaviors, such as absenteeism and commitment (Briner, 1999), as well as attitudes, such as job satisfaction (Dormann & Zapf, 2001).

Employee psychological well-being can be understood as frequent experience of positive affect and infrequent experience of negative affect (Diener & Larsen, 1993). Russell (1980) suggests that affective experiences can be represented in a circumplex model, where affective states fall in a circular order in a two-dimensional bipolar space, which is divided by two orthogonal axes representing pleasure – displeasure (horizontal axis) and a degree of arousal (vertical axis). Warr (1990) further developed this model by suggesting principal axes of pleasure – displeasure (horizontal axis), anxiety – contentment and depression- enthusiasm (diagonal axes crossing opposite quadrants). In his model, the axes pierce an elliptical circle to emphasize the relative importance of pleasure over arousal in affective well-being, as people may place more weight on the hedonic valence in their affective experience. That is, fluctuations in perceptions of pleasure are suggested to have greater influence on the overall experience of well-being than fluctuations in levels of arousal. This way, an element of qualitative difference between affective categories could be added to the circumplex model.

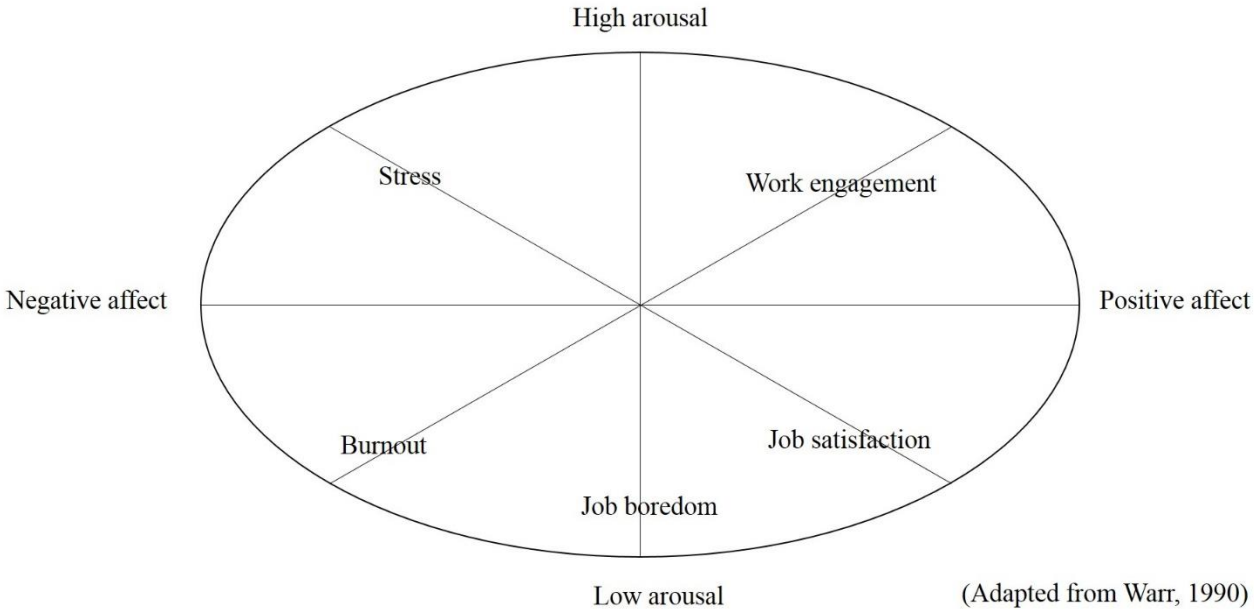

Figure 1. Model of affective well-being

Following Warr's model, different states of affective well-being at work are presented in Figure 1. The horizontal axis represents positive affect – negative affect, whereas the vertical axis represents the degree of arousal. For example, an experience of positive affect may be accompanied by high arousal (i.e. work engagement) or low arousal (i.e. job satisfaction). Similarly, negative affect may involve high arousal (i.e. stress) or low arousal (i.e. burnout). Job boredom is positioned as a state of low positive affect and low arousal and thereby distinguished from negative affect states (Daniels, Harris & Briner, 2004; Daniels, 2000; Watson & Tellegen, 1985).

In addition to its affective and physiological components, the experience of boredom is also characterized by cognitive and motivational manifestations (Pekrun, Goetz, Daniels, Stupnisky & Perry, 2010). More specifically, bored employees have difficulties focusing attention on their tasks, and they

may be tempted to engage in non-work related activities (Reijseger, et al., 2013; Fahlman, Mercer-Lynn, Flora & Eastwood 2013; Fisher, 1993). Job boredom can thereby be considered as the conceptual opposite to work engagement (Schaufeli & Salanova, 2014) which refers to a positive affective-motivational state that is characterized by vigor (i.e. high levels of energy and resilience at work), dedication (i.e. strong involvement and pride in one's work) and absorption (i.e. focused attention, being fully and happily concentrated at work; Schaufeli, Salanova, González-Romá & Bakker, 2002).

A persistent state of boredom at work has also been dubbed as *boreout* in a non-academic discussion (Rothlin & Werder, 2008). As a state of low pleasure and low arousal, job boredom overlaps with burnout which is characterized by exhaustion, cynicism and a lack of accomplishment at work (Maslach, Schaufeli & Leiter, 2001). Exhaustion refers to fatigue caused by chronic stressors at work, cynicism encapsulates an indifferent attitude towards work to mentally distance oneself from it, and a reduced sense of accomplishment results from not being able to meet the work objectives (Schaufeli & Salanova, 2014). Out of these dimensions, exhaustion and cynicism are perceived as the central characteristics of burnout, whereas lack of accomplishment is perceived as their consequence (Schaufeli & Taris, 2005).

Job boredom and burnout have been associated with similar, negative, outcomes for individuals and organizations, such as depression (Goldberg, Eastwood, LaGuardia & Danckert, 2011; Hakanen & Schaufeli, 2012), poor organizational commitment and turnover (see Schaufeli & Salanova 2014 for an overview). However, burnout and job boredom have been found to be conceptually distinct, albeit correlated, constructs (Reijseger, et al., 2013). Job boredom is considered as a less intense experience in terms of low activation and displeasure than burnout (Schaufeli & Salanova, 2014). Furthermore, burnout is more strongly related to negative affect, whereas job boredom is characterized by the absence of positive affect (Daniels, 2000). Thus, the states may reflect different processes. Whereas burnout refers

to a state of mental exhaustion that develops as a reaction to chronic work overload (Schaufeli & Taris, 2005; Maslach, et al., 2001), job boredom is suggested to be a response to lack of stimulation and cognitive underload (Reijseger, et al., 2013; Mikulas & Vodanovich, 1993).

Little is known of the relationship between job boredom and burnout. This is illustrated in an earlier study by Kafry and Pines (1980), who sought to extend burnout research by introducing a more general experience of tedium. Tedium is defined as physical, mental and emotional exhaustion which is characterized by feelings of strain and burnout, emotional and physical depletion and negative attitudes towards one's self and work. As such, tedium is almost an identical experience to burnout. However, the study found that tedium was positively related to work underload across three samples of students and professionals, while work overload was positively related to tedium only in a sample of students. This study suggests that chronic work underload could develop into a state similar to burnout. Although some consider boredom at work as a symptom of burnout (Salanova, et al., 2014), there is no research available on the developmental path of a persistent boredom experience.

1.3. Resource –based model of human motivation

As previously mentioned, boredom at work is associated with an unstimulating situation, in which an individual is inhibited from engaging in satisfying activity (Eastwood, Frischen, Fenske & Smilek, 2012; Mikulas & Vodanovich, 1993). Thus, bored employees may seek additional stimuli to ease the unpleasant experience and to inspire them at work. This dissertation focuses on *job crafting* which refers to proactive behaviors that employees initiate to match their jobs with their needs, preferences and capabilities (Wrzesniewski & Dutton, 2001).

The motivation to craft more stimulating jobs can be explained by Conservation of Resources (COR; Hobfoll, 1989) theory. COR theory postulates that psychological well-being is a function of various resources that are valued by the individual. In the context of work, such resources can include those physical, psychological, social or organizational aspects of the job that help employees to achieve their work goals, reduce the strain caused by work or foster employees' personal growth and development (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Thus, the more resources employees have at work, the less likely they are to experience job boredom (Reijseger, et al., 2013). According to Hobfoll (1989), resources can also refer to factors that are functional in attaining other resources. For example, social support, like social relations in general, can be perceived as a resource to the extent that it may help in the pursuit of valuable goals and conditions.

COR theory maintains that preventing resource loss is one of the primary motivators of human behavior, and that individuals strive to maintain and build their resources to protect their well-being (Hobfoll, 2001; 1989). One way to achieve this is to continuously gain more resources to develop resource surpluses that can offset potential loss in the future. For example, by crafting more resourceful jobs, employees may remain sufficiently stimulated and avoid boredom at work. This type of behavior is labelled *proactive coping*, as individuals pursue to build their resources to prevent future threats before they occur (Hobfoll, 2001).

COR theory suggests that accumulation of resources facilitates positive *gain cycles*, such as when job resources enhance work engagement which further fosters work-family enrichment (Hakanen, Peeters & Perhoniemi, 2011) and personal initiative (Hakanen, Perhoniemi & Toppinen-Tanner, 2008). However, employees must use their existing resources to build them further. For example, to learn a new skill, employees need to invest resources such as time and energy. If individuals perceive they lack resources, as may be the case in job boredom (Reijseger, et al., 2013), their actions are more likely

directed towards preventing further resource loss rather than accumulating their resource supply (Hobfoll, 2001; 1989).

In other words, while those with abundant resources are better equipped to accumulate them, those who lack resources are more likely to employ *passive coping* strategies that often do very little to improve the situation (Hobfoll, 1989). For example, bored employees may need variety and new challenges, but when they instead pass the time by playing online games, their situation is unlikely to change for the better. Positive *gain cycles* are thus mirrored by negative *loss cycles*, in which initial resource loss predicts future loss, as individuals refrain from building resource surpluses (Hobfoll, 2001).

1.4. Study objectives and research questions

The main objective of this dissertation is to examine the correlates and contexts of boredom at work and to investigate the role of job crafting in preventing boredom. More specifically, the first aim of this study is to 1) map and compare the prevalence of job boredom in different demographic and occupational cohorts and to study its association with employee well-being and attitudes. Second, this study aims to 2) explore the phenomenology of boredom in white-collar work. The third and last aim of this dissertation is to 3) scrutinize the role of job crafting as a way of proactively coping with boredom at work. These objectives are reached through three separate studies that constitute the empirical core of the dissertation. Each study contributes to a part of a theoretical model which is presented in Figure 2.

As previously noted, persistent boredom at work is associated with negative consequences for employees and organizations (Loukidou, et al., 2009). To date, however, no academic research has assessed whether some demographic or occupational groups are at more risk of becoming bored at work

than others. Furthermore, as most empirical studies have thus far employed small employee or student samples to examine the correlates of boredom, we can say little of the associations between job boredom, negative health perceptions and work attitudes in large and heterogeneous employee populations. Hence, the first original article seeks to address these issues by examining the following general research question (Article 1, Figure 2):

RQ1: How often do employees in different occupational and demographic groups experience boredom at work, and what are the associations between job boredom, self-rated health perceptions and work-related attitudes?

Although there are some studies on job boredom among white-collar workers (Reijseger, et al., 2013; van der Heijden, et al., 2012), little qualitative research on the topic exists. The qualitative studies on boredom at work have either focused on the experience of boredom among nurses in mental health care (Loukidou, 2008) or explored how factory workers cope with boredom (Game, 2007). Thus, there is little exploratory research on the contexts of boredom in white-collar working environments. This dissertation argues that there may be context-specific characteristics of boredom in contemporary workplaces that remain hidden due to the dominance of quantitative research in the field. Hence, the second general research question is as follows (Article 2, Figure 2):

RQ2: In what types of work contexts is boredom experienced in white-collar jobs, and how do employees characterize the experience?

Lastly, although some studies provide suggestions on how managers can reduce or avoid boredom at work (Mael & Jex, 2015; Carrol, Parker & Inkson, 2010), so far only one study has examined the relation between *employee-initiated* proactive behaviors (i.e. job crafting) and job boredom (van Hooff & van Hooft, 2014). Although this study found a negative association between job crafting and job boredom, the direction of this relation could not be determined due to the cross-sectional study design. Hence, the last original article of this dissertation set out to study the reverse causation effects between job crafting and job boredom to answer the third general research question (Article 3, Figure 2):

RQ 3: Can job crafting reduce future job boredom, and does job boredom predict future job crafting?

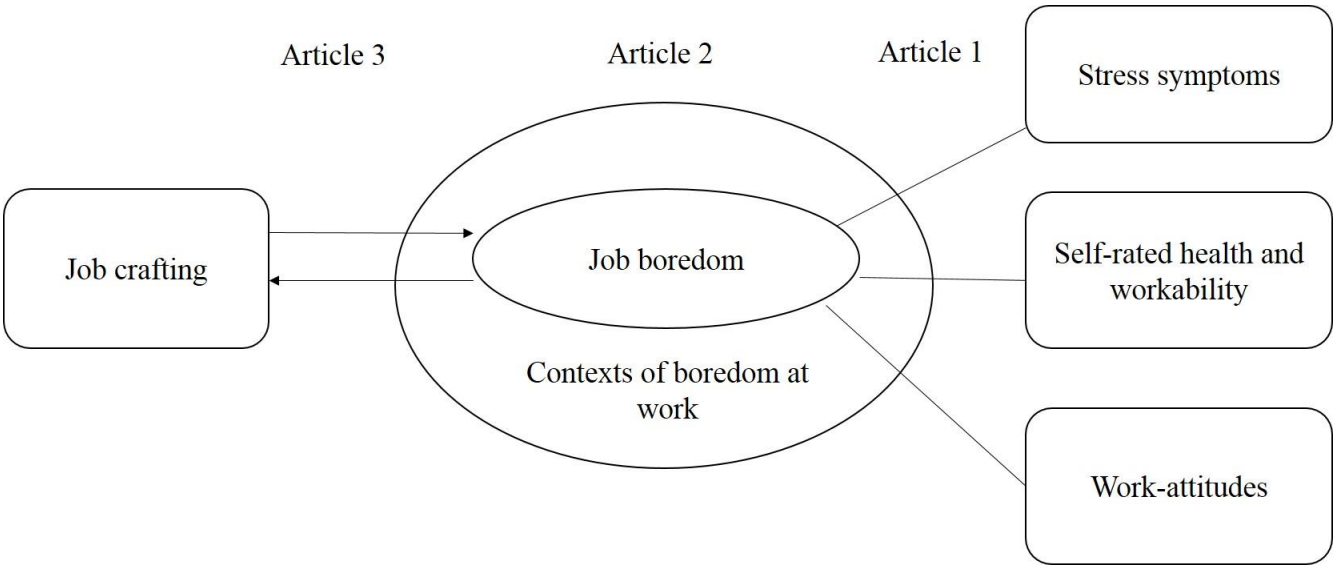

Figure 2. Theoretical model of the dissertation

This dissertation overview is structured as follows: First, in the theoretical part (Section 2), I will review literature on boredom at work and the characteristics and causes of the experience. I will also introduce the concept of job crafting in more detail and discuss its potential in proactively coping with boredom. Thereafter, I will describe the data and present the methods of analysis used in this dissertation (Section 3). In the results section (Section 4), the findings of the original articles will be summarized. The final section (Section 5) is dedicated to a critical discussion of the main findings and their contribution to the theory and practice of employee well-being. I will also address the limitations of this dissertation and suggest avenues for further research before the concluding comments.

2. Theoretical framework

2.1. The experience of boredom

In this chapter, I will review research on boredom. Previous studies have defined boredom either as an individual trait or as a situational state (Vodanovich & Watt, 2016). Trait boredom refers to the individual's propensity to experience boredom, whereas state boredom refers to the subjective experience of boredom in a specific situation. As noted before, in an attempt to capture boredom, researchers have come up with different, although overlapping, conceptualizations of the experience. Despite these discrepancies, scholars have pursued to agree upon a unified definition on boredom. Next, I will discuss and challenge this quest and argue for distinguishing different types of boredom experiences.

2.1.1. Individual differences in experiencing boredom

In the past couple of decades, most research on boredom has focused on individual differences in the propensity to experience boredom and the associations between these differences and mental health (Vodanovich & Watt, 2016; Piotrowski, 2013). According to Farmer and Sundberg (1986), some individuals are dispositioned to experience boredom. These boredom prone individuals tend to find themselves in situations where they experience lack of interest, low personal involvement and lack of enthusiasm (Watt & Hargis, 2010). Boredom prone individuals may feel that their environment lacks stimuli, such as variety, novelty and excitement, and / or they may be unable to generate internal stimuli, such as interest in activities, which is why they are more susceptible to boredom (Vodanovich, Wallace & Kass, 2005).

Propensity to experience boredom has been linked with negative well-being, such as depression (Mercer-Lynn, Flora, Fahlman, & Eastwood, 2013; Malkovsky, Merrifield, Goldberg & Danckert, 2012; Newell, Harries, & Ayers, 2012; La Pera 2011; Goldberg, et al., 2011; Carriere, Cheyne & Smilek; 2008; Farmer & Sundberg, 1986), psychotic disorders (Todman, 2003), anxiety (Mercer-Lynn, et al., 2013; Fahlman, et al. 2013; La Pera, 2011; Sommers & Vodanovich, 2000; Farmer & Sundberg, 1986), apathy (Goldberg, et al., 2011; Ahmed, 1990), anger and aggression (Fahlman, et al., 2013; Mercer-Lynn, Hunter & Eastwood, 2013; Dahlen, Martin, Ragan & Kuhlman, 2004; Rupp & Vodanovich, 1997), somatization complaints (Sommers & Vodanovich, 2000), and less life satisfaction (Farmer & Sundberg, 1986). Furthermore, boredom proneness has been associated with addictive behavior, such as substance abuse (LePera, 2011) and pathological gambling (Mercer & Eastwood, 2010; Blaszczynski, McConaghy, & Frankova, 1990). In a work context, propensity to experience boredom has been associated with negative phenomena, such as non-work presenteeism (Wan, Downey & Stough, 2014), job

dissatisfaction (Kass, Vodanovich, & Callender, 2001) and poor supervisor-rated job performance (Watt & Hargis, 2010).

To date, two of the most widely used instruments to measure individual susceptibility to boredom are the Boredom Proness Scale (BPS; Farmer & Sundberg, 1986) and the Boredom Susceptibility Scale (ZBS; Zuckerman, 1979) which is a part of Zuckerman's Sensation Seeking Scale (see Vodanovich & Watt, 2016 for a review). However, BPS and ZBS have been shown to correlate poorly (Mercer-Lynn, Hunter & Eastwood, 2013; Farmer & Sundberg, 1986). Mercer-Lynn, Flora, Fahlman and Eastwood (2013) found that these instruments are based on different definitions and, consequently, measure different constructs. They note that whereas the ZBS conceptualizes boredom as a tendency to be unaroused because of an unstimulating environment, the BPS defines boredom as individual's inability to become meaningfully connected to the external world.

It follows that these measures are associated with different correlates. In the study by Mercer-Lynn and associates (2013), BPS was positively related to attention problems, tendency to escape or avoid unwanted feelings or thoughts, higher levels of neuroticism, anxiety, depression, emotional eating and dysphoria. ZBS, in turn, was negatively associated with neuroticism, tendency to escape or avoid unwanted feelings or thoughts, and positively associated with gambling and alcohol abuse. Both measures were negatively associated with a sense of meaning in life and positively associated with anger. According to the researchers, the construct captured by the BPS is characterized by negative emotionality, withdrawal and inward expression of distress, whereas the construct measured by the ZBS is characterized by seeking more stimulating and exciting experiences and an outward expression of distress. As such, it is questionable whether the ZBS should be used as a trait boredom measure at all, as it may only assess sensation seeking (Vodanovich & Watt, 2016).

The debate over defining and measuring trait boredom has also brought up the possibility that there may be two different types of boredom proneness. A study by Malkovsky, Merrifield, Goldberg and Danckert (2012) distinguished two different types of boredom proneness, namely apathetic and agitated, with distinct correlates. Congruent with the aforementioned distinction between boredom proneness and sensation seeking, apathetic boredom prone individuals were characterized by lack of motivation to engage in the environment, whereas agitated boredom prone individuals were characterized by failure to be satisfied by the environment, despite the motivation to engage in it.

Malkovsky and associates (2012) found that in addition to individual differences in the tendency to feel bored, there may also be individual differences that may explain different responses to boredom. In their study, the relationship between boredom proneness and lapses in attention was specifically driven by an apathetic type of boredom proneness, whereas the agitated boredom prone individuals were less sensitive to attention errors. Furthermore, the study found that the individuals characterized as agitated boredom prone were motivated to seek novel stimuli, whereas the apathetic boredom prone individuals preferred familiar stimuli.

Although the individual's propensity to experience boredom and the experience of boredom have been used interchangeably in research, they represent different aspects of boredom and should thus be measured separately (van Hooff & van Hooft, 2014). This is exemplified by the finding that high boredom proneness scores and the experience of boredom correlate only moderately (Kass, Vodanovich & Callender, 2001). Significant associations between trait boredom and various negative correlates do not mean that the same relations exist regarding the experience of boredom (Todman, 2013). In other words, it cannot be concluded that the negative outcomes associated with high boredom proneness are, in fact, caused by boredom.

All in all, the aforementioned evidence indicates that individuals differ in how easily and in what situations they get bored. Some individuals are more likely to experience boredom in certain types of situations, such as in repetitive work, while others are perfectly happy in the same setting (Johnsen, 2016). Individual characteristics and experiences guide a person's emotional responses to different events, while the environment constrains and encourages those reactions in different ways (Weiss & Cropanzano, 1996). In this sense, trait and state boredom are not conflicting concepts but merely tap into different loci of boredom, both of which play a role in its emergence (Fahlman, et al., 2013).

Hereafter, this dissertation will focus on boredom as a psychological state that fluctuates across situations. However, the research on individual differences in experiencing boredom yields some noteworthy implications in terms of state boredom. If there are different types of boredom prone individuals, can there be more than a one type of experience as well? Investigating this question is one of the central objectives of this dissertation.

2.1.2. Defining and capturing the experience of boredom

Boredom is defined as an unpleasant transitory state of mind that involves an affective and cognitive reaction to an environment or an activity that fails to stimulate and engage the individual in a satisfying way (Reijseger, et al., 2013; Fahlman, et al., 2013; Eastwood, et al., 2012; Mikulas & Vodanovich, 1993; Fenichel, 1951). It is characterized by lack of interest in and disengagement from the current activity (Mael & Jex, 2015; Fahlman, et al., 2013; Fisher, 1993). As a response to the unpleasant experience, bored employees may engage in non-work related behaviors, such as socializing with

colleagues, browsing the internet or daydreaming (Reijseger, et al., 2013; Game, 2007; Damrad-Frye & Laird, 1989).

Hence, boredom at work consists of many aspects, and researchers have defined and measured it in numerous ways (see Vodanovich & Watt, 2016 and Vogel-Walcutt, Fiorella, Carper & Schatz, 2012 for overviews). Some studies have measured boredom at work with a single item (e.g. "Do you ever feel bored at work"; Mann, 2012), while other measures, such as The Job Boredom Scale (Grubb, 1975) and Lee's Job Boredom Scale (Lee, 1986), have involved assessing the potential causes of boredom (i.e. job monotony) rather than the experience itself (see Vodanovich, 2003 for a review). This is problematic, as a person can be involved in an unstimulating, monotonous situation and not perceive it as boring (Mikulas & Vodanovich, 1993). Thus, researchers have had to tackle the issue of capturing the experience of boredom independently from its causes.

According to Vodanovich and Watt (2016), the attempts to define boredom over the last decade have yielded diverse, yet overlapping, conceptualizations of the construct that often share the components of dissatisfaction and low arousal, lack of stimulation, attention difficulties and perception of time passing by slowly. They argue that instead of coming up with additional constructs of boredom, researchers need to agree on which definition to use. They note, however, that seeking cohesion and agreement may cloud the contextual and subjective nature of boredom (i.e. individual responses in specific situations). This reflects the conundrum in the study of boredom. On one hand, there has been a call for a clear definition and a robust construct to capture the experience of boredom (e.g. Vogel et al., 2012; Goldberg et al., 2011). On the other hand, however, there lies a question whether a single definition for such a context specific and subjective construct can be found at all.

2.1.3. Distinguishing between episodic and persistent boredom

Researchers have suggested that different types of boredom can be distinguished based on the duration and the pervasiveness of the experience. Recently Mael and Jex (2015) distinguished four types of boredom according to two dimensions, namely situational vs. global and episodic vs. chronic (Figure 3). Situational boredom can be episodic or chronic, but it is limited to a specific facet of one's life, such as work. Situational episodic boredom refers to a specific situation that is sometimes boring and may at other times be engaging, such as a meeting or a specific task. Situational chronic boredom, in turn, refers to a prolonged experience, where individuals perceive their jobs as boring all or most of the time. Whereas in situational boredom the experience does not pertain other parts of one's life, global boredom refers to an experience that covers all facets of one's life either episodically or chronically. Global boredom arises from within an individual, for example, when personality differences make others more susceptible to experience boredom across situations (i.e. global episodic boredom), or when individuals lead lives characterized by resignation and depression (i.e. global chronic boredom).

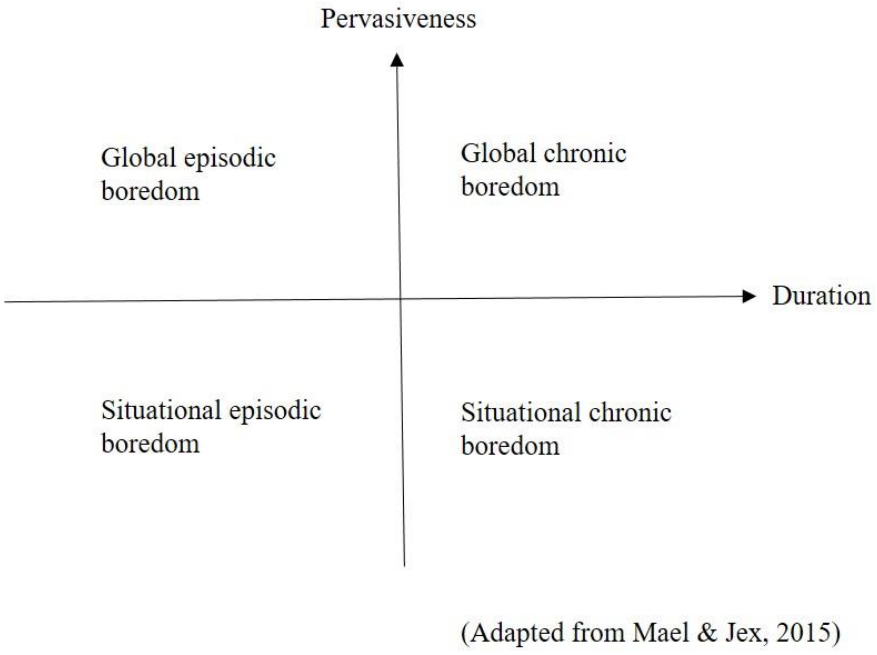

Figure 3. A typology of boredom

In the situational context of work, this would mean that episodic and chronic boredom are, in fact, different experiences. There is also some empirical support for separating episodic and persistent experiences of boredom at work. For example, Loukidou (2008) distinguished between a short-term emotional reaction to a specific situation or task and a prevalent mental state that could be attributed to the broader work environment. Her study found that although a routine task may be perceived as unpleasant and boring by the employee, the experience does not necessarily cross the boundaries of that specific task, whereas a more persistent experience of boredom may evolve gradually and concern the whole work context.

Separating different types of boredom based on the pervasiveness of the experience was already suggested by Martin Heidegger in his phenomenology of boredom (1983). Heidegger distinguished three

different types of boredom described as: (1) a situational occurrence caused by external circumstances, for example, when one has to wait for a train without anything to do meanwhile; (2) a state of apathy caused by a perception that the activities one engages in are meaningless and a waste of time, for example, when most of one's working hours are spent in meetings that seem to serve little purpose whatsoever; and (3) a more pervasive, existential experience of indifference towards past, present and future, for example, when one perceives life as meaningless (see also an analysis by Stafford & Gregory, 2006).

Whereas in Heidegger's situational type of boredom individuals were restlessly looking for ways to pass the time, the other types were characterized by a more passive experience. It is thereby implied that episodic and persistent boredom are distinct experiences which may also have different characteristics.

2.1.4. Conclusions

Defining and measuring boredom has not been an easy task for researchers. Despite the call to agree upon one robust construct, different types of boredom experiences may exist in workplaces. To date, most studies have not distinguished between episodic and persistent boredom at work. However, this distinction might shed light on the mixed, even conflicting, characteristics of boredom that will be addressed in the next chapter. Instead of discarding these discrepancies as differences in theoretical approaches, this dissertation will argue that they may be, at least in part, a product of studying different types of experiences.

2.2. Characteristics of boredom

Research has approached the topic of boredom from different theoretical standpoints. This has contributed to the diverse perceptions on the characteristics and behavioral consequences of boredom that are outlined in the following.

2.2.1. Affective and physiological characteristics of boredom

As discussed in the previous section, research on affective well-being commonly defines boredom as a state of low arousal or passiveness (Schaufeli & Salanova, 2014; Reijseger, et al., 2013; Mikulas & Vodanovich, 1993; Daniels, 2000; Russel, 1980). Although this notion is supported by some of the early experimental studies (see Thackray, 1981 for a review), a body of research also associates the experience of boredom with increased arousal.

Some suggest that increased arousal is a result of bored individuals' struggle to maintain or return their attention on the unstimulating activity (Fahlman, et al., 2013; Harris, 2000; Fisher, 1993; O'Hanlon, 1981; Thackray, 1981). In support of this argument, a study by Merrifield and Danckert (2014) found that when study participants were shown boredom inducing video clips, their heart rates and cortisol levels were elevated and skin conductance levels decreased. According to the researchers, boredom may be associated with difficulties to sustain attention and increased arousal. Hamilton (1981) argues that high arousal may be the way bored individual self-stimulate to compensate for the low arousal. As such, high internal arousal may be individual's response to aversive deactivation. This is in line with Ursin and

Eriksen's (2004) suggestion that cognitive activation (i.e. increased arousal) is a stress response caused by a discrepancy between what is and what should be.

High arousal involved in boredom may be manifested in feelings of restlessness and frustration (Fahlman, et al., 2013; Harris, 2000; Fisher, 1993). Some suggest that boredom generates a restless drive towards finding meaningful activities (Johnsen, 2016; Barbalet, 1999), such as in Roy's (1959) study, where factory machine operatives sought to find meaning from various forms of informal interaction to gentle the "beast of boredom" to "the harmlessness of a kitten" (p.164). Boredom is thus seen as a catalyst for action rather than as a state of passiveness. Barbalet (1999) distinguishes boredom, a state of active discomfort, from ennui which refers to accepting and passively surrendering to the state of indifference. Here, restlessness in characterized as a response to boredom that can be alleviated through finding meaningful activities.

However, sometimes the situation inhibits individuals from seeking meaning in more satisfying activities. In such cases, frustration is perceived as the central affective component of boredom (Merrifield & Danckert, 2014; Vogel, et al., 2012; Charlton & Hertz, 1989; Hill & Perkins, 1985; Perkins & Hill, 1985). Fenichel (1951) suggests that this frustration results from a simultaneous need for action and an inhibition to perform that action. According to this psychodynamic view, boredom is characterized by the conflict of wanting, but being unable, to engage in a specific activity (Eastwood, et al., 2012).

In contrast, other researchers perceive boredom as a distinct emotion from frustration (van Tilburg & Igou, 2012). Mikulas and Vodanovich (1993) posit that when individuals react to boredom with frustration, in that moment they are not bored but frustrated. In this view, boredom is perceived as a fleeting emotion that is independent of its responses. However, in a persistent type of boredom, such a distinction may not be plausible. Loukidou (2008) suggests that boredom should be considered as an

emotional construct, which develops over time in a situational context, rather than perceiving it as an isolated emotion. It follows that the longer boredom persists, the more frustrated individuals may become (van Hooff & van Hooft, 2014).

The experience of boredom is also suggested to comprise both low arousal (e.g. lethargy, apathy, tiredness) and high arousal (e.g. restlessness, agitation, frustration) that may occur during different stages of an episode and depend on the situation in which boredom emerges (Fahlman, et al., 2013; 2009; Eastwood, et al., 2012; Bernstein, 1975). This conceptualization aligns with Briner's (1999), who views boredom as a dynamic, ongoing process where fluctuating emotions, cognitions and behaviors are interwoven with the personal and environmental context. Frustration may be a response to inactive situations, where individuals are inhibited from engaging in satisfying activity and struggle to sustain their attention on unstimulating tasks. Conversely, individuals may give up the struggle and let their attention wander off from the present activity, which will be the topic of the next chapter.

2.2.2. Cognitive characteristics of boredom

Inability to engage or sustain attention has been viewed as a central characteristic of boredom (Eastwood, et al., 2012; Harris, 2000; Fisher, 1993) and a prominent factor in boredom-related performance decrements (see Loukidou, et al., 2009 for a review). When the task does not grasp the individual's full attention, stimuli of the external world may disrupt his or her concentration (Csíkszentmihályi, 1975). Attentional lapses may be due to tasks or activities that are not stimulating or demanding enough to fully engage one's cognitive capacity but also to individual differences in the ability to engage attention to internal and external stimuli (Malkovsky, et al., 2012; Eastwood, Cavaliere,

Fahlman & Eastwood, 2007). Eastwood and associates (2012) argue that in addition to attentional difficulties, the experience of boredom also involves awareness of those struggles either through being aware of the mental effort it takes to focus on the task at hand or through being aware of mind wandering in task-unrelated thoughts.

Hence, mind wandering can signal individuals that they are bored. A study by Damrad-Frye and Laird (1989) found that individuals may also perceive that they are bored if their attention is distracted by external stimulus when they are performing a task. The effects of distractions on perceived boredom may, however, depend on the nature of the task. For example, Fisher (1998) found that while distractions reduced boredom in tasks that required little attention, they had no effect on boredom in tasks that were designed as complex and interesting. This finding suggests that if a task requires little cognitive effort, additional mental stimuli may alleviate boredom, which explains why engaging in task-unrelated thoughts can be tempting to bored employees. Mind wandering may provide a pleasant alternative in an unpleasant situation (Mooneyham & Schooler, 2013; Smallwood, Fitzgerald, Miles & Phillips, 2009).

Mind wandering is also suggested to explain why boredom may foster creativity, as individuals can incubate creative ideas after having been engaged in an unrelated train of thought (Baird, et al., 2012; Immordino-Yang, Christodoulou & Singh, 2012). Although some empirical studies imply that boredom might have a positive impact on creative problem solving and associative thinking (Mann & Cadman, 2014; Gasper & Middlewood, 2014), the results of these studies warrant further scrutiny. For instance, in the study by Mann and Cadman (2014), boredom was induced by a brief task that was designed as uninteresting, after which the participants completed an assignment assessing creativity. However, the results failed to establish the role of mind wandering in explaining the link between a boring task and creativity.

In another study by Gasper and Middlewood (2014), participants in two experiments were made to watch a dull video clip, which was designed to elicit low positive affect and low arousal, and were then asked to complete a test assessing creative, associative thought. However, researchers themselves concluded that the affect manipulations were not ideal, and that the boredom manipulations could also have induced neutral affect. Hence, they conducted a third experiment in which, instead of affect manipulations, the participants filled out a self-report survey assessing their present affect. Here, the researchers found that only the average score of both boredom and elation was significantly related to associative thought, rendering the role of boredom itself ambivalent. Moreover, they found that sensation seeking mediated this relation, suggesting that the role of affect itself was smaller.

Thus, although some argue that inducing episodes of mind wandering may provide cognitive breaks that yield benefits for creativity and learning (Schooler et al., 2011), empirical evidence has not been convincing on episodic boredom as a catalyst for such a process. More research exists on the negative effects of task-unrelated mind wandering (see Mooneyham & Schooler, 2013 for a review), such as unhappiness (Killingsworth & Gilbert, 2010) and impaired performance in more complex tasks (Beal, Weiss, Barros & MacDermid, 2005) or in tasks that require detailed focus on the external environment (see Schooler, et al., 2011 for a review). Eastwood and associates (2012) suggest that by signaling failure of sustained attention, task-unrelated mind wandering may foster the experience of boredom rather than alleviate it. Mind wandering may enhance the unpleasantness of the experience by underlining that the current situation the individual is in is unwanted (Critcher & Gilovich, 2010). In support of this argument, Fisher (1998) found an association between non-work related thoughts and enhanced boredom, especially when the thoughts were frequent and non-urgent. It may then be that in a prolonged experience of boredom, mind wandering is less about cognitive breaks and more about cognitive escapes which further underscore the unpleasant nature of the situation.

Another often mentioned cognitive characteristic of boredom is a distorted perception of time, namely that of dragging of time (Reijseger, et al., 2013; Fahlman, et al., 2013). Eastwood and associates (2012) suggest that the failure to fully engage attention to the task leads to conscious perception of time, which is why it appears to go by slowly. According to a review by Droit-Volet and Meck (2007), when events capture our attention, we are not focusing on the duration of those events which makes them go by faster. In contrast, when we are restless or frustrated, the events seem to take longer. However, this effect may be counteracted if the situation is familiar, and we can recalibrate our temporal assessments of the duration based on our memory. It may thus be questioned, whether the perception of slow passage of time would remain if the boredom inducing task or situation is familiar or if the experience of boredom persists beyond the boundaries of a specific task.

Moreover, Danckert and Allmann (2005) found in their study that although high boredom prone individuals perceived the duration of a boring task to be longer than low boredom prone individuals, the groups did not show differences in the actual experience of boredom. In the light of this evidence, it may then be that the perception of slow passage of time may be more related to individual differences than to the experience of boredom.

Empirical evidence on the association between boredom and the perception of slow passage of time is conflicting. For example, some suggest that time passes more quickly in simple, routine tasks that can be performed automatically, whereas complex, novel tasks that require conscious control may seem to take longer (see Fisher, 1987 for a review). Fisher (1987) argues that it is unclear which individual and situational factors influence the perception of time in boredom, and therefore subjective estimates of duration, such as perceptions of time passing by slowly, cannot be used as conclusive indicators of the experience. This does not mean that perceiving slow passage of time would not be involved in the

boredom. However, it implies that the time perception in boredom may be more subjective, and thereby more varied, than what has traditionally been perceived by researchers.

2.2.3. Coping with boredom

Boredom involves a motivational component towards reducing the unpleasantness of the experience (Reijseger, et al., 2013; Spector & Fox, 2002). However, some may engage in proactive and productive behaviors, while others may disengage and withdraw from their work in a more passive manner (Skowronski, 2012; Spector & Fox, 2010; Game, 2007). Whether individuals respond to boredom either by seeking novel stimuli or by passiveness may depend on individual differences (Malkovsky, et al., 2012), situational factors (Mikulas & Vodanovich, 1993) or the combination of both (Skowronski, 2012).

Some studies suggest that employees use temporary coping strategies as an immediate response to boredom, such as engaging in distractions (van der Heijden, Schepers & Nijssen, 2012), working more slowly or spending time in non-work activities (van Hooff & van Hooft, 2014). Bored employees may adopt coping strategies that may or may not align with organizational goals, such as when a bored individual seeks more activities by helping colleagues (van Tilburg & Igou, 2016a; Game, 2007; Fisher, 1987) or by engaging in non-work related activities on work time (Wan, et al. 2014; Reijseger, et al., 2013). Thus, the responses employees choose to cope with boredom determine whether the consequences are beneficial or counterproductive from an organizational point of view (Skowronski, 2012; Spector & Fox, 2010).

Game (2007) studied boredom coping strategies of chemical processing plant employees who were classified as “high boredom copers” and “low boredom copers”. High boredom copers had a higher attentional capacity and a better ability to derive enjoyment and interest in their work than low boredom copers. In addition, high boredom copers reported more affective well-being and less depression and anxiety than their low boredom coping colleagues. Based on her interviews with these employees, Game (2007) described three categories of coping strategies: (1) engagement strategies which are directed towards making work more interesting or stimulating, for example, by finding ways to improve performance or framing the task as more personally relevant; (2) partial engagement strategies which refer to activities that aim to reduce the duration of boredom, for example, by setting speed goals or forcing oneself to focus attention and; (3) disengagement strategies which focus on avoiding the task or seeking off-task stimulation, for example, by socializing with colleagues or performing personal tasks.

Based on Game’s study, Skowronski (2012) proposed a typology of boredom coping strategies which involve interest enhancement behaviors that are both beneficial and harmful from organization’s viewpoint. He distinguished between behavioral engaged and behavioral disengaged coping as well as cognitive engaged and cognitive disengaged coping. Behavioral disengaged coping included counterproductive behaviors, such as off-task activities, horseplay, excessive breaking and sleeping whereas cognitive disengaged coping involved daydreaming. Behavioral engaged coping, in turn, included proactive behaviors, such as taking on additional responsibilities, helping other employees, seeking out training opportunities and varying the pace of performing tasks. Moreover, cognitive engaged coping involved activities, such as refocusing attention on tasks, setting personal performance goals, reframing the importance of tasks and expanding vision or thinking of improvements.

To choose a proactive strategy to cope with boredom, employees may need resources to improve their situation (Hobfoll, 1989; 2001). Thus, it may be that employees who experience boredom only

episodically in specific tasks are better equipped to find constructive ways to change their situation. As more persistent boredom is associated with scarce resources (Reijseger, et al., 2013), bored employees may be more inclined to resort to disengaged coping strategies. This may explain why majority of empirical studies associate boredom with counterproductive activities.

2.2.4. Conclusions

Scholars define boredom in different ways. While some perceive boredom strictly as a state of low arousal, others maintain that the experience also involves high arousal indicators, such as restlessness and feelings of frustration. High arousal is argued to be a response to inactiveness, as individuals struggle to maintain attention on unstimulating activity. The longer the experience of boredom persists, the greater the frustration may grow.

Employees may cope with boredom in various ways. Individual and situational factors determine whether a person chooses to employ proactive and engaged coping behaviors, such as helping colleagues, or counterproductive and disengaged coping behaviors, such as online shopping on work time. If little attention is required to perform the task, individual's mind may wander to non-task-related thoughts. Although occasional mind wandering is suggested to foster creativity, frequent mind wandering may enhance boredom. If boredom is experienced only episodically, for example in a specific task, employees may have plenty of resources to cope with the experience. However, if boredom persists, employees may resort primarily to counterproductive coping behaviors.

This dissertation will argue that episodic and persistent boredom at work may, in part, have distinct characteristics. Although the experience of boredom is rooted in low arousal, the characteristics

of episodic, task-specific boredom may not apply for persistent, job-specific boredom. In a more persistent experience of boredom, the affective and physiological manifestations may fluctuate and the time perceptions and coping styles may vary.

2.3.Causes of boredom at work

As discussed earlier, most research agrees that boredom is a response to conditions that are insufficiently stimulating. The level of stimuli, however, can depend on a variety of factors that relate to the characteristics of the task, the working environment and the individual. This chapter will outline the causes of workplace boredom.

2.3.1. Work characteristics

Some researchers maintain that boredom is a state of *non-optimal arousal*, in which individual's desired experiences are not matched by the opportunities provided by the environment (Iso-Ahola & Weissinger, 1987; O'Hanlon, 1981; Csíkszentmihályi, 1975). Studies commonly suggest that boredom is caused by tasks that are routine, monotonous, uninteresting or lack complexity to provide adequate stimulation for the individual (Danckert & Merrifield, 2016; Daniels, et al., 2004; Lee, 1986; Csíkszentmihályi, 1975).

Although work-related ill-being is often associated with work overload, boredom is associated with work *underload* (Schaufeli & Salanova, 2014). Work underload can be either quantitative or qualitative. Whereas quantitative work underload refers to conditions in which there are not enough tasks

to keep employees occupied, qualitative work underload involves a situation where the tasks are not cognitively engaging or do not require individuals to utilize their skills appropriately (Reijseger, et al., 2013; Fisher, 1987). Hence, bored employees lack job demands that are needed for them to become involved and enjoy their work (Bakker, van Veldhoven & Xanthopoulou, 2010).

It is important to note that there are different types of job demands. According to Crawford, LePine and Rich (2010), the relationship between job demands and (dis)engagement depends on the nature of the demands. Their study found that whereas hindrance demands (e.g. role conflict, role ambiguity, red tape) may hamper employee well-being, challenge demands (e.g. high workload, time pressure, job responsibility) may foster work engagement. Congruent to this distinction, boredom is associated specifically with lacking *challenging* job demands (Reijseger, et al., 2013; van Tilburg & Igou, 2012).

Other scholars argue that in addition to a lack of stimulating activity, excessive stimuli may also contribute to boredom (Iso-Ahola & Weissinger, 1990; Klapp, 1986). Mael and Jex (2015) suggest that as information technology has filled the world with ever increasing, rapidly appearing and disappearing stimuli, individuals' attention spans may have decreased, which is why they may perceive many aspects of their work environment as boring. Individuals differ in their sensitivity to stimuli. For example, introverted personalities may be more sensitive to report boredom in the presence of distracting stimuli than extroverted individuals (Damrad-Frye & Laird, 1989). Congruently, some studies suggest a relation between qualitative overload and boredom if the demands of the tasks are beyond the individual's capabilities (Acee, et al. 2010; Pekrun, 2006; Fisher, 1987). Hence, the amount of sufficient demands is relative to the employee's skills (Pekrun, 2006; Csíkszentmihályi, 1975). Although high individual capabilities may contribute to more boredom in simple tasks (Drory, 1982), they can provide a sense of control in demanding tasks and, as such, protect employees from boredom (Pekrun, et al., 2010).

Other research suggests that boredom results from the individual's inability to engage in satisfying activities despite a desire of doing so (Eastwood, et al., 2012; 2007; Watt & Blanchard, 1994; Damrad-Frye & Laird, 1989; Fenichel, 1951). This may be due to constraints in the work environment, such as standardization, organizational rules and red-tape, which may prevent employees from engaging in task performances (Schaufeli & Salanova, 2014; Loukidou, et al., 2009; Fisher, 1993). Constraints can also relate to the social environment of work. Although social relations are found to protect employees from experiencing boredom in otherwise uninteresting jobs (Lopata, Norr, Barnewolt & Miller, 1985; Roy, 1959), social tensions (Parasuraman & Purohit, 2000) or unfriendly and unsupportive co-workers may also cause boredom at work (Reijseger, et al., 2013; Loukidou, et al. 2009; Fisher, 1987). Moreover, Fisher (1993) proposes that if co-workers provide social cues that they are bored, individuals may report more boredom than they would otherwise. Seen from this perspective, boredom, like other emotions, may be contagious across team members (Barsade, 2002).

2.3.2. Lack of meaning

When individuals experience their jobs as meaningful, valuable and worthwhile, they can become motivated and engage in their task performances (Kahn, 1990; Hackman & Oldham, 1976). Conversely, if work activities lack meaning to individuals, they may become bored and disengage from their work (Johnsen, 2016; van Tilburg & Igou, 2012; Pekrun, 2006; Barbalet, 1999).

Meaning of work does not necessarily depend on task characteristics. Barbalet (1999) suggests that if activities, such as repetitive or monotonous tasks, are perceived as means to a meaningful end, the individual does not necessarily become bored with the activity. Studies have shown that employees can

also compensate for the lack of meaning in their job content by deriving meaning from the work environment, such as from the social relationships at work (van Tilburg & Igou, 2016a; Isaksen, 2000; Roy, 1959). Lopata, Norr, Barnewolt and Miller (1985) studied female clerical workers and found that despite of performing mostly repetitive, low complexity tasks, they did not perceive their jobs as monotonous. By focusing on their relationships at work, the clerical workers experienced satisfaction and engagement, although their tasks held little meaning for them.

Meaning of work encapsulates individual's personal values and goals concerning one's work. As such, deriving meaning from work is a subjective affair. Individuals may find low complexity tasks meaningful (Tsai, 2016; Isaksen, 2000) while experiencing too demanding tasks as meaningless (Acee, et al., 2010; Barbalet, 1999). Hence, the absence of meaning explains why objectively complex and autonomous jobs may be experienced as boring by the employee (Hill & Perkins, 1985). In such cases, there may be a mismatch between a work situation and the individual.

Isaksen (2000) distinguishes three levels of meaning in work: (1) general meaningfulness of working which refers to meaning of work on an abstract level (e.g. what is the meaning of working at all); (2) general meaning of work which refers to meaningfulness of a specific type of job (e.g. what is the meaning of being a researcher) and; (3) personal meaning of work which refers to individual's own assessment of the meaning of one's work (e.g. do I, as a researcher, find my work meaningful). General and personal meanings of work do not necessarily align. For example, a researcher may find the general meaning of research work high while perceiving low personal meaning in her job, as it is strained by hindrances that keep her from doing actual research work.

Hence, meaning is not a characteristic of specific jobs, as it is created in individual's interaction with one's working environment (Isaksen, 2000). Wrzesniewski, McCauley, Rozin and Swarchz (1997) suggest that individuals may adopt at least three different orientations to the same job: they can think of

it (1) as ‘a job’ in which case they focus on monetary rewards and see their work as a boring necessity; (2) as ‘a career’ in which case they focus on advancement or; (3) as ‘a calling’ in which case they experience the work itself as fulfilling and meaningful.

Kahn (1990) found that the more the work roles aligned with and positively reinforced individuals’ sense of themselves, the more meaningfulness was experienced. Conversely, individuals may experience their work as meaningless if their work activities conflict with their personal values (Fahlman, Mercer, Gaskovski, Eastwood & Eastwood, 2009; Barbalet, 1999) or with their preferred work identities (Kira & Balkin, 2014). If employees are not able to work in a meaningful way, disengagement and boredom may emerge from the misalignment of self and work.

2.3.3. Individual characteristics

In addition to a boredom prone personality, there are also other person-related factors that may contribute to boredom. Individuals may perceive a work activity as interesting and engaging if it helps their progress towards personal goals they value (Daniels, et al., 2004). For example, if individuals place high value on professional growth, they find tasks that require learning new skills more engaging. In contrast, if they perceive they are no longer learning anything new in their jobs, they may become bored. In addition, Daniels, Harris and Briner (2004) suggest that boredom may emerge in situations in which the achievement of work-related goals does not require cognitive effort and the action is directed automatically. This can occur, for example, when work activities have become so routine that they can be performed without focused attention. This implies that to offset boredom, employees’ work-related goals should be both personally valued and complex enough to be engaging.

As with other affective responses, boredom at work is determined by the subjective attributions of work situations (Mackey & Perrewé, 2014; Daniels, et al., 2004; Todman, 2003). Bored employees are acutely aware of their inability to engage in the activities they would like to and attribute this impairment to the environment (Eastwood, et al., 2012). This means that unless a constraining or a monotonous work environment is *appraised* as boring and unpleasant, it does not cause boredom (Mikulas & Vodanovich, 1993). Hence, boredom at work depends on subjective evaluations of a situation and may thereby vary across individuals. For example, some may find a task dull and tedious, whereas others may enjoy performing it.

In addition to personal goals and subjective appraisal of events, other individual factors may also play a role in experiencing boredom. Fisher (1993) suggests that employees' work experience has an impact on how boring they perceive their tasks. More experienced employees may have learned to see and appreciate the variety in a work activity and may, consequently, find their jobs less boring than employees with less of such knowledge.

Moreover, individuals with higher intellectual capacity may become bored more easily than their less intelligent peers, as they may find the same tasks less challenging (Fisher, 1993). There is some evidence that employees with higher mental capacity would experience more boredom in monotonous tasks (Drory, 1982). However, as Fisher (1993) notes, due to lack of empirical research it cannot be determined whether lower mental capacity would, in turn, predict more boredom in complex tasks. Similarly, although employees with higher education are suggested to be at more risk to experience boredom at work (Loukidou, et al., 2009), empirical studies have not yet supported this argument.

Some researchers argue that the causes of persistent, situation independent, boredom may be pathological and involve repressed desires (Fenichel, 1951) or mental health issues (Mael & Jex, 2015). In such cases, boredom may be caused by individual's impaired ability to become interested in an

activity, although the experience may be attributed to the external environment (Eastwood, et al., 2007; Fenichel, 1951). Congruently, boredom is suggested to result from poor attentional capacity which inhibits individuals from becoming cognitively involved in an activity (Martin, Sadlo & Stew, 2012). Eastwood and associates (2012) note that these chronic attentional deficiencies (e.g. ADHD) should be distinguished from momentary failures to engage attention that characterize the experience of boredom. These pathological attentional factors are associated with a type of boredom which stretches beyond the boundaries of work and, as such, the scope of this dissertation. However, the purpose of including these examples in the overview is to describe the different mechanisms through which different types of boredom experiences may emerge.

2.3.4. Conclusions

Boredom is associated with jobs that lack specific work characteristics that stimulate employees and bring meaning to their work. For example, employees can become bored if they lack challenging job demands but also if the demands of the job are excessive. The level of sufficient job demands depends on employee's skills and the opportunities to fully use them in one's job. Social relationships at work may either protect employees from boredom by providing additional stimuli and meaning or enhance the experience of boredom in the case of social tensions and unsatisfying interpersonal relationships.

Boredom at work is a subjective experience that depends on how individuals appraise work situations. Objective work characteristics, such as monotony, do not evoke boredom among all employees. Individuals can become bored regardless of the complexity of their job if they perceive their work activities lack meaning. Meaning of work can be lost if work activities do not align with employee's personal values and preferred work-identity. Boredom can also emerge if employees are not able to

achieve their personal goals at work or if the job has become so routine that the attainment of work goals requires little effort.

In this dissertation, episodic and persistent boredom at work are considered as different types of experiences. As such, they may involve distinct causes. For example, an episodic occurrence of boredom may be tied to a specific task or work situation, whereas a more persistent type of boredom may involve causes that concern the job more broadly. One of the aims of this dissertation is to explore the contexts in which boredom emerges in contemporary workplaces.

2.4. Preventing boredom at work

According to COR theory, employees may accumulate their resources to proactively cope with "early warning signs of some impending problems" (Hobfoll, 2001, p.352). If boredom at work emerges when employees lack sufficient stimuli and meaning in their jobs, employees may offset the experience by shaping their jobs to better match their skills and motivations. Next, I will present job crafting as a way of proactively coping with boredom at work.

2.4.1. Job crafting

Job crafting captures diverse activities that employees initiate to create more meaningful and motivating jobs for themselves (Tims, Derks & Bakker, 2016; Niessen, Weseler & Kostova, 2016; Lu, Wang, Lu, Du & Bakker, 2014; Kira & Balkin 2014; Wrzesniewski & Dutton, 2001). The idea of job crafting differs from that of job design (Hackman & Oldham, 1976), in which employees' work

experiences and motivation are perceived as a product of job characteristics that are to be assessed and, if necessary, changed by managers instead of employees. Job crafting does not contrast the job design perspective, but rather complements and extends it by highlighting individuals as active agents who participate in bottom-up redesigning of their work and its environment (Demerouti, 2014; Tims & Bakker, 2010; Oldham & Hackman, 2010).

Wrzesniewski and Dutton (2001) present three categories of job crafting activities: (1) first, employees can change the boundaries of their work tasks, for example, by adjusting the number, scope or type of activities one engages in while at work; (2) second, employees can change the relational boundaries of work, for example, by modifying the number or quality of social relationships or encounters at work; (3) third, employees can chance their cognitive task boundaries, for example, by altering how one perceives the job or the work role.

More recently, Tims, Bakker and Derks (2012) introduced *expansive* job crafting behaviors that can create more stimulating jobs. These activities involve: (1) increasing structural job resources (e.g. by seeking variety in tasks or improving one's own expertise or work processes); (2) increasing social job resources (e.g. by seeking supervisor coaching, feedback or social support) and; 3) increasing job challenges (e.g. by volunteering in new projects, taking on additional tasks or cognitively reframing one's work role). In addition, they present one more type of job crafting, namely (4) reducing hindering job demands (e.g. by minimizing stressful encounters at work or reducing the number of tasks).

Tims and associates (2012) define job crafting as the changes employees make to better balance their job demands and job resources with their personal needs and abilities. Whereas Wrzesniewski and Dutton (2001) characterized job crafting as changes employees initiate in their work tasks, work relationships or work-related cognitions, Tims and associates (2012) also consider shaping one's own abilities, such as improving professional skills, as job crafting.

According to van Hooff and van Hooft (2014), expansive job crafting may be an effective coping strategy for bored employees, as increasing job challenges and job resources can make work more stimulating, interesting, meaningful and satisfying. Their study among Dutch employees found that the more employees increased job challenges and structural job resources, the less they resorted to disengaged coping behaviors, such as day-dreaming or focusing on non-work related activities. Furthermore, job crafting was found to mitigate the relation between boredom at work and distress as well as counterproductive work behaviors. In their study, particularly increasing structural job resources was negatively related to job boredom. However, because of cross-sectional study design, the direction of the relationship could not be determined. Thereby it is not known whether job crafting activities reduce boredom at work or vice versa.

2.4.2. Consequences of job crafting

Job crafting provides a way for employees to enhance their own motivation and involvement at work (Wrzesniewski & Dutton, 2001). In support of this, job crafting is associated with higher work engagement (Bakker, Rodríguez-Muñoz & Vergel, 2016; Vogt, Hakanen, Brauchli, Jenny & Bauer, 2016; Tims, Bakker & Derks, 2012; Petrou, Demerouti, Peeters, Schaufeli & Hetland, 2012), lower exhaustion (Petrou, Demerouti & Schaufeli, 2015), higher job satisfaction (Nielsen & Abildgaard, 2012), better adaptivity to changes (Peeters, Arts & Demerouti, 2016), better task performance (Petrou et al., 2015) and better colleague-rated in-role performance (Bakker, Tims & Derks, 2012). In addition to increasing employees' own work engagement, a recent dyad study found that job crafting may also increase colleagues' job crafting and, consequently, colleagues' work engagement (Bakker, Rodríguez-Muñoz &Vergel, 2016).

As a specific proactive behavior, job crafting is closely related to, but conceptually distinct from, other proactive behaviors, such as organizational citizenship behavior (Niessen, et al, 2016). Organizational citizenship behavior (OCB; Organ, 1997) refers to employees' proactive undertakings to help the organization or others in the organization. Whereas the goal of OCB is to benefit the *organization*, the purpose of job crafting is to benefit the *individual*. However, as Wrzesniewski and Dutton (2001) note, job crafting may also be good for organizations. Consider, for example, an employee who improves a work process while seeking to make her own work more efficient and satisfying.

This does not mean that the consequences of job crafting are always positive or that they are acknowledged in organizations. For example, if a bored employee reduces her job demands by only doing tasks she enjoys while leaving the dull and tiresome tasks for her fellow team members, the well-being of her colleagues may suffer. Moreover, recent studies have found a negative relation between reducing job demands and job satisfaction (De Beer, Tims & Bakker, 2016) and a positive relation between reducing job demands and future exhaustion (Petrou, Demerouti & Schaufeli, 2015). Furthermore, managers or coworkers do not necessarily notice if an employee voluntarily takes on extra activities. Job crafting primarily serves and benefits employees' goals, and whether it is good or bad from the viewpoint of the organization may depend on the situation and the possibilities employees have for crafting their jobs (Wrzesniewski & Dutton, 2001).

2.4.3. Conditions of job crafting

Wrzesniewski and Dutton (2001) emphasize that the motivation to craft a job most likely arises in a situation where there is a discrepancy between individual's needs and one's job. According to them,

employees may craft their jobs if they need to assert control over their tasks, create a positive self-image and/or connect with others at work. Conversely, employees may be less motivated to craft their jobs if their needs are met in the current work situation or outside the boundaries of their work. This view echoes that of Brandstädter (1989), who suggests that if individuals are satisfied with their personal situation, they are less likely to take action towards change and more likely to be content with status quo.

In a recent study, Niessen, Weseler and Kostova (2016) found that especially the need for positive self-image predicted increased job crafting. They also found that the need to connect predicted increased relational job crafting, but only if individuals had high self-efficacy which refers to the belief in one's ability to reach goals (Bandura, 1977). When self-efficacy was low, the need to connect decreased relational job crafting behaviors. This finding implies that before motivation to job craft turns into action, employees need to believe that they *can* craft their jobs. Without the experience that they can initiate change, employees may not have the confidence to act (Brandstädter, 1989). Other individual-related factors may also play a part in initiating job crafting activities. For example, job crafting may be more common among employees who have proactive personalities (Bakker, Tims & Derks, 2012) or longer organizational tenure (Niessen, et al., 2016) and who are engaged at work (Vogt, et al., 2016; Lu, et al., 2014).

The social environment of work can enhance or limit the opportunities for job crafting. If work is strictly monitored by supervisors, or if one's tasks are closely tied to others' tasks, employees may perceive less autonomy to decide how they perform their work (Wrzesniewski & Dutton, 2001). Congruently, employees are found to craft their jobs more on days when they perceive both increased job demands and autonomy to make changes to their work (Petrou, et al., 2012). It may be that at a day-level, higher job demands motivate individuals to use the autonomy they have to seek more job resources. However, without such an incentive, opportunities for action do not necessarily facilitate job crafting.

For example, Niessen and associates (2016) found no link between autonomy and job crafting, nor between task interdependency and job crafting, when testing the relations over a two-week study period.

Wrzesniewski and Dutton (2001) stress that as job crafting takes place within the defined boundaries of a job, the context of work necessarily determines what type of crafting activities are possible for an employee. However, they argue that influencing some aspects of tasks and the social relationships at work can be done even in the most restricted and routine jobs. Empirical studies have supported this notion by finding that lower ranked and blue-collar employees seek to craft their jobs as well, although the opportunities and actions may differ from those of white-collar employees and skilled workers (Nielsen & Abildgaard, 2012; Berg, Wrzesniewski & Dutton, 2010). Isaksen (2000) found that employees in repetitive jobs used strategies akin to cognitive and relational job crafting to create more meaningful jobs for themselves. For example, they created attachment to the workplace and its procedures, regarded the job as a necessary part of a larger, more meaningful context and engaged in the social relations of the workplace.

2.4.4. Conclusions

Employees can initiate job crafting activities to fulfill their needs at work and to shape more motivating and meaningful jobs for themselves. Consequently, numerous studies associate job crafting with better employee well-being and work performance. However, job crafting can also have negative consequences. For example, studies have linked reducing job demands with lower job satisfaction and higher exhaustion. This dissertation focuses on expansive job crafting behaviors, namely increasing job resources and job challenges, which are suggested to create more stimulating and engaging jobs.

Jobs can be crafted in different ways and in different types of work. However, some employees may be in a better position to craft their jobs than others. In addition to a motivation to initiate job crafting, employees also need to perceive they have opportunities to do so. Having capability and autonomy to make changes in one's work may spur job crafting activities. In contrast, work characteristics which hamper employees' autonomy may discourage job crafting.

COR theory posits that individuals seek to accumulate their resources to protect their well-being and to proactively cope with impeding problems. However, if individuals lack resources, they may not build them further. In other words, the more resources employees have at work, the better equipped they are to increase their job resources and job challenges. Conversely, bored employees may have less energy and motivation to craft their jobs. Hence, this dissertation focuses on the role of expansive job crafting activities in preventing boredom at work from setting in.

3. Methods

3.1. Study procedure

Both quantitative and qualitative data were used in this dissertation. All data were collected among Finnish employees, who worked in diverse organizations that had volunteered to participate in the study. Quantitative data was collected at two time points in 2011 and in 2014. The qualitative dataset was gathered by interviewing employees and supervisors in four organizations in 2013. The sample procedure of the studies in this dissertation is illustrated in Figure 4.

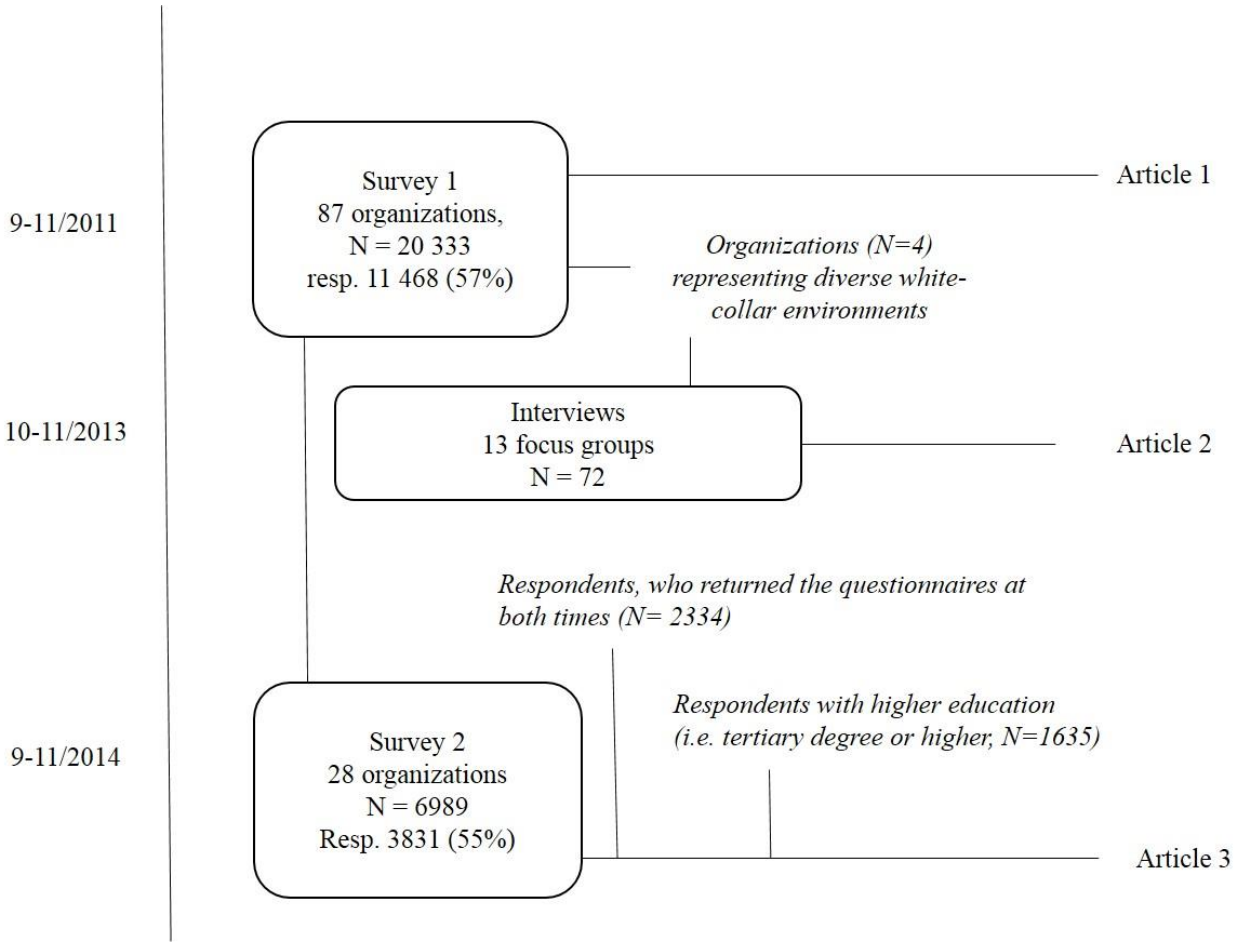

Figure 4. Sample procedure of the studies

3.1.1. Quantitative data

The first wave of quantitative data, which was used in the Article 1, was collected in 2011. Either an electronic or a postal survey questionnaire was sent to a total of 20 333 employees from 87

organizations that represented different industrial sectors and geographical regions in Finland. The employees were informed that the participation was voluntary and that their responses were kept anonymous and confidential (more information of the study procedure can be found in Article 1 and Article 3).

The participants were sent one or two reminders to fill out the questionnaire. In addition, each organization had assigned a contact person who was instructed to remind and encourage the employees to return the questionnaire. Altogether 11 468 employees returned the questionnaire yielding a 57% response rate (Figure 4).

All the organizations that took part in the study in 2011 were invited to participate again in the second wave of data collection in 2014. Out of the 87 organizations, 28 volunteered in the study also in 2014. As a reason for dropping out, many of the organizations reported that they had undergone major changes during the study period or had other surveys taking place simultaneously. The questionnaire was sent to 6 989 employees and returned by 3 831 respondents. Thus, the response rate at the second wave of data collection was 55%. Altogether 2 334 respondents returned the questionnaire at both times and could therefore be included in a longitudinal panel (Figure 4).

Characteristics	Study 1	Study 3
Base population	20 333	6989
Study population	11 468	1635
Organizations	87	28
Female (%)	81	85
Mean age in years (SD)	46.2 (10.5)	46 (9.11)
Permanent employment contract (%)	87%	91%
Data source: Questionnaire (response rate %)	2011 (57%)	2011 (57%) 2014 (55%)

Table 1. Descriptive statistics of the study samples

Table 1 shows the descriptive statistics of the study samples. The full sample of participants (N= 11 468) was used in the first study of this dissertation (Article 1). The mean age of the respondents was 46.2 years (SD= 10.5), and 81% of the sample comprised of women. Most the respondents (87%) had a permanent employment contract.

The third study of this dissertation (Article 3) used a sample of employees with a higher education (i.e. tertiary degree or higher; N=1 635) who had returned the questionnaire at both times (Figure 4). The mean age of the sample was 46 years (SD = 9.11), 85% were female and 91% were employed on a permanent job contract (Table 1). The respondents worked in various occupations in public and private sector organizations (see Article 3 for more information of the sample).

Female employees and older age groups were over-represented in both studies as compared to the general working population of Finland. In the first study (Article 1), weighting adjustment was used in the analyses to correct for the possible bias caused by this over-representation. However, the sample

remained over-represented for employees who worked in health and social work services (34% in the sample vs. 16% on the general population) and who had a higher university education (36% vs. 13%; see Article 1 for a detailed description). Thus, the samples were not representative of the total working population in Finland.

3.1.2. Qualitative data

The second study of this dissertation employed data from 13 focus group interviews (N=72) in four organizations that had participated in the study in 2011 (Figure 4). Participant organizations were sampled to represent diverse white-collar working environments and professions in different parts of Finland. These included a public sector organization in early childhood education and three private sector organizations which provided IT services to businesses, health care services and banking services, respectively. All organizations volunteered to participate in the interviews.

Focus group interviews were conducted separately for both supervisors and employees in each organization. Altogether, the interviews included 5 focus groups for supervisors and 8 focus groups for employees. Each group had six participants on average. The participants of the groups were chosen by the contact person of the organization who was instructed to choose people who were demographically diverse (age, career length, gender etc.). The informants included customer service and sales personnel, doctors, nurses and other health care professionals, early childhood educators as well as employees in various clerical and expert positions ranging from assistants and coordinators in HR and financial management to lawyers and IT-developers.

The participants were interviewed using an open-ended, semi-structured format. The length of an interview was approximately two hours. To cover the main points of interest, the discussion was steered to concern affective-motivational experiences at work. The focus was on the participants' own descriptions of job boredom experiences. All interviews were recorded and transcribed word by word (see Article 2 for more detailed description of data procedure).

3.2. Measures

The two quantitative studies (Article 1 & 3) in this dissertation included measures of employee well-being, work behavior (i.e. job crafting), and work-related attitudes. A summary of the study variables, the number of items and the internal consistency reliabilities (Cronbach's α) are presented in Table 2. Age and gender were controlled in the third study (Article 3) based on the findings of the first study (Article 1) as well as on those of previous studies (see Loukidou, et al., 2009, for an overview). Further information of the covariates included in the studies can be found in the original articles (Article 1 & 3).

3.2.1. Employee well-being

Employee well-being was assessed with sum scale variables describing affective well-being, namely job boredom (Article 1 & 3) and work engagement (Article 3), as well as three single-item variables describing self-rated health, self-rated workability and stress symptoms, respectively (Article 1; see Table 2).

Job boredom was measured using the Dutch Boredom Scale (DUBS; Reijseger, et al., 2013) which consists of six items loading on a single factor that captures the affective, cognitive and behavioral aspects of job boredom (e.g. "I feel bored in my work"). Participants responded on a seven-point Likert scale ranging from 0 (never) to 6 (very often).

The instrument development study found the scale's internal consistency reliability (Cronbach's α) to be .87 (Reijseger, et al., 2013). One factor structure of the DUBS has also been confirmed in a study among South African employees, in which the internal consistency reliability of the scale was .78 (Van Wyk, de Beer, Pienaar & Schaufeli, 2016). In the studies of this dissertation, the internal consistency reliability scores of the DUBS were .85 and .88 (Table 2).

Work engagement was assessed with the nine-item version of the Utrecht Work Engagement Scale (UWES-9; Schaufeli, Bakker & Salanova, 2006) that measures the three dimensions of work engagement: Vigor (e.g. "At work, I feel like I am bursting with energy"), dedication (e.g., "I am enthusiastic about my job") and absorption (e.g. "I am immersed in my work"). The items were scored on a seven-point scale from 0 (never) to 6 (every day).

Upon development of the instrument, Schaufeli and associates (2006) found that the scale's internal consistency reliabilities (Cronbach's α) exceeded .85 in samples from ten different countries. The scale has also been previously validated in Finland in a sample representing various industries (N=16 335) with an internal consistency reliability of .91 (Hakanen, 2009). In the third study of this dissertation (Article 3), UWES-9 had an internal consistency reliability of .95 at both measurement points (Table 2).

Study variables and the number of items	Cronbach's α		
	Study 1	Study 3	
Employee well-being		T1	T2
Job boredom, 6 items	.85	.85	.88
Work engagement, 9 items		.95	.95
Self-rated workability, 1 item			
Self-rated health, 1 item			
Stress symptoms, 1 item			
Work behavior and attitudes			
Increasing structural job resources, 5 items		.74	.78
Increasing social job resources, 5 items		.78	.78
Seeking job challenges, 5 items		.79	.80
Turnover intentions, 1 item			
Early retirement intentions, 1 item			

Table 2. Study variables, number of items and internal consistency reliabilities (Cronbach's α)

Self-rated health was measured by one question: "How do you rate your health compared with peers of your own age?" The response options ranged from 1(very poor) to 5 (very good). The item is found to be a valid measure of health and comparable to, or even better than, more specific questions on health (Lundberg & Manderbacka, 1996).

Self-rated workability was assessed by one question asking respondents to rate their workability on a scale from 0 to 10: "Assume that your workability at its best has a value of 10. How many points would you give your current workability? (0 means that you are currently not able to work at all)". This single-item question was derived from the Work Ability Index (WAI) questionnaire (Tuomi, Ilmarinen, Jahkola, Katajarinne & Tulkki, 1998). A strong association has been found between the total WAI score

and the single item indicator (Ahlstrom, Grimby-Ekman, Hagberg & Dellve, 2010). As such, the item is considered as a valid measure of workability (Van den Berg, Elders, Zwart & Burdorf, 2009).

Stress symptoms were measured using one item from the Occupational Stress Questionnaire (OSQ; Elo, Leppänen, Lindström & Ropponen, 1992): "Stress refers to a situation in which a person feels tense, restless, nervous or anxious or is unable to sleep at night because of his or her mind is troubled all the time. Have you felt this kind of stress recently?" (See Article 1 for validity information). This item was scored on a five-point scale ranging from 1 (not at all) to 5 (very often).

3.2.2. Work behavior and attitudes

Job crafting was examined with a 15-item measure (Tims, Bakker & Derks, 2012) that comprises three dimensions of expansive job crafting: Increasing structural job resources (e.g. "I try to learn new things at work"), increasing social job resources (e.g. "I ask others for feedback on my work performance"), and seeking challenging job demands (e.g. "If there are new developments, I am one of the first to learn about them and try them out"). The items were scored on a five-point scale (1 = never to 5 = very often). In the scale development study, internal consistency reliabilities (Cronbach's α) ranged from .76 to .82 for increasing structural job resources, from .73 to .82 for increasing social job resources and from .75 to .77 for seeking challenging job demands. The reliability scores for the job crafting scales in this dissertation ranged from .74 to .80 (Table 2).

Employee's turnover intentions were measured in the Article 1 with one item: "I often think about resigning from my current job" (1 = disagree to 5 = completely agree). The variable has been previously validated in a Finnish context (Hakanen, Rodriguez-Sánchez & Perhoniemi, 2012).

Retirement intentions were measured by one question on a four-point scale: "Have you considered retiring before the normal retirement age?" (1 = no, never; 2 = yes, sometimes; 3 = yes, often; 4 = I have already sent in my retirement application). This measure has been previously shown to predict actual retirement in a Finnish context (e.g. Huuhtanen & Tuomi, 2006).

All aforementioned single-item variables were used as dependent variables in the first study of this dissertation. For that purpose they were dichotomized into two categories, where the value "1" reflected not poor well-being / work attitudes and the value "2" described poor well-being / work attitudes (see Article 1 for a detailed description).

3.3. Analyses

Different study designs were used in each study. In the first study (Article 1), a cross-sectional study design was used to examine how often job boredom is experienced in different employee groups and its relation to employee well-being and job-related attitudes. In the second study of this dissertation (Article 2), an exploratory, inductive approach was utilized to analyze the qualitative data. Lastly, the third study (Article 3) employed a cross-lagged panel design to investigate relations between job crafting, job boredom and work engagement. In the following, both statistical and qualitative methods of analyses are presented in brief. Further details of the analyses can be found in the original articles (Articles 1-3).

3.3.1. Statistical analyses

In the first study of this dissertation (Article 1), univariate analyses of variance (ANOVA) was used to examine job boredom across demographic and occupational groups. The differences between the categories of the independent variables were analyzed with 95% confidence intervals of the means. In such a large sample (Table 1), even practically irrelevant differences among groups may become statistically significant. Thus a rigorous significance level of $p<0.001$ was used and effect sizes (eta squared = $\eta 2$) were also provided. Effect sizes of $\eta 2< 0.01$ (1% of variance accounted for) or below were considered irrelevant from a practical point of view.

A step-wise logistic regression analysis and Odds Ratio (OR) estimates were then used to assess how strongly job boredom was associated with employee health and work-related attitudes. Logistic regression was carried out in three steps. In the first step, demographic variables (i.e. age, gender and education) were included in the model. In the second step, occupational variables (i.e. employment status, employment contract and industrial sector) were added. Job boredom was included in the third step, and as a final step the interaction terms (e.g. age x job boredom) were added to the model. All analyses were conducted using SPSS 18.0 software.

In the third study (Article 3), MPlus software (Múthen & Múthen, 2012) and the robust maximum likelihood (MLR) estimator were used for all analyses. The overall measurement model was first tested by performing confirmatory factor analysis on ten latent, correlated variables. These represented five factors measured at two time points: job boredom (represented by its six items), work engagement (represented by its sub-dimensions: vigor, dedication and absorption) and three dimensions of job

crafting, namely increasing structural job resources, increasing social job resources and seeking job challenges (each represented by their five respective items).

The initial measurement model (χ^2 = 7092.111, *df* = 1630, *p*<.001; RMSEA =.05; SRMR =.06; CFI = .90; TLI= .90) showed an acceptable fit. However, modification indices suggested that the fit could be improved by allowing the error terms for the items "During work time I daydream" and "I tend to do other things during my work" to correlate because of their overlapping item content. The resulting measurement model showed a slightly better fit (χ^2 = 6771.064, *df* = 1628, *p*<.001; RMSEA =.05; SRMR=.06; CFI = .91; TLI= .90).

Furthermore, the invariance of factor loadings over time was assessed by comparing a model, in which the factor loadings of each latent variable were constrained as equal over measurement occasions, to a model in which the factor loadings were unconstrained over time. The model comparison indicated that the factor loadings remained constant across measurement points.

As the study variables were practically one dimensional (i.e. the correlations between the sub-dimensions of work engagement ranged from .83 to .89 and can thus be considered as a single dimension; Schaufeli, et al., 2006), a model with observed variables was specified to allow for a more parsimonious model to be fitted to the data. A full panel analysis was then used to test all study hypotheses simultaneously. This model (χ^2 = 70.866, *df* = 8, *p*<.001; RMSEA = .07; SRMR=.03; CFI= .99; TLI=.93) included all lagged effects between the three job crafting behaviors, job boredom and work engagement. In addition, lagged effects between the three job crafting behaviors were added.

3.3.2. Qualitative analysis

In the second study of this dissertation (Article 2), an inductive approach was employed to explore and identify employees' own, unique descriptions of boredom at work and the contexts of its emergence. Atlas.ti software was used for managing and coding the data. The methods of analysis were informed by grounded theory (Locke, 2001; Strauss and Corbin, 1998).

Data analysis was iterative and it was performed in three stages. First, a thematic coding framework was constructed around the central aim of identifying the data indices that described experiencing boredom at work. Following this, a more focused coding scheme was outlined to identify the factors associated with boredom at work. Data categories were then constructed and organized under more abstract themes. This structuring of the data is illustrated in Figure 5.

The analysis procedure for the qualitative data followed that of Gioia and colleagues (2013). The first order concepts were further developed into second order themes on the basis of commonalities among initial categories, after which the themes were aggregated into concluding dimensions (Figure 5).

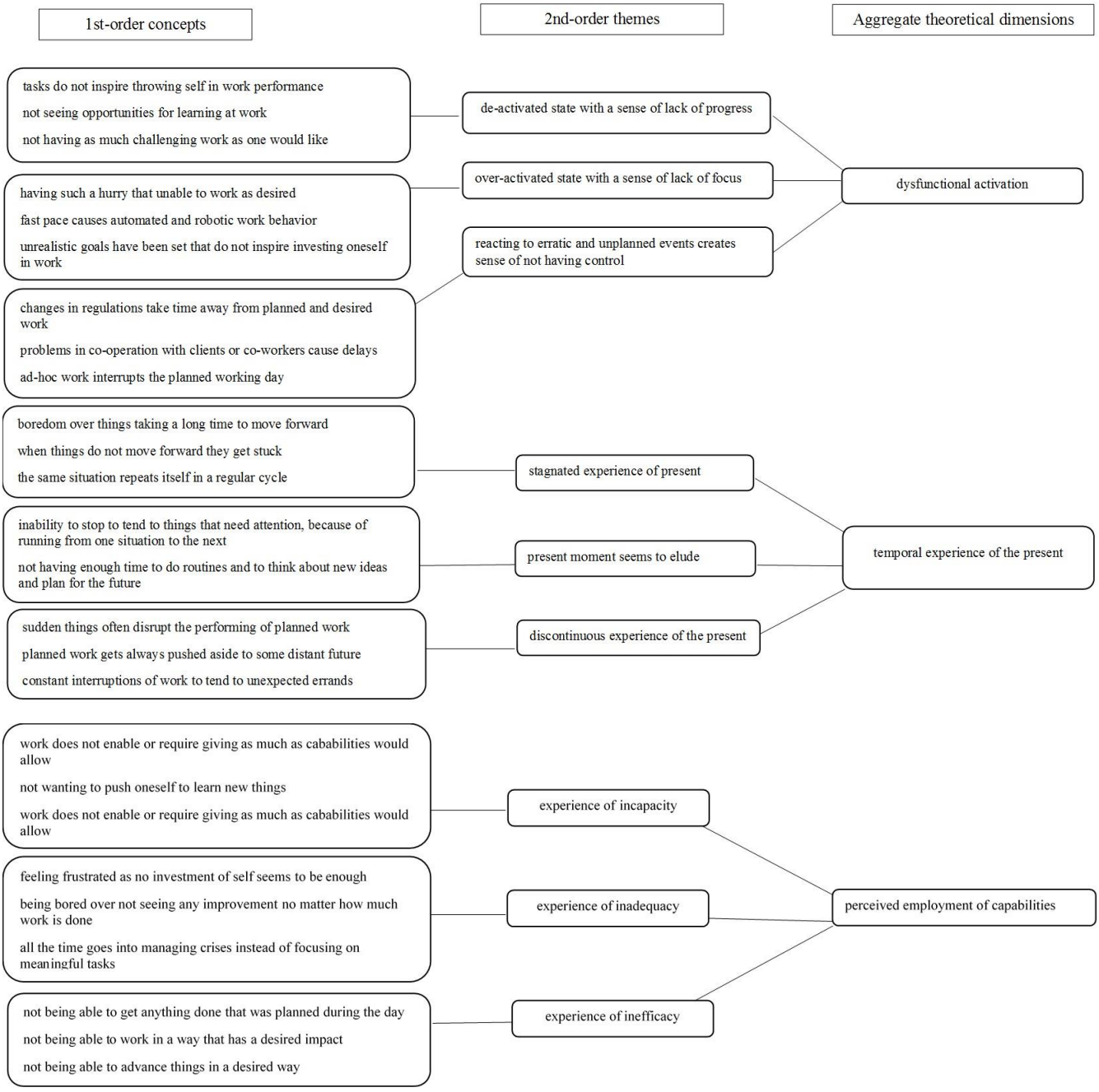

Figure 5. Data structure

4. Results

In this chapter the findings are presented in brief. Table 3 presents a summary of the main findings, concerning the experience and context of boredom at work and its relation to employee behaviors (i.e. job crafting) and attitudes and employee well-being. More detailed description of the results can be found in the original articles (Article 1-3).

4.1. Job boredom across employee groups and its relation with employee well-being and attitudes

The first main aim of this thesis was to investigate the differences in the prevalence of job boredom across demographic and occupational groups and to examine the associations between job boredom, self-rated health, workability, stress symptoms and job attitudes. Overall, the mean scores of job boredom in different demographic and occupational groups were low, as they ranged from 0.7 (SD = .70) to 1.58 (SD=.97). Consequently, only small differences in job boredom were found across different employee cohorts.

Boredom at work was found to concern employees in different industrial sectors. Employees who experienced job boredom the most often worked in transportation and storage (M = 1.58 SD = 0.97), arts, recreation, and entertainment (M = 1.46 SD = 0.92), and manufacturing (M = 1.43 SD = 0.90). The lowest mean scores of boredom were reported among employees in banking and insurance (M = 0.84 SD = 0.72), healthcare and social work (M = 0.88 SD = 0.67) and education (M = 0.96 SD = 0.79).

Article	The experience of boredom at work	Contexts of boredom at work	Employee behavior and attitudes	Employee well-being
1	The overall levels of job boredom in different demographic and occupational groups are low. Job boredom is experienced in both blue and white-collar work. The differences in the levels of job boredom across employee cohorts are small. Job boredom is reported more among male than female employees and among younger employees.		Bored employees may be more likely to quit their jobs or to retire early. The association between job boredom and early retirement may be particularly strong among male employees.	The more often boredom is experienced, the more likely employees are to report poor health, poor workability and stress symptoms. These associations may be stronger among employees with lower education.
2	In addition to the traditional view of job boredom, different types of boredom experiences may also exist in white-collar work. The experience of boredom involves dysfunctional activation, underutilization of individual capabilities and a distorted sense of time.	Three types of boredom contexts involve: (1) Lack of opportunities to learn at work: the job may be a poor fit, too routine or not have sufficiently challenging activities. (2) Lack of opportunities to focus on meaningful work: the job demands and pace of work may be excessive and/or the goals of work unrealistic. (3) Lack of control over work activities: task-related interruptions, problems in co-operation or red-tape may disrupt the workflow.		
3	Job boredom is a stable construct. Age is negatively and male gender positively related to job boredom.		Boredom at work may reduce future job crafting activities, while work engagement may enhance job crafting. Seeking more challenges may foster increasing job resources in the future and vice versa. Age is negatively related with seeking more job challenges.	Job crafting may reduce future boredom at work and increase future work engagement.

Table 3. Summary of the main results

Employees reported a higher mean score of job boredom (M = 1.02 SD = 0.77) as compared to supervisors (M = 0.70 SD = 0.70). Male employees reported higher scores of boredom (M = 1.30 SD = 0.88) than female employees (M = 0.91 SD = 0.73). The youngest age group of under 36-year old employees reported experiencing job boredom the most often (M = 1.43 SD = 0.31), whereas the oldest age group of over 56-year old employees reported the lowest mean score of job boredom (M = 0.87 SD = 0.83). Although the mean scores of job boredom showed some variance across educational groups, the small effect size implied that these variations were of little practical relevance. In terms of mean scores, job boredom was not experienced more often among employees with university education (M = 0.98 SD = 0.72) than among employees with primary education (M = 0.97 SD = 0.92).

Bored employees were also 2.1 (p<.001) times as likely to harbor turnover intentions and 1.7 (p<.001) times more likely to report early retirement intentions. Moreover, job boredom increased the likelihood of employees' poor self-rated health (OR = 1.5 p<.001), poor workability (OR = 1.8 p<.001) and stress symptoms (OR = 1.3 p<.001). The relation between job boredom and poor self-rated health was stronger among less educated employees (β = -0.149; p<.01). Education and job boredom also had an interaction effect on stress symptoms (β = -0.152; p<.001). Although job boredom was associated with stress symptoms regardless of educational level, the effect was stronger among less educated employees. Job boredom also had a stronger effect on the early retirement intentions of male employees (β= 0.247; p<.001).

Summary. The mean scores of job boredom were low and showed little differences across demographic and occupational cohorts. Boredom at work may thereby emerge in various vocational and educational groups. Younger age, male gender and employee status were associated with more job boredom. The more boredom was experienced, the more likely employees were to report poor health, poor workability and more stress symptoms. Bored employees with lower education were at more risk

to report poor self-rated health and stress symptoms. Furthermore, the more employees experienced boredom, the more likely they were to have turnover and early retirement intentions. Particularly bored male employees were at more risk to retire early.

4.2. The context of job boredom in white-collar work

The second main objective of this dissertation was to extend our understanding of the experience of job boredom by exploring the contexts in which boredom emerges in white-collar work environments. The findings of the second study (Article 2) suggest that job boredom captures an experience of dysfunctional activation that involves an insufficient employment of capabilities and a distorted sense of time. Moreover, three different contexts for distinct job boredom experiences were found. These are summarized below.

Lack of opportunities to learn at work was associated with a type of job boredom, which was characterized by the experience of lacking professional growth and being stuck in the present. This type of job boredom emerged in situations where work tasks did not enable individuals to fully use their capabilities in their work performances. The factors that were related to this specific context included: (1) person-job misfit, (2) routinization and (3) idleness.

Lack of opportunities to focus on meaningful work characterized a context of boredom that involved an inability to fully be in the present. Here, boredom emerged in situations where individuals were not able to reflect and focus on the meaningful aspects of their work. The factors that related to this type of boredom included: (1) work overload, (2) excessive pace of work and (3) unrealistic goals.

Lack of control over work activities refers to a context of job boredom where employees experienced a disrupted rhythm of work and a discontinuous present. This type of boredom occurred when individuals were not able to perform their work as planned or desired and thus experienced a diminished sense of control over their work activities. The factors that related to this context were: 1) constraint, 2) problems in co-operation and 3) interruptions.

Summary. The findings suggest that different types of job boredom may exist in white-collar work. These may emerge in contexts in which the individual is not able to fully utilize his or her capabilities and to engage in meaningful work (Table 3). Three contexts of boredom at work were identified. These were characterized by lack of opportunities to learn at work, lack of opportunities to focus on meaningful work and lack of control over work activities, respectively. Different types of boredom involved distinct temporal experiences that captured a distorted experience of the present.

4.3. The relations between job crafting and job boredom

The third and final objective of this dissertation was to examine the cross-lagged relations between job boredom and job crafting behaviors. The effects of three specific, expansive job crafting behaviors (i.e. increasing structural job resources, increasing social job resources and seeking job challenges) on job boredom were studied vis-á-vis work engagement.

The third study (Article 3) found that out of the three specific job crafting activities, seeking challenges in one's job had a diminishing effect on the future experience of job boredom ($\beta = -.06$, $p < .05$). Seeking more challenges was also found to enhance future work engagement ($\beta = .06$, $p < .05$). No effects

were found between increasing job resources (i.e. structural and social job resources) and future job boredom or future work engagement.

Furthermore, job boredom was found to reduce job crafting (i.e. increasing structural job resources) three years later (β= -.06, p <.01). Instead, work engagement promoted future job crafting activities (β = .09, *p*<.001 for structural job resources and β= .07, *p*<.01 for social job resources).

In addition, increasing job resources was found to promote seeking job challenges in the future (β = .08, p<.001 for structural job resources and β = .06, *p*<.01 for social job resources). Seeking challenges, in turn, was found to drive increasing job resources in the future (β = .19, *p*<.001 for structural job resources and β= .10, *p*<.001 for social job resources).

Both job boredom and work engagement were found to be relatively stable constructs over time. Of the control variables, age was negatively associated with job boredom (β= -.09, *p*<.001). The results also implied that younger employees were more eager to seek challenges in their jobs (β= -.07, *p*<.001). Moreover, male gender was associated with more boredom at work (β= .10, *p*<.001) and less work engagement (β= -.05, *p*<.01).

Summary. The results indicate that seeking more challenges in one's job may protect individuals from future job boredom and foster future work engagement, respectively. Job boredom was found to reduce future job crafting activities. In contrast, engaged employees were found to craft more resourceful jobs in the future. The findings imply that job resources may be accumulated over time by job crafting. Increasing job resources was found to encourage seeking more challenges in the future, while seeking more challenges promoted increasing job resources in the future (see also Table 3).

5. Discussion

5.1. Understanding the experience of boredom at work

The general aim of this dissertation is to extend our knowledge on boredom at work and to examine job crafting as a way of proactively coping with it. Job boredom was found to concern different occupational groups. It was also associated with poor well-being and negative job attitudes. Moreover, the results implied that different types of boredom may emerge in diverse contexts. The findings also suggest that job crafting may provide a way to prevent boredom from becoming a persistent experience at work. Particularly seeking more job challenges was found to reduce future boredom at work. Conversely, boredom at work was found to reduce future job crafting.

In this final section, I will discuss the main findings of this dissertation. In doing so, I will aim to build theory beyond the current conceptualizations of boredom at work. As such, the discussion focuses on the findings of the second article while integrating the findings of the first and the third article in the emerging theoretical framework. I will conclude this section by addressing the limitations as well as the implications of this dissertation.

5.1.1. A contextual typology of boredom at work

Boredom at work is a neglected area of research in work and organizational psychology (Loukidou, et al., 2009). However, boredom is not a trivial matter at workplaces. In the first study of this dissertation (Article 1), job boredom was found to increase the likelihood of poor self-rated health and

workability, stress symptoms and turnover intentions. The findings thus supported previous studies which suggest that boredom at work may be stressful for individuals (van Hooff & van Hooft, 2014; Skowronski, 2012; Martin, Sadlo & Stew 2006; Wiesner, Windle & Freeman, 2005). Hence, further examination of the factors in work and its environment that contribute to job boredom was warranted.

This dissertation started from the basics and examined the differences in the prevalence of job boredom across demographic and occupational groups. Although previous research has associated boredom at work with industrial work environments (Schaufeli & Salanova, 2014), the first study of this dissertation found that boredom at work was experienced not only among employees in areas like manufacturing and transportation but also among employees in white-collar work (Article 1). In general, the prevalence of job boredom varied relatively little across employee groups. For example, boredom at work was not found to be more common among employees with higher education than among employees with lower education.

Earlier empirical research has found that monotony and repetition are common causes of boredom among employees working in factory environments (Game, 2007), transportation (Drory, 1982) and in retail organizations (Mann, 2012). The question remained, however, whether the experience of boredom emerges from similar conditions in white-collar work. The second study of this dissertation (Article 2) found that different types of boredom at work emerged from three contexts in white-collar work environments. These contexts involved (1) a lack of opportunities to learn, (2) a lack of opportunities to focus on meaningful work and (3) a lack of control over work activities. Thus, boredom in white-collar work captured an experience non-optimal activation, as individuals were not able to sufficiently use their capabilities.

The contexts of boredom in white-collar work involved distinct factors that related to a specific task or a situation or, more broadly, to the job content. As some studies suggest that task- and job-related

boredom are different types of experiences (Mael & Jex, 2015; Loukidou, 2008), this dissertation distinguished between *episodic* and *persistent* boredom based on the contextual factors. Furthermore, the contexts of boredom were distinguished using two categories of non-optimal activation, namely *insufficient meaningful activity* and *inability to engage in meaningful activity*. As a result, this dissertation proposes a typology of boredom at work which is presented in Table 4.

	Non-optimal activation	
	Insufficient meaningful activity	Inability to engage in meaningful activity
Task-specific	Episodic passive boredom at work • Lack of challenge: cognitive or quantitative work underload	Episodic restless boredom at work • Lack of control: problems in co-operation, constraint to autonomy (i.e. red tape), task interruptions
Job-specific	Persistent passive boredom at work • Lack of professional growth: job routinization, person-job misfit	Persistent restless boredom at work • Lack of focus on meaningful activity: workload, unrealistic or misaligned goals

Table 4. A typology of boredom at work

The context of non-optimal activation determines whether the type of boredom at work is labelled passive or restless. *Passive boredom* refers to a type of job boredom that is associated with lack of meaningful activity (e.g. lacking job challenges) and is characterized by an experience of low arousal

and passiveness (Reijseger, et al., 2013; Mikulas & Vodanovich, 1993). This type matches the common perception of boredom and was also empirically examined in the two other studies of this dissertation (Article 1 & 3). *Restless boredom*, in turn, refers to a type of job boredom that emerges when individuals are inhibited from engaging in meaningful work activity. Restless boredom emerges when a need for a *specific* activity is not met which is suggested to involve an aroused experience of restlessness and frustration (Eastwood, et al., 2012; Perkins & Hill, 1985; Fenichel, 1951).

In the proposed typology (Table 4), job boredom involves non-optimal activation, as the individual cannot engage in meaningful activity. Hence, this dissertation aligns with studies which perceive boredom as non-optimal arousal (Fahlman, et al., 2013; Eastwood, et al., 2012; Iso-Ahola & Weissinger, 1987; Bernstein, 1975) rather than just low arousal (Mikulas & Vodanovich, 1993). The results imply that boredom at work may be a more context specific phenomenon than what is captured in the current conceptualizations (Article 2). This may partly explain, why boredom remains less reported in studies defining it as passiveness (Articles 1 & 3).

In the following, I will argue that the perception of job boredom as low arousal at work only tells part of the story. The typology of boredom at work presented in this dissertation may provide a theoretical framework for understanding why boredom may occur in different types of jobs and involve diverse characteristics.

5.1.2. Boredom as non-optimal activation

The findings of the second study of this dissertation support the notion of boredom as a result of individuals anticipating or experiencing underutilization of their skills and abilities (Barbalet, 1999). As was also implied by the first study of this dissertation, such an experience can occur in different types of

occupations (Article 1). For example, Csíkszentmihályi (1975) found that even surgeons experienced boredom in situations where their skills were not used to the fullest possible extent, and when they had little control over their work activities.

When individuals are not able to use and develop their skills at work, their activities may not be experienced as meaningful (Hackman & Oldham, 1976). This may explain why lack of meaning is more strongly associated with boredom than with other negative affective states (van Tilburg & Igou, 2016b; Fahlman, et al., 2009). When individuals perceive their work lacks meaning, they may psychologically disengage and withdraw from their work roles (Kahn, 1990). It follows that disengagement is suggested to be particularly central to boredom (Mael & Jex, 2015; Fahlman, et al., 2013), although it is present also in other negative psychological states, such as in burnout (Maslach, et al., 2001).

In the contemporary world of work, individuals place high expectations on the meaningfulness of their jobs (Mael & Jex, 2015). However, the more work-oriented the employee is, the more severe the effects of job boredom on his or her well-being may be. For example, the association between boredom at work and depressive symptoms has been found to particularly concern employees with high work centrality (van Hooff & van Hooft, 2016) and high intrinsic work motivation (Wiesener, Windle & Freeman, 2005).

The typology of boredom at work presented in this dissertation (Table 4) may, in part, explain why boredom is perceived as a low arousal state by some (Schaufeli & Salanova, 2014; Mikulas & Vodanovich, 1993) and as a high arousal state by others (Hill & Perkins, 1985). If individuals lack work activities that require cognitive effort, their work behavior may become passive and automatic (Daniels, et al., 2004). However, if individuals are inhibited from engaging in meaningful work, and instead must perform activities that are unsatisfying, they may experience boredom that involves episodes of high arousal (Eastwood, et al., 2012; Thackray, 1981). Other studies suggest that a persistent experience of

boredom may involve both high and low arousal (e.g. frustration and apathy), although they may not occur simultaneously (Fahlman, et al., 2013; Eastwood, et al., 2012; Martin, Sadlo & Stew, 2006). This means that the characteristics of boredom at work, like those of other affective experiences, may evolve and become intertwined over time (Briner, 1999).

Furthermore, the more persistent boredom becomes, the more frustration may be experienced (van Hooff & van Hooft, 2014). Although this dissertation follows a definition of boredom as a low positive, rather than a negative, affect (Daniels, 2000; Watson & Tellegen, 1985), the unpleasantness of the experience may become more intense as boredom persists. Such an experience is likely to have negative consequences for individuals and organizations (Mael & Jex, 2015; van der Heijden, et al., 2012; Loukidou, et al., 2009) which was also supported by the first and the third study of this dissertation (Article 1 & 3).

5.2. The contexts of boredom

This dissertation suggests that boredom at work captures an experience of meaninglessness that is rooted in non-optimal activation and involves a distorted perception of time. Different contexts of non-optimal activation may involve distinct factors which relate to feeling bored with a specific task or a situation or with the job as a more general experience (Table 4). In the context of *insufficient meaningful activity*, these factors relate to the lack of challenging tasks and the lack of professional growth in the job, both of which capture an experience of not having opportunities to learn at work (Article 2). In the context of *inability to engage in meaningful activity*, these factors are associated with a lack of control over one's work tasks and a lack of opportunities to focus on meaningful work. In the following, I will

discuss the task- and job specific factors of boredom at work and argue how they may relate to distorted perception of time.

5.2.1. Insufficient meaningful activity at work

Congruent with previous research, the results of the second study of this dissertation (Article 2) suggest that job boredom may emerge in a context in which individuals lack activities that would challenge their skills and abilities (Reijseger, et al., 2013; van Tilburg & Igou, 2012; Csíkszentmihályi, 1975). More specifically, the study found that quantitative underload, routinization and poor person-job fit were associated with passive boredom at work. As work underload relates to a specific task or work situation, it can be further distinguished as a cause for episodic passive boredom. Routinization and poor person-job fit refer here to individual's relation with the job and are thereby discussed as causes for persistent type of passive boredom (Table 4).

The notion that quantitative and/or qualitative underload are related to boredom at work is not a novel one (Schaufeli & Salanova, 2014; Fisher, 1993; Csíkszentmihályi, 1975). As an episodic occurrence, passive boredom may not be an entirely negative experience. When a specific task is simple or routine, it can be performed efficiently enough to save one's cognitive capacity for tasks that require creative input (Ohly, Sonnentag & Pluntke, 2006). In the absence of interesting stimuli, employees may engage in activities or thoughts which do not relate to the present task (Reijseger, et al., 2013; Eastwood, et al., 2012; Fisher, 1998). Amidst an otherwise busy workday, these moments of mind wandering may provide a useful break for a person, during which s/he may even have a novel idea or discover a solution to a problem (Mann & Cadman, 2014; Gasper & Middlewood, 2014; Jett & George, 2003).

However, the occasional unchallenging task does not necessarily induce boredom. The experience of boredom and the experience of relaxation, both of which can result from work underload, should thereby be distinguished (Mikulas & Vodanovich, 1993). When a job involves other challenging aspects, its mundane routine may even be experienced as pleasant instead of boring (Csíkszentmihályi, 1975). Hence, it may not be boredom that drives enhanced creativity or effortless performance. In fact, a recent empirical study found that if individuals are bored *by the task*, the fluency of their work performance may deteriorate (Haager, Kuhbandner & Pekrun, 2016).

Although having to perform some amount of routine tasks may thus be beneficial for employee well-being and creativity, routinization of the whole job may foster the experience of boredom (Ohly, Sonnentag & Pluntke, 2006). Consequently, routinization in one's work is linked to less job involvement, lower job satisfaction and poorer organizational commitment (Baba & Jamal, 1991).

When individuals lack meaningful activities, they may feel like they are not making progress towards personally valued goals of professional growth and learning (Pekrun, 2006; Daniels, et al., 2004; Fisher, 1993). While such a situation may result from lacking challenges in one's job altogether, it may also be that the challenges do not fit individual's motivations and capabilities (Csíkszentmihályi, 1975). As the results of second study of this dissertation suggested, boredom may emerge if the job opportunities do not match the individual's aspirations, and are therefore not perceived as meaningful (Article 2).

Self-development goals of professional growth and learning may be more prominent among employees at the earlier stages of their work careers, whereas individuals at the later stages of their careers may find new challenges stressful and focus more on other goals, such as work-related relationships (Fried, Grant, Levi, Hadani & Slowik, 2007; Baltes, 1977). This was also suggested by the finding that younger employees were more active in seeking new challenges in their jobs (Article 3).

The stronger pursuit towards challenging tasks may also partly explain why passive type of job boredom was found to be more prevalent among younger employees (Articles 1 & 3) which is consistent with earlier research (Loukidou, et al., 2009). It may also be that younger employees have not yet learned to adjust their expectations concerning their tasks. Mael and Jex (2015) suggest that when employees enter work life with high expectations on how their jobs should be, those aspects of the job that do not meet the criteria are likely to induce boredom. However, an alternative explanation for this finding may be that younger employees lack the work experience to know and appreciate the variety that the job provides (Fisher, 1993).

5.2.2. Inability to engage in meaningful activity

Whereas in the context of *insufficient meaningful activity* boredom emerged when employees lacked opportunities to use and challenge their capabilities, in the context of *inability to engage in meaningful activity* individuals become bored because of hindrances that keep them from fully utilizing their capacity (Parasuraman & Purohit, 2000). The second study of this dissertation (Article 2) identified task- or situation-related factors, which were associated with boredom at work, namely task interruptions, problems in co-operation and organizational constraints to autonomy (i.e. red tape). Job-related factors, in turn, involved excessive workload and unrealistic performance goals that obstructed individual's focus from carrying out one's work in a meaningful way. In the typology presented in this dissertation (Table 4) situational, task-related factors are associated with episodic restless boredom, whereas job-related factors relate to persistent restless boredom.

Jett and George (2003) list various causes for task interruptions in contemporary workplaces, such as the use e-mail and other forms of electronic communication. Similarly, the participants in the second study of this dissertation reported IT-related interruptions as one of the causes of disrupted workflow and, consequently, boredom (Article 2). Although the combination of highly skilled employees and technology should free up time for individuals to pursue qualitatively diverse and inspiring experiences at work, increased use of new technologies may, paradoxically, enhance job boredom by making it more difficult to attend to one's work tasks (Johnsen, 2016; Mael & Jex, 2015).

When work tasks are distracted or interrupted unexpectedly, employees are not able to perform their work according to their plans (Jett & George, 2003). This may foster boredom by diminishing one's sense of control over work activities (van der Heijden, et al., 2012; Pekrun, 2006; Csíkszentmihályi, 1975) and by hindering the attainment of work-related goals (e.g. completing a task on time; Daniels, et al., 2004). Although distractions may be welcomed in dull or routine tasks (Fisher, 1998), the results of the second study of this dissertation imply that they may relate to boredom especially in tasks which require concentration (Article 2).

Technology is not the only source of disrupted workflow in contemporary workplaces. The findings of the second study echoed other studies in suggesting that job boredom may occur when organizational constraints to autonomy, such as red tape, inhibit work performance (Schaufeli & Salanova, 2014; Loukidou, et al., 2009; Fisher, 1993) or when interpersonal conflicts, such as problems in co-operation, obstruct individuals from becoming fully involved in work activities (Parasuraman & Purohit, 2000; Fisher, 1993).

The findings of the second study also support the argument that not only work underload but also work overload can relate to boredom (Fisher, 1993; Kafry & Pines, 1980). Congruent to previous research (Acee, et al., 2010; Pekrun, 2006), the results suggest that under excessive work demands

individuals may experience their work as meaningless (Article 2). In such situations, boredom may emerge from a conflict between individual's values and one's job content.

Similar findings have been reported by previous research. For example, Charlton and Hertz (1989) found that the security specialists in the US Air Force became bored when they were occupied with other activities than what they considered to be their "real work". Congruently, in Parasuraman and Purohit's study (2000), the more symphony orchestra musicians experienced lack of artistic integrity in their work, the more boredom they reported. Kira and Balkin (2014) suggest that when individuals perceive misalignment of their preferred work roles and their actual work, they experience discomfort and frustration and may eventually leave their jobs. In line with their argument, the findings in the first study of this dissertation imply that the more persistent boredom becomes, the more likely individuals are to experience stress symptoms and to quit their jobs (Article 1).

Taken together, the findings of the second study of this dissertation imply that boredom may emerge when meaningfully challenging activities are lacking but also when hindrances inhibit individuals from engaging in meaningful work. Although hindering demands, such as role conflict, role ambiguity and red tape, have been previously associated with burnout (Crawford, Le Pine & Rich, 2010), the results of the second study suggest that they may also relate to boredom by mitigating individuals' experience of meaning at work.

5.2.3. Distorted perception of time

The typology presented in this dissertation suggests that boredom at work involves non-optimal activation and a sense of meaninglessness (Table 4). Hence, bored individuals may not lack activity but

meaning in their jobs. This has implications on the time perceptions typically associated with boredom, namely slow passage of time.

The results of the second study imply that the time perception in boredom may involve a broader temporal experience of a distorted present (Article 2). This finding echoes Fisher (1987), who posits that the experience of time slowing down or standing still is not essential to boredom nor is it necessarily a sign of boredom. She points out that although time may sometimes feel like its dragging when engaged in a boring activity, a similar perception may also take place when a task is novel, complex and requires conscious information processing. This may explain why some have found that slow passage of time reflects the construct of boredom rather poorly (Van Wyk, et al., 2016). Similarly, Lomas (2016) argues that boredom may involve perceptions of time both slowing and quickening, dragging by in one minute while slipping away in the next. Hence, he suggests that boredom may be better described as the strangeness of time.

The findings of the second study support Hartocollis (1972) in arguing that boredom involves displeasure with the present that is experienced as a disturbance in the sense of time. In the participants' descriptions of boredom at work, the present was experienced as stagnated, eluding or discontinuous depending on the context (Article 2). The findings suggest that if individuals lack challenges and opportunities for professional growth, boredom may involve an experience of being stuck in the present at work. On the other hand, when excessive work demands obstruct individuals from taking time to focus on meaningful work activities, the present may be experienced as eluding. When various hindrances disrupt the rhythm of work, in turn, the present may be experienced as discontinuous. All of the aforementioned situations capture an experience, where individuals are unable to be fully involved in their work roles (Kahn, 1990; Csíkszentmihályi, 1975).

As such, boredom at work resembles the syndrome of *languishing*, where individuals experience failure to make progress (Keyes, 2002). As such, it can be seen as opposite to *thriving*, where progress and momentum are felt, marked by a sense of learning and vitality (Spreitzer, et al., 2005). However, it is not just lacking challenges and opportunities for professional growth that may diminish individuals' sense of making progress towards their work goals. If individuals experience excessive work demands or lack of control over work activities, they may perceive that they are falling behind on accomplishing their personal work goals. Rather than of dragging of *time*, boredom at work thus captures an experience of dragging of *self* at work.

These findings align with previous research suggesting that the experience of boredom involves a problem in optimization of time and meaningful activities (Iso-Ahola & Weissinger, 1987; Grubb, 1975). According to Johnsen (2016), historically boredom at work arose when the self-paced rhythms of optimal human functioning begun to *conflict* with the temporal organization of industrial labor. He argues that the machine-paced work in organizations rendered individual work experience as meaningless. In work environments where individuals are not able to work in a meaningful way, boredom may involve an experience of time not as slowed down but as an empty interval (Barbalet, 1999). Hence, boredom is not just about having too much time and too little to do but also about not having enough time for meaningful activities.

5.3. Job crafting as an antidote for boredom

Although some studies suggest employees may initiate proactive behaviors to cope with boredom at work (van Hooff & van Hooft, 2014; Skowronski, 2012; Spector & Fox, 2010), no empirical evidence has so far been presented regarding the direction of the relation between job boredom and proactive work

behaviors. Thus, we do not know whether boredom may drive proactive behaviors, or whether proactive behaviors may prevent boredom from emerging.

Hence, the third study of this dissertation examined the causal relations between job boredom and a specific type of proactive behavior, namely job crafting. The focus of this dissertation was on *expansive* job crafting behaviors, namely seeking job challenges, increasing structural job resources and increasing social job resources. Job crafting behaviors which aim to reduce job demands were not examined in this dissertation, as it was not theoretically plausible to expect that such activities would reduce boredom at work (van Hooff & van Hooft, 2014). The results implied that particularly seeking more challenges may reduce future boredom and increase future engagement at work. Job boredom, in turn, was found to have a negative effect on future expansive job crafting behaviors (Article 3).

5.3.1. Job crafting as a proactive coping strategy

The findings of the third study (Article 3) lend support to COR theory in suggesting that individuals may craft their jobs to proactively cope with future threats to their well-being before actual problems (i.e. job boredom) arise. When a stressful event, such as boredom at work, is just a possibility, its full effects may be averted by proactively accumulating one's resources (Aspinwall & Taylor, 1997). This means that individuals may react to triggers, such as brief episodes of boredom, by seeking to change their situation for the better and to prevent a more persistent boredom from emerging. Episodes of boredom could thereby drive individuals to change their undesirable situation (Johnsen, 2016; Barbalet, 1999).

Out of the three job crafting behaviors studied in this dissertation, particularly seeking more challenges in one's job may reduce future boredom (Article 3). One reason may be that challenges drive high-arousal mood states, such as interest, engagement, and enthusiasm (Løvoll & Vittersø, 2014; Crawford, LePine & Rich, 2010), and foster experiences of competence and mastery which sustain psychological well-being (Sulea, Van Beek, Sarbescu, Virga, Schaufeli, 2015; Pekrun, Elliot & Maier, 2009).

Schwarzer and Knoll (2003) distinguish proactive coping, which does not require any negative appraisals of threat or loss as its starting point, from preventive coping which aims to accumulate resources to prepare for future loss. Although both types of coping involve accumulating resources before the actual threat occurs and can in that sense be considered as proactive (Aspinwall & Taylor, 1997, Hobfoll, 1989), Schwarzer and Knoll's definition of proactive coping is specifically aimed at promoting challenging goals and personal growth, whereas preventive coping aims at risk management. Insofar as boredom at work involves a lack of progress towards meaningful work goals (Article 2; Pekrun, 2006; Daniels, et al., 2004), proactive coping by actively seeking new challenges may help individuals to better achieve their goals and thus avoid the experience of boredom (Carrol, Parker & Inkson, 2010).

Proactive coping behaviors, which are initiated before persistent experience of boredom, and *passive* coping behaviors, which take place when already bored, may have different implications for the individual's well-being (Hobfoll, 1989). Although passive coping behaviors, such as daydreaming and engaging in distractions, are common and potentially harmless at least when they occur occasionally (van Hooff & van Hooft, 2014), these activities may do little to improve the situation in the long run. In contrast, research suggests that engaging in non-work activities or thoughts to cope with boredom can make matters worse (Eastwood, et al., 2012; Loukidou, 2008; Fisher, 1998; Farmer & Sundberg, 1986). According to COR theory, passive coping behaviors may lead to further resource loss and, consequently,

poorer well-being (Hobfoll, 1989). This could mean that if coping activities are not effective in changing the situation, boredom may become persistent and its consequences more severe (Skowronski, 2012).

Hence, it would make sense for bored employees to craft more challenges in their jobs to prevent their situation from becoming worse. However, in the third study of this dissertation, job boredom was *not* found to drive future crafting behaviors (Article 3). It may be that bored employees lack sufficient job resources and energy to initiate job crafting (Reijseger, et al., 2013). Bored employees may also feel that they lack control over work activities or that their activities lack meaning (Pekrun, 2006). In such situations, the individual may have little motivation to put more effort into these activities (Pekrun, et al. 2010). To make changes in their jobs, employees need to have the motivation and the opportunities to do so (Bakker, 2015; Petrou, et al., 2012; Wrzesniewski & Dutton, 2001; Brandstädter, 1989).

COR theory posits that if individuals perceive having scarce resources, they may choose not to accumulate them further (Hobfoll, 2001; 1989). If boredom were to drive individuals towards finding new meaning (Johnsen, 2016; Barbalet, 1999), it may be that this meaning is sought from other activities than within one's current job. Congruently, the results of this dissertation imply that bored employees may be more likely to withdraw their efforts than to seek stimulating resources and challenges in their jobs (Article 3) as well as more likely to leave their jobs (Article 1).

This does not mean that bored employees would not craft their jobs. Although other types of job crafting, such as reducing job demands, were not studied in this dissertation, it may be that bored employees choose those types of coping behaviors rather than increase their resources. However, such activities may not improve employee well-being. For example, a recent study suggests that reducing job demands enhances the future experience of exhaustion (Petrou, et al., 2015).

Bored employees may also detach from the current work objectives and reformulate the meaning of the situation and of the self (Brandstädter, 1989) or downgrade their goals, ambitions and even skills to better align their capacity with the work and its environment (Csíkszentmihályi, 1975). However, such strategies may result in a conflict between work and a desired work identity (Hobfoll, 2001), and as such, merely shift the loci of the experience of boredom.

5.3.2. The balancing act of job crafting

The findings of the third study of this dissertation (Article 3) also suggest that job crafting may spur further crafting activities in the future. Seeking more challenges was found to enhance increasing resources in the future and vice versa. It may be that job crafting involves an adaptive mechanism (Berg, et al., 2010). As one takes on new challenges, a need for seeking additional job resources, such as new skills or social support, may arise. Conversely, as individuals increase their resources at work, they may feel more confident and engaged to pursue new undertakings (Hobfoll, 2001). Moreover, the feedback individuals receive from crafting activities may motivate them to craft their jobs more in different ways (Wrzesniewski & Dutton, 2001).

Thus, the findings of the third study support the proposition of gain cycles (Hobfoll, 1989) which refers to resource accumulation over time. The dynamics of crafting behaviors imply that employees may strive to optimize their well-being by balancing the challenges in their work and the resources needed to tackle them (Bakker, Hakanen, Demerouti & Xanthopoulou, 2007). Such a balancing mechanism, which involves a wide variety of activities, may be beneficial for individual well-being in the long run. Kira and Balkin (2014) argue that if individuals were to limit their job crafting activities only to developing those competencies that directly relate to the meaningful aspects of their work, while discarding

development of other capabilities, they may hinder their possibilities to develop and to thrive. Hence, seeking more challenges may drive individuals to expand their job resources and, for example, acquire new competencies instead of only honing the skills they already master.

The self-sustaining dynamics of job crafting may also be essential in order to have positive and lasting effects on well-being. Although increasing job resources is found to promote work engagement on a daily level (Demerouti, Bakker & Halbesleben 2015; Petrou, et al., 2012), these effects may not extend over a longer period of time (Article 3). Increases in positive affect, such as work engagement, tend to be temporary, as individuals eventually return to their set-point levels (Lyubomirsky, Sheldon & Schkade, 2005). Moreover, increasing some job resources may serve a specific, task- or situation –related purpose (Wrzesniewski & Dutton, 2001) and thus have little effects beyond serving this purpose.

Although the results of the third study in this dissertation suggest that seeking new challenges may have a stronger impact on future boredom and work engagement than increasing job resources, it should be noted that a novel and challenging task today may feel repetitive and boring next year. Thus, to prevent boredom from emerging individuals may need to continuously seek more stimuli to sustain their interest at work (Mael & Jex, 2015). Rather than a one-time experiment, job crafting should be approached as an attitude towards one's work that can benefit the individual's motivation and well-being if continuously practiced and nurtured.

Jobs are not crafted just to make them more meaningful, they are also crafted *because* they are meaningful. Kira and Balkin (2014) argue that when individuals perceive meaning in work, they are further spurred to craft their jobs to sustain vitality and learning in their jobs (see also Kahn, 1992). Congruently, the findings in the third study suggest that engaged employees increase their job resources in the future while bored employees do not (Article 3).

5.4. Methodological limitations and suggestions for further research

This dissertation has several limitations that need to be mentioned. First, although the contextual typology of boredom (Table 4) has provided a useful framework to interpret the findings of the studies in this dissertation and to understand the controversial findings of previous boredom research, it is based on the findings of the second study and has not been subjected to empirical testing as such. Two of the studies in this dissertation employed a measure of job boredom which describes some of the commonly known aspects of the experience (Reijseger, et al., 2013). The measure may not, however, capture the characteristics of different types of boredom at work. Future studies could further examine whether distinct contexts foster boredom experiences, which differ in terms of characteristics and consequences. This could be done by creating and validating instruments to further explore the contextual types of boredom at work and to extend our knowledge on employee ill-being.

The second limitation of this dissertation concerns the measurement instruments. The studies in this dissertation relied on subjective measures of employee well-being and job crafting, rendering the results vulnerable to common method bias (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). However, the notion that common method variance automatically affects variables measured with self-report instruments has been criticized as distorted and oversimplified (Spector, 2006). Subjective assessments are necessary in determining the health and well-being of employees (Daniels, Boocock, Glover, Hartley & Holland, 2009). Using self-report questionnaires to observe phenomena such as job boredom is justified, as subjective psychological phenomena may not be accessible for other raters. Similarly, there are many job crafting behaviors which might be difficult, if not impossible, for another observer to assess.

Another measurement issue is the extent to which job boredom and job crafting can be captured by survey instruments. Although self-reports may be the only viable way to measure subjective experience, they fail to capture unconscious processes (Pekrun, 2006). Individuals might not admit to experiencing boredom at work even to themselves, as it is not a socially desirable emotion in contemporary workplaces, where emphasis is placed on efficiency, energy and innovation. The construct of job crafting, in turn, assumes that work performance is a product of volitional behaviors, when, in fact, many work behaviors are automated and occur without conscious processing (George, 2009). It follows that employees may consciously *construct* the behavioral patterns that they display (e.g. "I develop my skills at work") without necessarily following them through. An interesting avenue for future research would be to assess job boredom and job crafting in ways that enable employees to reflect upon and report their actual, concrete experiences and behaviors.

Moreover, a measure of three specific expansive job crafting behaviors was used in this dissertation and, consequently, a myriad of other possible job crafting activities remain beyond its scope. As always, survey research has its limits in terms of detecting the nuanced reality of human condition at work. Thereby a wider range of methods should be used in future studies to map the plethora of activities and cognitive strategies employees utilize to proactively cope with boredom, and to sustain or rediscover engagement at work. For example, qualitative methods could be employed to explore what bored employees actually do at both work and off-work contexts to alleviate the experience. In addition, the Experience Sampling Method (ESM) could contribute to examining the proximal environmental factors and related behaviors and affect (Csíkszentmihályi & Hunter, 2003). ESM has previously been used to study boredom among school students (Larson & Richards, 1991), adult males recovering from a substance use disorder (Corvinelli, 2005) and people with mental illness (McCormick, Funderburk, Lee & Hale-Fought, 2005), but so far it has not been used to study boredom at work. To date, no diary studies

on job boredom exist either, although they might be useful in capturing the episodic experiences of boredom which may elude studies with longer time lags.

Although bored employees may have the time to fill out questionnaires, they might not be motivated to do so. Like at other occasions in which boredom at work has been assessed (Reijseger, et al., 2013), the overall scores for job boredom in two of the studies were low (Article 1 & 3). However, it is noteworthy that despite the low levels of boredom significant relations to other study variables were found in the studies in this dissertation. This brings us to the third limitation of this dissertation, which concerns the small effects between job crafting activities, job boredom and work engagement (Article 3). It may be that because constructs, such as job boredom and work engagement, appear to be highly stable over time (Seppälä, et al., 2015; Brauchli, Schaufeli, Jenny, Füllemann & Bauer, 2013; Schaufeli, et al., 2006), the effects of job crafting are bound to be weak. Moreover, detecting the effects of job crafting as proactive coping may be difficult, because it focuses on minimizing the very problem under investigation (Aspinwall & Taylor, 1997). Future studies could generate more knowledge on the relations between job boredom and associated behaviors by using different methodological approaches. For example, employing person-centered and multilevel approaches could shed more light on whether the relations between job crafting and job boredom vary across individuals and work teams.

The fourth limitation of this dissertation concerns the study designs. The first study used a cross-sectional design, and therefore no causal inferences can be made of the relations between job boredom and employee well-being and work attitudes. The third study, in turn, had a three-year time lag between the two measurement points. Although very little research exists on appropriate time lags for assessing the effects in organizational research (Mitchell & James, 2001; Zaheer, Albert & Zaheer, 1999), three years is inarguably a long time to detect effects between behavior and well-being.

Despite its limitations, however, the findings of the third study did suggest that job crafting may have an impact on employee motivation and well-being beyond daily or weekly effects. Hence, future research should further examine the relations studied in this dissertation. Although replication studies are neglected and undervalued in psychological research, they are essential in validating scientific findings (Makel, Plucker & Hegarty, 2012). In addition, future studies could use "shortitudinal designs" to find the optimal time lag for detecting causal effects (Dormann & Griffin, 2015). Several measurement points within a relatively short period of time would also enable a better assessment of the trends of the study variables (Ployhart & Vandenberg, 2010).

Finally, the samples used in the studies also involve certain limitations. As participation in the studies was voluntary for organizations and their personnel, the samples may be biased towards organizations that are more inclined to develop employee well-being, as well as towards employees who are more engaged in their work. It should also be noted that the results of these studies were derived from samples that were not representative of the total working population in Finland nor of those in other countries (see Article 1 and Article 3 for detailed descriptions). Moreover, as the second study focused specifically on white-collar workers and the third study used a sample of highly educated Finnish employees, the findings should not be generalized to blue-collar or low-skilled workers. As previous studies have shown, blue-collar or lower ranked employees may perceive and implement job crafting in different ways than white-collar or higher ranked employees (Nielsen & Abildgaard, 2012; Berg, Wrzesniewski & Dutton, 2010).

In sum, future studies can build upon this research by further investigating the characteristics and consequences of distinct boredom experiences. By employing multiple ways to capture both episodic and persistent experience of boredom at work, and by examining the various ways employees may craft

their jobs to prevent and cope with boredom, future studies can extend our knowledge on employee well-being and associated behaviors.

5.5.General conclusions and implications

This dissertation contributes to the research on employee well-being by extending the current knowledge on job boredom. It sheds light on the prevalence of boredom at work across employee groups and indicates that job boredom may have potentially negative consequences. Furthermore, this dissertation identifies different contexts of boredom in contemporary workplaces and implies that the experience of boredom at work may be more varied than what the traditional view of job boredom suggests. The findings also show that by proactively crafting their jobs, employees may prevent job boredom from emerging. All in all, this dissertation informs academics, managers and practitioners, who seek to identify and avoid threats to employee well-being, motivation and performance. The following chapters will conclude this dissertation by summing up its key takeaways for both theory and practice.

5.5.1. Theoretical implications

This dissertation answered the call for examining the fundamental issues of emotion at work, such as how often is a specific emotion (i.e. boredom) experienced at workplaces, and what is the relation between these incidents and individual well-being (Briner, 1999). Moreover, the findings of this dissertation suggest that the current conceptualizations of the experience may be too narrow and limiting in terms of understanding employee well-being in contemporary workplaces.

Research on boredom has thus far been characterized by conceptual ambiguities and conflicting findings, such as whether boredom involves low or high arousal (Loukidou, et al., 2009). This dissertation sought to integrate these views by presenting two distinct contexts in which boredom emerges that capture an experience of non-optimal activation and a lack of meaning in one's job. By suggesting that boredom can emerge not just in conditions where there are not enough meaningful activities but also in conditions, where there are not enough opportunities to engage in meaningful activities, this dissertation extends our understanding of the loci of boredom at work. Moreover, it contributes to the discussion on the processes of employee ill-being by arguing that excessive work demands may play a part both in burnout and in job boredom.

The findings of this dissertation align with research linking boredom with a sense of meaninglessness (Johnsen, 2016; van Tilburg & Igou, 2012; Fahlman, et al., 2009; Pekrun, 2006; Barbalet, 1999). Emphasizing the role of meaning in boredom underscores the subjective nature of the experience. Boredom is rooted in the individual's relationship with his or her work context that guides the individual's affective, cognitive and behavioral responses (Briner, 1999). Rather than focusing on explaining boredom by a stable set of job characteristics or individual traits, understanding the experience as a lack of meaning may enable accounting for a wider range of characteristics and consequences of boredom at work. Thus, although researchers have been prompted towards agreeing on a single construct and, hence, a single measure of boredom (Vodanovich & Watt, 2016), this dissertation argues that different types of measures may be needed to capture different boredom experiences at work.

Finally, this dissertation provides novel information on the causal relations between job boredom and job crafting and, as such, extends our understanding on the role of job crafting in sustaining employee well-being. The findings supported an already well-established COR theory (Hobfoll, 2001; 1989) in suggesting that proactively accumulating job challenges and job resources may protect employee well-

being. Job crafting as a proactive coping mechanism against employee ill-being has received scarce attention. This may be because proactive coping in general has gone understudied, as it takes place before the problems emerge and may thus be of less interest than a problem-based approach, not to mention more difficult to detect (Aspinwall & Taylor, 1997). For example, job crafting has not been found to explain variance in burnout (Nielsen & Abildgaard, 2012). However, a recent longitudinal study found that expansive crafting behaviors were associated with lower exhaustion (Petrou, et al., 2015). This implies that job crafting may have a similar effect on both job boredom and burnout.

5.5.2. Practical implications

Emotions, such as boredom, may not be openly displayed in organizations, because people want to conform to the social norms that often involve showing interest and enthusiasm rather than disinterest and withdrawal (Briner, 1999). Although boredom at work may be hidden, the findings in this dissertation show that it nevertheless exists across contemporary working environments. As this dissertation mostly focused on examining job boredom among the educated and white-collar employees, it can inform particularly post-industrial organizations on why their employees may become bored at work, and how it may be prevented.

Understanding employees' emotional processes may provide vital information on when and how managers should intervene (Briner, 1999). Identifying the context of boredom may help organizations and managers to target specific interventions, as different types of boredom may require different responses. Job boredom may result not just from lacking activities, but more importantly from lacking *meaningful* activities at work. As such, preventing boredom is about matching the job to the employee's

capabilities values and motivations. This process begins with successful employee selection, but it does not end there. Instead of managing the careers of their employees, organizations can help the employees to further their careers proactively within the organization (Sturges, Conway, Guest & Liefooghe, 2005). For example, organizations can facilitate employees' efforts to manage their own careers by building their career-related competencies (i.e. knowledge and abilities) which may help them progress in their careers and increase their work engagement (Akkermans, et al., 2013). One way to avoid future boredom may be to provide employees with opportunities to engage in meaningful challenges and activities throughout their careers within the organization.

This dissertation suggests that boredom can also occur in jobs that are challenging and interesting to the employees, if they are not able to engage in the meaningful aspects of their jobs. In such contexts, organizations may decrease boredom by reducing constraints from engaging in meaningful work activities. This can be done, for example, by limiting the amount of distraction in the workplace, and by streamlining meetings (Mael & Jex, 2015). Optimizing the time spent on work activities may thus help in preventing boredom among professionals. In addition to removing distractions, pacing work in a way that allows a meaningful balance of work activities may also contribute to reduced boredom. For example, some researchers suggest that the work of chronically overworked professionals should be paced to alternate between high-pressure work and work that is low in cognitive difficulty to allow room for planning and incubation of ideas (Elsbach & Hargadon, 2006; Jett & George, 2003).

Although organizations may remove some of the structural constraints that obstruct the meaningful use of employees' working time, more and more white-collar employees need to decide for themselves how and when they carry out their work activities. Some argue that the time-distorting experience of meaninglessness may be self-made, as in the contemporary organizations people may be losing the ability to develop their own interests, "to make time for themselves" (Johnsen, 2016, p. 9).

This implies that boredom may be rooted in the individual's own inability to organize time for meaningful activities. There is also some empirical evidence suggesting that an ability to manage one's work time may help individuals in controlling the experience of boredom in white-collar working environments (van der Heijden, Schepers & Nijssen, 2012). Hence, the key to managing one's boredom may be learning to manage one's time. Hence, interventions which target improving employees' time management skills may reduce boredom by improving individual capabilities to regain the sense of control over work activities (Claessens, van Eerde, Rutte & Roe, 2007; Peeters & Rutte, 2005).

Organizations can thus mitigate boredom at work to some extent by designing jobs to better fit employees' needs or by implementing career management strategies. However, finding meaning in one's work may not be imposed by managerial interventions (Isaksen, 2000). In light of the potential consequences of boredom at work (Article 1), organizations may benefit from enabling employees to craft more meaningful and, consequently, less boring jobs for themselves. This dissertation suggests that particularly enabling employees to seek more challenges in their work may reduce future (Article 3).

Scholars suggest that providing opportunities for employees to initiate other proactive behaviors may also alleviate boredom. If given the opportunity, individuals can, for example, attempt to break their familiar routines to seek variety (Pekrun, 2006), activate important goals to inspire themselves (Daniels, Harris & Briner, 2004), and acquire feedback concerning the attainment of those goals to keep themselves motivated (Fisher, 1993). Furthermore, organizations can create opportunities and incentives for employees to enhance the meaningfulness of their work by helping others (van Tilburg & Igou, 2016a; Mael & Jex, 2015; Grant 2007) or by cultivating attention with mindfulness practices (Martin, et al., 2012; LaPera, 2011).

Hence, enabling employees to craft their jobs at the first onset of boredom may prevent random episodes from evolving into a more persistent experience. Episodes of boredom may even encourage a

person towards novel approaches and to pursue positive change to improve the situation (Johnsen 2016; Gasper & Middlewood, 2014; Barbalet, 1999; Rule, 1998). This, however, requires that the individual is able to reflect upon the experience and adjust one's work accordingly. Instead of such reflection, however, individuals may often seek to frantically escape boredom into intense stimulation which may leave them even more susceptible to future episodes of boredom (Eastwood, et al., 2007). In other words, individuals may distract themselves rather than change their situation for the better which may lead to a persistent experience of boredom (Farmer & Sundberg, 1986). Without taking time to reflect on the real cause of boredom individuals may employ coping behaviors automatically, although these activities may not always be effective or sufficient in the situation (Daniels, Harris & Briner, 2004).

It may thus be beneficial for organizations to develop a culture that enables employees to constructively reflect upon and respond to their affective cues. This may cultivate a behavioral architecture, where employees can learn to identify early signals of boredom and adapt their work behavior accordingly. Fostering a climate that encourages employees to address the causes of boredom instead of suppressing the emotion can promote their personal and professional growth and, as such, improve their work performance (Barbalet, 1999; Rule, 1998).

Organizations benefit from engaged employees who fully employ themselves in their work (Kahn, 1992; 1990). The findings in this dissertation suggests that by providing employees the opportunity to craft their jobs to better match their needs and motivations, for example, by enabling employees to volunteer for new and challenging projects, take on new tasks or test new approaches, organizations may improve employee well-being and reduce boredom at work. Crafting activities can spur further efforts to learn and employ individual capabilities, but unless they are actively sustained, the positive effects of specific behaviors may not last over time. Hence, organizations might benefit from cultivating job crafting into a workplace habit (Lally & Gardner, 2013).

Proactive behaviors are embedded in the social context of work (Spreitzer, et al., 2005). Although job crafting is initiated by employees themselves, the role of leadership is incremental in determining the possibilities and resources for such behaviors (Wrzesniewski & Dutton, 2001). Engaging leaders, who connect with, strengthen and inspire their followers may enhance follower's job resources and, consequently, their engagement at work (Schaufeli, 2015). Other leadership approaches, such as servant leadership and transformational leadership, may also be useful in promoting work engagement (Van Dierendonck, Stam, Boersma, De Windt & Alkema, 2014) which may drive job crafting behaviors, as was also implied in the third study of this dissertation (Article 3). In contrast, employees who have already become bored in their jobs may be more likely to protect their resources and reduce expansive job crafting activities which may lead to deteriorating well-being (Hobfoll, 2001; 1989). In such situations, employees might benefit from an activating intervention to muster up the drive to make little changes to their work and to break the loss cycle of boredom.

Taken together, this dissertation argues that before launching boredom interventions at workplaces, it should first be explored what causes the individual to lack meaning in one's work. The remedy for boredom may not be to drown employees in more activities, but to provide them opportunities to engage in more meaningful work. Finding the right antidote for boredom is a task that should not be left only to the organizations and its managers. For engagement and inspiration to prevail over boredom at work, individual employees should also be encouraged to reflect upon what makes their job meaningful and empowered to act to bring that meaning into their everyday work.

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ORIGINAL PUBLICATIONS 1-3

Job Boredom and Its Correlates in 87 Finnish Organizations

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Objective: To investigate the correlates of job boredom in 87 Finnish workplaces ($N = 11,468$) and to examine the associations between job boredom, health outcomes, and job attitudes. **Methods:** We applied the Dutch Boredom Scale to measure job boredom. Hierarchical logistic regression analysis and odds ratio estimates were used for further examination of the variables. **Results:** Male, under-36-year-old employees and employees working in transportation, manufacturing, arts, recreation, and entertainment experienced the most job boredom. Job boredom increased the likelihood of employees' turnover and early retirement intentions, poor self-rated health, poor workability, and stress symptoms. **Conclusions:** Job boredom is a phenomenon that concerns a wide range of industries. We found a clear association between job boredom and negative health- and work-related perceptions. The results support the notion that job boredom can be harmful to employee health.

Being physically present but unmotivated at work and not using one's full potential can become costly for organizations and may also be harmful to employees' health. Job boredom is characterized by passiveness, a lack of interest in tasks in a given situation, and an inability to concentrate.[1] Consequently, a prolonged state of job boredom may offset an array of negative consequences, such as depressive symptoms, drug and alcohol abuse, and decreased job satisfaction and job performance.[2] Therefore, job boredom deserves more attention than it has received thus far. Indeed, over recent decades, it has attracted much less attention than other work-related affective-motivational states, such as job satisfaction, work engagement, and burnout. Thus, we still lack a comprehensive understanding of who experiences job boredom, and how it is related to employees' health- and work-related attitudes. This study among 11 468 Finnish employees aims to address these issues by investigating whether there are differences in the levels of job boredom between various demographic and occupational groups. In addition, we examine the relationships between job boredom and several health- and work-related outcomes in a wide spectrum of modern working environments to explore the potentially harmful effects of job boredom.

WHAT IS JOB BOREDOM AND WHO ARE AFFECTED?

Job boredom can be described as an unpleasant state of low arousal and dissatisfaction caused by a work situation that does not offer adequate stimulation.[3] In the field of work and organizational psychology, job boredom is often defined through state or trait components. State boredom refers to a more transient occurrence, which is affected by the environment, whereas the latter refers to a more stable characteristic inherent to a personality.[4] Here, we are interested in job boredom as an amotivational state at work, which can be either hindered or enhanced by features of the job or the work environment.

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Previous research indicates that the roots of state job boredom are far more complex than mere task monotony. Therefore, job boredom can be expected in a variety of jobs, irrespective of the presence of individual dispositions. Reijseger et al[1] applied the Job demands-resources model[5] to identify the conditions under which job boredom might arise. They found that job boredom was associated with low job demands (workload and mental and emotional demands) and low job resources (autonomy and social support from colleagues and supervisors). More generally, job boredom is often thought to arise when employees feel that their tasks are not challenging.[6] Nevertheless, it is important to note that the level of optimal job demands or valued job resources might vary according to the nature of the job and/or the individual's skills. For example, some authors suggest that higher education levels among employees might foster the experience of boredom, because employees' competences are likely to exceed the demands and challenges of the task.[2]

Furthermore, the relationship between job demands and job boredom might not be as linear as suggested by the literature that perceives job boredom as passiveness resulting from low stimuli in the environment. There is some evidence of excessively demanding tasks fostering boredom, as they lack tangible goals and, as such, purpose.[7] Lack of meaning in work has also been recognized as a fundamental element in the experience of boredom.[8,9] In addition to the ambivalence around the relationship between job demands and job boredom, there may also be ambiguity concerning job resources. For example, job autonomy may have different implications in present-day jobs to that in previous industrial working environments. Some argue that bureaucracy, the use of technology and control mechanisms (eg, constant reporting), typical in today's knowledge-intensive work, drain the meaning out of the work itself and, in effect, accelerate boredom.[10] Thus, although employees might have formal autonomy in regard to their tasks, they may be bound by hindrances such as deadlines and time pressure, which limit the possibilities or desire to actually implement autonomy at work.

In sum, job boredom may be more prevalent in jobs low on challenge and variety, but also in conditions of high bureaucracy and control mechanisms that are not limited to low-skilled work. It is noteworthy that the demographic and occupational factors of job boredom have not been comprehensively investigated, although similar studies have been carried out on related constructs such as burnout[11] and workaholism.[12] Nevertheless, previous studies imply that job boredom is not a problem in only monotonous jobs; it can also be a frequent experience in various white-collar professions.[13,14]

This study aims to scrutinize the commonly held assumptions concerning boring jobs and bored employees by exploring the prevalence of job boredom across demographic and occupational groups. Moreover, we contest the stereotype that job boredom is mostly experienced in industries characterized by low-skilled work and explore the possibility that job boredom is a phenomenon that can affect both blue- and white-collar industries.

WHY SHOULD WE CARE? THE POTENTIAL CONSEQUENCES OF JOB BOREDOM

The existing literature lacks consensus on what job boredom actually is and how it should be measured. Earlier studies, in particular, have not distinguished between the subjective experience of boredom and the work context in terms of monotonous, understimulating work environments,[15] resulting in the perception of job

boredom as a synonym of routinization.[16] Others, however, have referred to monotony and routines as causes of job boredom.[17] Conceptualizing job boredom by its causes alone lays the risk of ignoring a number of serious consequences. For example, although routinization is also perceived as having positive effects, such as increasing creativity,[16] job boredom is associated with mostly negative consequences.[2]

Recent research suggests that job boredom has an affective, cognitive, and behavioral component.[1] For example, bored employees may feel dissatisfied, have a distorted sense of time (standing still or moving slowly), and engage in distractions. Hence, for organizations, employee boredom might be both unproductive and counterproductive, because some studies associate it with employee misbehavior.[18] Furthermore, a study on manufacturing workers found that job boredom was linked to higher job dissatisfaction and absenteeism.[4] A more recent study on office workers also found a positive relationship between job boredom and turnover intentions.[1] These studies imply that job boredom is experienced in diverse working environments, and that it may also have negative organizational and individual consequences. Nevertheless, because of a lack of systematic research on the individual and organizational correlates of job boredom in different types of work environments, our understanding of job boredom, including its epidemiology, remains limited.

As Daniels[19] points out, work-related psychological well-being has often been operationalized one-sidedly as job satisfaction. Affective well-being expands this narrow scope in understanding well-being as a frequent experience of positive affect and infrequent experience of negative affect.[20] In the domain of work, affective well-being has often been described as axes or factors of polar opposites: for example, Warr[21] describes the principal dimensions for the assessment of well-being using three axes, ranging from displeasure to pleasure, from anxiety to comfort, and from depression to enthusiasm (see Fig. 1). The model illustrates how work-related well-being can be either more activated (ie, work engagement) or less activated (eg, job satisfaction), whereas unpleasant job-related affects can range from anxiety (ie, stress) to depression (ie, burnout). Following Daniels,[19] we place job boredom—an unpleasant state of passiveness—at the negative end of both the deactivation–activation and displeasure–pleasure axes. Such a position locates job boredom as the polar opposite of enthusiasm. Indeed, some researchers have recently suggested that the phenomenon of boredom at work is the opposite to that of work engagement,[12] an activated and pleasant state of vigor, dedication, and absorption at work.[22]

Similarly to job boredom, burnout, that is, a stress syndrome characterized by exhaustion, cynicism, and reduced professional efficacy,[23] can also be defined as a deactivated and unpleasant state. Nevertheless, boredom is more strongly related to the activation–deactivation axis, whereas burnout also strongly relates to the pleasure–displeasure axis.[1] Although the consequences of other aforementioned states of well-being have been widely studied, the associations of job boredom remain less known. Thus, the second purpose of this study is to shed light on this gray area of employee well-being by examining the associations of job boredom with various health- and work-related attitudes.

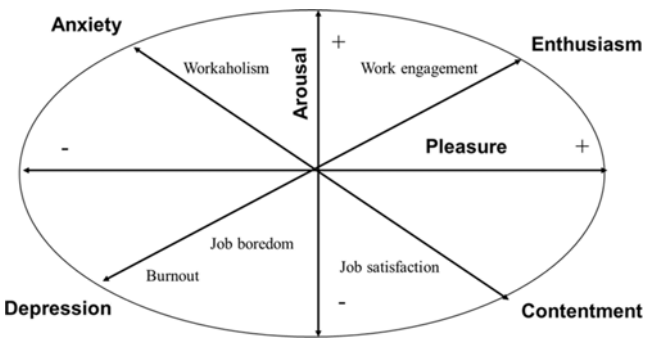

FIGURE 1. Dimensions of affective well-being (adapted from Warr[21]).

METHODS

The data were collected in 2011. Either an electronic or a postal survey questionnaire was sent to a total of 20,333 employees, of which 11,468 responded, resulting in a 56.6% response rate. The sample consisted of employees of various occupations from 87 Finnish organizations representing different industrial sectors and geographical locations in Finland. Because of missing values, the study population varied between 11,046 and 11,226, depending on the analysis. The sample comprised 81% women and 19% men, and the mean age was 46.2 years (SD = 10.5 years). The majority of the respondents (87%) had a permanent employment contract, and 36% had a university degree. More than a third of the study population (35%) worked in the health and social work industry (see Table 1 for all demographics and Table 2 for occupational details). The characteristics of the sample were compared with those of the Finnish working population.[24] This comparison revealed that female employees (81% in the sample vs 49% in the general working population) as well as employees older than 45 years (60% vs 43%) were overrepresented in the sample, whereas employees aged 15–35 years were underrepresented (17% vs 32%). Weighting adjustment was used in the analyses to correct the possible bias caused by the overrepresentation of women and older age groups. After applying the weighting adjustment, the gender × age distribution of the sample was similar to that of the general total working population of Finland. Public sector employees in general and health and social work industry workers in particular were overrepresented in the study sample (34% in the sample vs 16% in the general working population). In addition, employees with higher university degrees were overrepresented (36% vs 13%). Thus, despite the heterogeneous nature of the sample, the distribution was not representative of the Finnish working population.

TABLE 1. Demographic Correlates of Job Boredom (N = 11,468)

	N	*M*	SD
Job Boredom			
Age, yr	$\eta^2 = 0.02$, $F_{4,1} = 61{,}342$, $P < 0.001$		
<36	2121	1.43	0.312
36–44	2381	1.16	0.690
45–50	2275	1.02	0.833
51–56	2370	0.93	0.959
>56	2079	0.87	0.831
Gender	$\eta^2 = 0.04$, $F_{1,1} = 443.467$, $P < 0.001$		
Men	2100	1.30	0.876
Women	9126	0.91	0.726
Education	$\eta^2 = 0.00$, $F_{3,1} = 10{,}522$, $P < 0.001$		
Comprehensive school	1058	0.97	0.924
Secondary school	2311	1.06	0.783
Vocational school	3724	0.95	0.768
University	4040	0.98	0.718

TABLE 2. Occupational Correlates of Job Boredom (N = 11,468)

	N	*M*	SD
Job Boredom			
Employment contract	$\eta^2 = 0.00$, $F_{1,1} = 1.749$, ns.		
Permanent	9692	0.98	0.794
Fixed-term	1515	0.95	0.603
Employee position	$\eta^2 = 0.02$, $F_{1,1} = 192.530$, $P < 0.001$		
Employee	10,158	1.02	0.771
Supervisor	1068	0.70	0.697
Industrial Sector	$\eta^2 = 0.03$, $F_{12,1} = 27.389$, $P < 0.001$		
Agriculture	52	0.98	0.771
Manufacturing	286	1.43	0.896
Construction	37	1.20	0.762
Transportation and storage	63	1.58	0.968
Information and communication	90	1.25	0.891
Financial and insurance activities	410	0.84	0.723
Professional, scientific and technical activities	864	1.15	0.853
Administrative and support service activities	300	1.01	0.803
Public administration and defense; social security	3497	1.00	0.796
Education	1168	0.96	0.794
Human health and social work activities	3946	0.88	0.669
Arts, entertainment, and recreation	116	1.46	0.922
Other service activities	397	1.07	0.752

Measures

Boredom at work was measured using the Dutch Boredom Scale,[1] which consists of six single-factor items measuring affective, cognitive, and behavioral manifestations of job boredom (eg, "I feel bored in my work"; 0 = *never* to 6 = *very often*; $\alpha = 0.85$).

Self-rated health was measured by one question: "How do you rate your health compared with peers of your own age?" with five response options (from 5 = *very good* to 1 = *very poor*). The variable was categorized into two categories: 1 = not poor (from 3 to 5) and 2 = poor (from 1 to 2 in the original scale). The reliability of the question is found to be comparable to or even better than that of the more specific questions on health.[25]

Self-rated workability was assessed by one question with a scale from 0 to 10: "Assume that your work ability at its best has a value of 10. How many points would you give your current workability? (0 means that you are currently not able to work at all)." This single-item question was derived from the Work Ability Index questionnaire,[26] a valid measure of workability.[27] Prior studies have indicated a strong association between the total Work Ability Index score and the single-item indicator.[28] The variable was dichotomized into 1 = not poor work ability (≥6) and 2 = poor work ability (<6).

Stress symptoms were measured using one item[29]: "Stress means a situation in which a person feels tense, restless, nervous, or anxious, or is unable to sleep at night because their mind is troubled all the time. Have you felt this kind of stress recently?" This item was scored on a five-point scale ranging from 1 (*not at all*) to 5 (*very often*). The item has converged with validated measures of well-being (including job burnout) and has had theoretically grounded associations with health and work characteristics.[30] This variable was recoded as 1 = stress experienced seldom or never (≤3) vs 2 = stress experienced often (>3).

Employee's turnover intentions were measured using one item: "I often think about resigning from my current job" (1 = *disagree* to 5 = *completely agree*). The variable has shown to be a valid measure in, for example, a recent study on Finnish judges.[31] It was recoded as either 1 = having turnover intentions seldom or never (≤3) or 2 = having turnover intentions often or somewhat often (≥4).

Retirement intentions were measured by one question on a four-point scale: "Have you considered retiring before the normal retirement age?" (1 = no, never; 2 = yes, sometimes; 3 = yes, often; 4 = I have already sent in my application). Many Finnish survey studies have applied this measure and shown that it predicts actual retirement.[32,33] The variable was dichotomized as 1 = no regular early retirement intentions (≤2) and 2 = having retirement intentions often or already applied for early retirement (>2).

Demographic and occupational characteristics were measured using six items to elicit participants' age, gender, level of education, type of employment contract, employee position, and industrial sector according to the classification of Statistics Finland. The demographic variables (age, gender, and education) were chosen on the basis of previous studies that associate them with job boredom,[2] whereas occupational variables were chosen to investigate the loci of job boredom in terms of occupational characteristics.

Statistical Analyses

We conducted univariate analyses of variance to examine job boredom and its demographic and occupational correlates. The differences between the categories of the independent variables were analyzed with 95% confidence intervals of the means. Because of the large size of the sample, even practically irrelevant differences among groups may become statistically significant. Thus we used a significance level of $P < 0.001$. Effect sizes (eta-squared = η^2) were also provided. Effect sizes of $\eta^2 < 0.01$ (1% of variance accounted for) or less were considered irrelevant from a practical point of view. A stepwise logistic regression analysis and odds ratio (OR) estimates were used to assess how strongly job boredom was associated with employee health- and work-related attitudes. Logistic regression was carried out in three steps, starting from an empty model. In the first step, demographic variables were included in the model. In the second step, other occupational variables were added. Job boredom was included in the third step, and as a final step the interaction variables (eg, age × job boredom) were added to the model. All analyses were conducted using SPSS 18.0 software.

RESULTS

Descriptive Results

Of the demographic variables, as shown in Table 1, employees younger than 36 years had the highest mean score in job boredom ($M = 1.43$, SD = 0.31), whereas employees older than 56 years

TABLE 3. Odds Ratios for the Final Models of Associations Between Job Boredom, Health, and Work-Related Attitudes ($N = 11,468$)

	Poor Self-Rated Workability			Poor Self-Rated Health			Stress Symptoms			Turnover Intentions			Early Retirement Intentions		
	β	OR	95% CI	β	OR	95% CI	β	OR	95% CI	β	OR	95% CI	β	OR	95% CI
Step 1															
Age, yr															
>36	−1.13	0.3***	0.21–0.49	−0.48	0.6*	0.43–0.91	0.05	1.0	0.86–1.27	0.52	1.7***	1.36–2.07	−1.51	0.2***	0.18–0.28
36–44	−0.74	0.5***	0.34–0.68	−0.16	0.9	0.62–1.17	−0.01	1.0	0.83–1.18	0.63	1.9***	1.55–2.29	−0.92	0.4***	0.33–0.47
45–50	−0.67	0.5***	0.36–0.72	−0.10	0.9	0.66–1.24	0.08	1.1	0.91–1.29	0.61	1.8***	1.52–2.25	−0.57	0.6***	0.48–0.67
51–56	−0.18	0.8	0.62–1.13	0.06	1.1	0.79–1.43	0.11	1.1	0.94–1.32	0.47	1.6***	1.31–1.95	−0.20	0.8**	0.71–0.95
<57		1.0***			1.0			1.0			1.0***			1.0***	
Gender															
Female	−0.20	0.8	0.62–1.08	−0.05	1.0	0.74–1.23	0.14	1.2*	1.00–1.33	0.20	1.2**	1.06–1.41	−0.10	0.9	0.78–1.05
Male		1.0			1.0			1.0			1.0			1.0	
Education															
Comprehensive school	1.0	2.8***	1.89–4.04	0.67	2.0***	1.39–2.74	−0.28	0.8*	0.61–0.95	−0.10	0.9	0.72–1.13	0.41	1.5***	1.23–1.84
Secondary school	0.65	1.9***	1.37–2.68	0.04	1.0	0.77–1.41	-0.35	0.7***	0.60–0.83	−0.30	0.7***	0.63–0.87	0.25	1.3**	1.10–1.52
Vocational education	0.44	1.5**	1.13–2.13	0.10	1.1	0.85–1.44	−0.18	0.8**	0.73–0.95	−0.07	0.9	0.81–1.07	0.20	1.2**	1.05–1.41
University		1.0***			1.0***			1.0***			1.0**			1.0***	
	$R^2 = 0.032$[a]			$R^2 = 0.010$			$R^2 = 0.011$			$R^2 = 0.019$			$R^2 = 0.048$		
Step 2															
Employment status															
Employee	0.45	1.6	0.94–2.62	0.37	1.5	0.95–2.22	−0.40	0.7***	0.56–0.79	0.03	1.0	0.84–1.28	0.15	1.2	0.95–1.43
Supervisor		1.0			1.0			1.0			1.0			1.0	
Employment contract Permanent contract	0.21	1.2	0.83–1.81	0.30	1.4	0.96–1.91	0.39	1.5***	1.24–1.77	0.25	1.3**	1.08–1.52	0.39	1.5***	1.20–1.81
Fixed-term contract		1.0			1.0			1.0			1.0			1.0	
Industrial sector															

(Continued)

TABLE 3. *(Continued)*

	Poor Self-Rated Workability			Poor Self-Rated Health			Stress Symptoms			Turnover Intentions			Early Retirement Intentions		
	β	OR	95% CI	β	OR	95% CI	β	OR	95% CI	β	OR	95% CI	β	OR	95% CI
Agriculture etc	−0.37	0.7	0.09–5.13	0.21	1.2	0.29–5.16	0.17	1.2	0.55–2.55	−0.05	1.0	0.42–2.17	0.40	1.5	0.74–3.00
Manufacturing	−0.91	0.4*	0.17–0.95	-0.77	0.5	0.20–1.08	−0.43	0.7	0.42–1.01	−0.33	0.7	0.50–1.05	−0.31	0.7	0.51–1.05
Construction	−0.16	0.9	0.11–6.54	0.03	1.0	0.14–7.83	−0.96	0.4	0.05–2.87	0.38	1.5	0.47–4.56	0.54	1.7	0.67–4.44
Transportation	0.33	1.4	0.47–4.08	0.15	1.2	0.35–3.85	0.17	1.2	0.59–2.38	−0.12	0.9	0.44–1.79	0.29	1.3	0.74–2.43
Information and communication	—	—	—	−0.45	0.6	0.15–2.64	0.30	1.3	0.77–2.35	−0.03	1.0	0.53–1.77	0.07	1.1	0.62–1.88
Financial and insurance activities	−0.75	0.5	0.19–1.17	−0.11	0.9	0.48–1.68	−0.13	0.9	0.64–1.20	−0.16	0.9	0.62–1.17	0.41	1.5**	1.14–1.97
Professional, technical and scientific	0.09	1.1	0.66–1.79	0.46	1.6*	1.06–2.34	0.45	1.6***	1.27–1.93	0.17	1.2	0.96–1.47	−0.26	0.7*	0.60–0.99
Administrative and support services	0.28	1.4	0.73–2.36	0.41	1.5	0.89–2.58	−0.56	0.6*	0.36–0.89	−0.30	0.7	0.50–1.09	0.02	1.0	0.73–1.41
Public administration and defense etc	0.11	1.1	0.84–1.48	0.18	1.2	0.93–1.55	0.20	1.2**	1.07–1.40	0.15	1.2*	1.02–1.33	−0.08	0.9	0.80 -1.06
Education	0.36	1.4	0.97–2.13	0.39	1.5*	1.04–2.11	0.51	1.7***	1.38–2.00	0.22	1.2*	1.02–1.51	0.18	1.2	0.99–1.46
Arts, entertainment & recreation	0.52	1.7	0.75–3.82	0.80	2.2*	1.09–4.58	0.44	1.5	0.97–2.49	0.18	1.2	0.74–1.95	0.34	1.4	0.89–2.25
Other service activities	1.01	2.8***	1.77–4.30	0.82	2.3***	1.47–3.51	0.32	1.4*	1.04–1.83	0.06	1.1	0.78–1.43	-0.14	0.9	0.64–1.19
Human health and social work		1.0**			1.0**			1.0***			1.0			1.0**	
	$R^2 = 0.051$			$R^2 = 0.024$			$R^2 = 0.025$			$R^2 = 0.028$			$R^2 = 0.057$		
Step 3															
Job boredom	0.59	1.8***	1.61–2.03	0.41	1.5***	1.36–1.68	0.22	1.3***	1.17–1.33	0.75	2.1***	1.98–2.25	0.52	1.7***	1.58–1.80
	$R^2 = 0.085$			$R^2 = 0.040$			$R^2 = 0.032$			$R^2 = 0.112$			$R^2 = 0.094$		

*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.
[a]Nagelkerke R^2 estimate reports the proportion of variance accounted for in the dependent variable based on the predictive power of the independent variables in the model.
OR, odds ratio.

had the lowest mean score ($M = 0.87$, SD = 0.83). A post hoc test demonstrated that the mean levels of job boredom differed significantly between all age groups. On average, job boredom scores decreased with age ($F_{4,11221} = 61.34$, $P < 0.001$). Men had a higher mean score ($M = 1.3$, SD = 0.88) than women ($M = 0.91$, SD = 0.72; $F_{1,11224} = 443.467$, $P < 0.001$). Furthermore, employees who had completed secondary school had the highest mean score of job boredom ($M = 1.1$, SD = 0.78; $F_{3,11129} = 10{,}522$, $P < 0.001$) when compared with other educational groups (mean scores for all demographic groups are presented in Table 1). Nevertheless, the mean scores showed little variation between educational cohorts, and the post hoc test found that only the job boredom mean scores of employees with secondary school education differed significantly from those of other educational groups. Furthermore, the effect size of education indicates that it had little relevance from a practical point of view (education accounted for less than 1% of the variance of job boredom).

Of the occupational variables presented in Table 2, employees had a higher mean job boredom score ($M = 1.0$, SD = 0.77) than supervisors ($M = 0.7$, SD = 0.68; $F_{1,11224} = 192.530$, $P < 0.001$). Employment contract was not significantly related to feeling bored at work ($F_{1,11205} = 1.749$, ns). As regards industrial sectors, employees in transportation and storage reported the highest mean scores of job boredom ($M = 1.58$, SD = 0.97) along with workers in manufacturing ($M = 1.43$, SD = 0.90) and in the arts, entertainment, and recreation industries ($M = 1.46$, SD = 0.92). Employees working in finance and the insurance sector ($M = 0.84$, SD = 0.72), in health and social work ($M = 0.88$, SD = 0.67), and in the education sector ($M = 0.96$, SD = 0.79; $F_{12,11213} = 27.389$, $P < 0.001$) reported the least job boredom (Table 2). Apart from employment contract, the occupational factors included in the analysis can also be considered practically significant ($\eta^2 > 0.01$). The post hoc test demonstrated a significant difference between the mean levels of job boredom in certain industries. Industries such as manufacturing, transportation and storage, information and communication technology, arts, recreation and entertainment, and construction did not differ significantly from each other, but did show significant difference in comparison to industrial sectors such as finance, education, health and social work, and administrative and support service activities. In sum, the means of industries with low job boredom did not differ from each other but differed significantly from the industries with the highest mean scores of job boredom.

Job Boredom, Health, and Work-Related Attitudes

Next, we investigated whether job boredom is related to self-reported health variables and work-related attitudes, after adjusting for individual demographic and occupational factors. First, experiencing job boredom increased the likelihood of decreased workability (OR = 1.8; $P < .001$). In addition, self-rated workability decreased with age and increased with higher education. Employees with the lowest level of education were the most likely to rate their workability as poor (OR = 2.8; $P < .001$), whereas those with a university education were least likely to do so. Furthermore, working in "other service activities" increased the likelihood of poor workability (OR = 2.8; $P < .001$).

Job boredom was also associated with poor self-rated health. Employees experiencing job boredom were 1.5 times more likely to rate their health as poor ($P < .001$). Similarly to workability, more highly educated employees had better self-rated health than less educated employees. In addition, health perceptions decreased slightly with age. Employees working in other services (OR = 2.3; $P < .001$) and the arts, entertainment, and recreation industry (OR = 2.2; $P < .05$) were the most likely to rate their health poorly. Also, those working in professional, technical, and scientific activities (OR = 1.6; $P < .05$) and in education (OR = 1.5; $P < .05$) had a higher likelihood of poor self-rated health. After testing for the interaction effects, job boredom was found to interact with education ($\beta = -0.149$; $P < .01$) in such a way that the association between job boredom and poor self-rated health was stronger among less educated employees.

Bored employees were 1.3 times more likely to experience stress symptoms than their less bored colleagues. Particularly those working in professional, technical, and scientific activities (OR = 1.6; $P < 0.001$) and in education (OR = 1.7; $P < 0.001$) were more prone to experiencing stress symptoms. Having a permanent employment contract also associated with stress (OR = 1.5; $P < 0.001$), that is, employees on a permanent contract were more likely to experience stress symptoms than those on a fixed-term employment contract. Moreover, employees were less likely to experience stress symptoms than supervisors (OR = 0.7; $P < 0.001$). Finally, the more educated employees were, the more they reported stress symptoms. Education and job boredom had an interaction effect on stress symptoms ($\beta = -0.152$; $P < 0.001$). Although job boredom was associated with stress symptoms regardless of educational level, the effect was stronger among less educated employees.

In addition to health variables, job boredom was related to employees' turnover intentions ($P < 0.001$). Bored employees were 2.1 times more likely to have turnover intentions from their current job, and job boredom was more strongly associated with turnover intentions than other variables in the model. The association between age and intentions to leave was as expected: employees older than 56 years were less likely to consider leaving their jobs than those in other age groups. The likelihood of exit intentions reached their peak between the ages of 36–50 years (OR = 1.8; $P < .001$). Furthermore, the likelihood of turnover intentions was stronger among women (OR = 1.2; $P < .001$) and those with a university education.

Of all the variables in the model, job boredom was also most predictive of employees' intentions to retire prematurely (OR = 1.7; $P < .001$). Again, the association between age and retirement intentions was expected: the likelihood of having early retirement plans increased with age. Furthermore, the more educated employees were, the less likely they were to plan early retirement, whereas the least educated employees were most likely to consider early retirement (OR = 1.5; $P < .001$). Employees with a permanent contract were 1.5 times more likely to plan early retirement than employees with fixed-term employment. Gender interacted with job boredom in such a way that job boredom had a stronger effect on the early retirement intentions of male employees ($\beta = 0.247$; $P < 0.001$).

Overall, these results indicated that the levels of job boredom vary in different demographic and occupational groups. In addition, job boredom is particularly associated with negative work-related attitudes, but also with several self-reported health outcomes.

DISCUSSION

This study among a large sample of Finnish employees had two main purposes: To explore the prevalence of workplace boredom in different demographic and occupational groups and to investigate whether job boredom is associated with negative health perceptions and work attitudes. This investigation was spurred by the notion that in contrast to other negative states of ill-being at work (eg, job stress, burnout), surprisingly little academic research exists on job boredom; how common it is in different types of workplaces and how it is associated with various outcomes.

The current findings showed that young and male employees experience job boredom more often than older and female employees. Job boredom was also experienced more in industries such as manufacturing, transportation and storage, and arts, entertainment, and recreation. In addition, we found a clear association between job boredom and self-rated health indicators, that is health status, workability, stress symptoms, and work-related attitudes, that is, exit and early retirement intentions.

The Correlates of Job Boredom

This study showed that education played only a very minor role in experiencing boredom in Finnish workplaces. Thus, this study does not support the proposition that the highly educated experience more job boredom, which is presented elsewhere.[14] Neither does low education as such seem to expose people to job boredom.

Although we found no clear evidence on differences in workplace boredom according to educational level, our findings indicated that employees in blue-collar industries experience more job boredom than those in other industries. Industries such as storage, transportation, and manufacturing entail jobs that are low skilled, lack challenge, and consist of monotonous tasks, all of which are features associated with boredom at work.[2] The findings are congruent with the traditional stereotype of job boredom in blue-collar jobs, whereas health and social work and education industries were among those with the least job boredom among both male and female employees. In contrast to the literature explaining boredom-proneness through attributes associated with gender roles, norms, and socialization,[2] our analyses indicate that job boredom is not an issue of gender alone. In addition to the blue-collar industries, employees working in the arts, entertainment, and recreation industries experienced boredom at work relatively often. Furthermore, levels of job boredom in professional, scientific, and technical activities as well as in information and communication technology industries were slightly higher than those in other industries. These findings outline workplace boredom as a phenomenon that may have its roots not only in task monotony but also in other elements of the job, such as its meaning to the employee[9] and underchallenging demands.[1] Thus, the results expand our understanding of the loci of job boredom beyond the scope of common stereotypes and raise the need for further investigation of the job and other features that expose workers to boredom.

The analyses also showed that age was negatively associated with experiencing boredom at work. More specifically, employees younger than 36 years experienced more job boredom than older employees. This may seem counterintuitive, as the longer an employee occupies a job, the more routine and, hence, boring it might become.[17] Nevertheless, our findings are congruent with other studies that show that job boredom has a declining linear relationship with increasing age.[34] Because of the representativeness of the sample across age groups, the results cannot be explained by the "healthy worker effect," that is, that only the healthy elderly remain employed.

It may be that the variety and challenges of tasks also increase with increasing age. Another explanation may be drawn from the field of developmental psychology, in which the Selection, Optimization and Compensation theory[35] posits that as individuals age, their biological potential declines, resulting in diminishing levels of performance, increasing levels of challenge and a need to adjust functioning to compensate for the losses. Aside from the mechanisms of aging, in the early stages of working life, task features might not always match individual's motives and needs, especially if one's capabilities are perceived as exceeding the demands of the job. For example, at a somewhat later stage of one's career, an employee might get promoted and accordingly obtain access to a more varied task description. Indeed, in this study, supervisors were less bored at work than employees. The tasks of supervisors typically entail more autonomy and variety than those of employees, and these job resources are known to relate to more work engagement and less job boredom.[1,36] Furthermore, supervisors might be more motivated and able to actively escape boredom by, for example, seeking new challenges.[37]

Health, Work-Related Attitudes, and Job Boredom

Job boredom was strongly associated with variables concerning organizations and employees, namely employee health- and work-related attitudes. After controlling for demographic and occupational variables, job boredom increased the odds of having intentions to leave one's present job and to retire early. As job boredom is characterized by passive indifference and a lack of interest toward tasks that feel meaningless,[1,8,13] it may lead to disengagement and alienation from work and consequently to considering changing one's job or prematurely leaving work life altogether.[38,39] This type of "withdrawal behavior" can be perceived as a coping mechanism for job boredom.[40] If an individual lacks the ability to adequately cope with the situation, negative health effects might start accumulating.

Job boredom increased the likelihood of negative health-related outcomes and stress symptoms. Earlier research has mostly focused on the attitudinal and behavioral outcomes of job boredom, that is, withdrawal, rather than its impact on health.[2] There is growing evidence of burnout's negative health consequences,[41,42] which is typically related to excessively high job demands.[43] In contrast, job boredom has mainly been associated with insufficient job demands.[1,6] Thus, it was interesting to find that job boredom increased the likelihood of experiencing poor health and poor work ability even more than most of the demographic and occupational variables. Having lower education increased the likelihood of poor self-rated work ability and health more than that of experiencing boredom at work. The association between job boredom and poor self-rated health was also stronger among employees with less education. Moreover, job boredom increased the likelihood of experiencing general stress symptoms, and this association was also higher among those who were less educated. Further research should examine whether job boredom, also in the long-term, could predict similar symptoms and health consequences to job burnout, and whether these impacts vary between different educational groups.

Research has also shown that job boredom can boost behavior that is beneficial to the organization.[16,44] It would be important to investigate whether there are general conditions under which job boredom results in poor health and increased strain and whether there are conditions under which some type of job boredom could even be beneficial to employee health, and to, for example, recovery.

Limitations

This study has certain limitations. First, common method bias is always attached to self-report questionnaires.[45] Nevertheless, our focus was on job boredom, which is a state that can be accurately reported only by the individual alone, as it may often be hidden under a façade of more normative behavior. For the same reason, social desirability might be another source of common method bias in this study, as job boredom may be perceived as a taboo that employees will not admit to experiencing. Congruently in this study, the overall scores of workplace boredom were low. Nevertheless, the distribution of mean scores did not deviate substantially from normality, and as previously noted by other researchers, low scores are a common challenge when measuring negative phenomena such as burnout. Thus it should be considered noteworthy that significant relations to both independent and dependent variables were found, despite low levels of job boredom. In this study, we have addressed the importance of making a distinction between boring, understimulating jobs and the subjective experience of boredom at work. This is rarely investigated and was this study objective. In the future, it would be important to study boredom with objectively measured indicators of health and retention.

Second, longitudinal designs should be applied in future research to further investigate, for example, how job boredom develops over time and what its long-term health consequences are. Third, the sample was not fully representative of the whole Finnish working population. Some industries were overrepresented, such as health and social work, whereas other employment sectors, such as the private sector, were underrepresented. Nevertheless, the sample provided a wide, heterogeneous coverage of the Finnish working environment.

To improve representativeness, we applied weighting adjustment to the sample, after which the results could be generalized across gender and age.

CONCLUSIONS

This study contributes to an underresearched area of employee ill-being, that is, job boredom, by identifying its prevalence and sociodemographic correlates and by estimating its relation to negative organizational and health outcomes. As a practical implication, it would benefit organizations to pay attention to redesigning work in a way that provides employees with challenging jobs and opportunities for development. Special focus should be given to providing young employees with opportunities to use and develop their potential. In addition, organizations could support the efforts of employees to actively influence the boundaries of their jobs themselves to alleviate boredom.

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An employee who was not there: a study of job boredom in white-collar work

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Abstract

Purpose – Job boredom is an amotivational state at work, where employees lack interest in their work activities and have difficulties concentrating on them. Although recent research suggests that job boredom may concern a wide range of industries, studies investigating the experience and its emergence in white-collar work are scarce. Thereby the purpose of this paper is to contextualize job boredom by exploring the experience and its preconditions in white-collar work.
Design/methodology/approach – This inductive, exploratory study employed data from 13 focus group interviews ($n = 72$) in four organizations to investigate the emergence and experience of job boredom.
Findings – Three types of job boredom was found. Each type involved distinct temporal experiences: inertia, acceleration and disrupted rhythm at work. The findings suggest that different types of job boredom involve specific conditions that hamper the activation of individual capabilities and disrupt temporal experience accordingly.
Research limitations/implications – Extending the conceptualization of job boredom may enable better understanding of the variety of consequences often associated with the phenomenon.
Practical implications – It is also important for organizations to recognize that there are different types and various preconditions of job boredom in white-collar work, as it may have a negative impact on employee well-being and performance.
Originality/value – The results indicate that job boredom is a more nuanced phenomenon than earlier believed. By identifying job boredom in white-collar work as an experience with various forms and respective preconditions, this study expands the understanding of the phenomenon and its emergence.
Keywords Qualitative, Employee well-being, Disengagement at work, Job boredom, White-collar work
Paper type Research paper

Introduction

> Tedium is not the disease of being bored because there's nothing to do, but the more serious disease of feeling that there's nothing worth doing. This means that the more there is to do, the more tedium one will feel. -Fernando Pessoa

According to online dictionaries, the verb "to bore" refers to synonyms such as "to annoy, be tedious, bother, exhaust, fatigue, jade, send to sleep, bother, wear out." Job boredom is an unpleasant state of discomfort that involves lack of interest in tasks, and difficulties concentrating on them (Fisher, 1993). When employees are not engaged in their tasks, they are less likely to fully employ their capabilities (Kahn, 1992). Organizations should be concerned, as job boredom may hamper employee well-being and productivity (Loukidou *et al.*, 2009). Despite these implications for employee mental health and organizational efficacy, job boredom remains a neglected area of research (Piotrowski, 2013). It is traditionally associated with monotonous, low-skilled work. However, recent

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research indicates that job boredom concerns a wide range of industrial sectors and employees (Harju *et al.*, 2014), suggesting that it is not solely determined by certain types of work. Yet we have little knowledge of the experience and emergence of job boredom among white-collar workers.

More recently, research has focussed on the negative outcomes of boredom at work, such as counterproductive work behaviors (Bruursema *et al.*, 2011; Skowronski, 2012; Van der Heijden *et al.*, 2012) and poorer self-rated health and work ability (Harju *et al.*, 2014). Still, there is a lack of understanding of other conditions than underemployment, under which job boredom may emerge in current work environments. It is also important not to generalize from studies conducted decades ago on factory workers, or to apply these to modern day work environments. The experience of job boredom and its origins in white-collar work may deviate from that of assembly line jobs, and it has also been assumed to be more common than generally acknowledged (Rothlin and Werder, 2008). In current workplaces with pressing demands for efficiency and productivity, the phenomenon is a kind of a taboo that often remains hidden and thus goes unnoticed.

This study set out to examine job boredom, and the conditions of its emergence in white-collar work in more detail. Using semi-structured focus-group interviews in four organizations of different industries, we investigated: first, the characteristics of the experience of job boredom in white-collar work and second, the conditions under which it emerges. To fully employ one's capabilities, an individual must be present psychologically, not just physically (Kahn, 1992). This study focusses on what is standing in their way.

Job boredom

Job boredom is more than occasional tedium. In the field of work psychology, job boredom is defined as a psychological state of unwell-being, consisting of affective and cognitive components that are manifested in behavioral outcomes, such as engaging in distractions rather than the tasks at hand (Reijseger *et al.*, 2013). The affective component refers to the unpleasantness of the experience, which is often combined with passiveness (Warr, 1990), whereas the cognitive aspects of job boredom refer to situations in which tasks lack challenge and do not provide stimuli to engage individuals (Csikszentmihalyi, 1975). Thus, it is no surprise that recent research has begun to consider job boredom as a conceptual opposite to work engagement, a positive state of work-related well-being characterized by vigor, dedication and absorption (Schaufeli and Salanova, 2013). Job boredom is also conceptually distinct from burnout, which in turn refers to a state or process of mental exhaustion that involves negative attitudes toward work (cynicism), depreciation of one's accomplishments and reduced professional efficacy (Maslach *et al.*, 2001). Job boredom is rooted in the experience of a given situation or activity lacking meaning (Van Tilburg and Igou, 2012). According to Kahn (1990), boredom can be perceived as a psychological defense mechanism, which causes individuals to disengage and withdraw from their work roles, which they perceive as devoid of meaning. As with other affective responses, job boredom is determined by the subjective attributions of work situations (Mackey and Perrewé, 2014). Bored employees are acutely aware of their inability to engage in the activities that they would like to, due to reasons outside their control (Eastwood *et al.*, 2012). The cognitive process can thus be seen to precede the affective experience of job boredom. Bored employees are commonly seen as suffering from a lack of activation, which they try to cope with by focussing on distractions rather than on their tasks (Reijseger *et al.*, 2013). In contrast to perceiving job boredom as passiveness, Barbalet (1999) suggests that the absence of interest results in negative feelings of restlessness,

which cause individuals to actively seek ways with which to improve their situation. He distinguishes boredom as a state of active discomfort, in contrast to ennui, which is more a question of accepting and of passively surrendering to the state of indifference. Gasper and Middlewood (2014) in turn construe boredom as a state of de-activation that may nevertheless encourage a person to approach new experiences. Although as a passing experience, job boredom is rather common and harmless, numerous negative outcomes for individuals and organizations may arise if the situation continues, such as decrease in overall quality of life, depression, misuse of drugs and alcohol, low job satisfaction and stress (for an overview, see Loukidou *et al.*, 2009). However, some recent findings associate experiencing boredom at work with potentially positive outcomes, such as creative thinking (e.g. Mann and Cadman, 2014). Barbalet (1999) suggests that boredom may drive individuals to find meaningfulness in their activities and thus motivate proactive behavior. Deriving such a variety of outcomes from one phenomenon suggests that job boredom is still a gray area of human experience at work. Understanding the mechanism behind the consequences requires further examination of the experience itself. Thereby, the objective of this study is to scrutinize how, and in what contexts, job boredom is experienced, particularly in white-collar work.

Conditions of job boredom

Job boredom may be understood as an unpleasant experience of low arousal and dissatisfaction, caused by a work situation that does not offer adequate stimulation (Mikulas and Vodanovich, 1993). Studies differ in attributing job boredom to stable characteristic inherent to a personality or to external factors in the environment (Kass *et al.*, 2001). Individuals may differ in personal tendencies to experience boredom at work (Watt and Hargis, 2010): levels of optimal stimuli, for example, may vary. Job boredom is often associated with insufficiently challenging demands at work (e.g. Reijseger *et al.*, 2013; Csikszentmihalyi, 1975). However, studies indicate that boredom is more than the lack of challenge: other job characteristics, the social environment of the workplace and societal context are also associated with the feeling of boredom (e.g. Loukidou *et al.*, 2009). For example, a well-known job strain model (Karasek, 1979) suggests that the combination of work-related demands and the degree to which individuals are able to influence the way in which they work determines the strain they experience at work. According to this model, the optimal combination for employee well-being occurs in "active jobs," in which work is high on both the job demands and job decision latitude, whereas the opposite, "passive jobs," in which the level of job demands and job decision latitude is low, involve a decline in overall activity and cognitive employment. Congruently, the job demands resources (JD-R) model (Demerouti *et al.*, 2001) is often used for arguing that high levels of both job demands and job resources foster work engagement, whereas a situation in which the demands of the job exceed employee's job resources leads to burnout. Recent research has further applied the JD-R model to job boredom and discovered that it is related to lack of both job demands and job resources (Reijseger *et al.*, 2013). In short, both job boredom and burnout are characterized by an unpleasant state of de-activation, but the former is perceived to follow on from understimulation, whereas the latter is a result of overstimulation (Schaufeli and Salanova, 2013). However, the relationship between job demands and job boredom may not be as clear cut as the existing models of work-related well-being lead us to believe. For example, some studies suggest that boredom may also emerge from situations in which excessive demands hamper the

meaningfulness of activities (e.g. Acee *et al.*, 2010). Rather than focussing on which jobs are more boring than others, research should explore the relationship between employees and their work roles across professional boundaries. The subjective nature of job boredom implies that even employees who engage in a variety of tasks in their work can be exposed to the experience. The rise in the educated workforce is predicted to increase job boredom, as more jobs will leave the complex skill-set of employees underutilized (Rothlin and Werder, 2008). Yet contextualizing job boredom in white-collar work still remains a neglected area of research.

This study makes a number of contributions: theoretically, we add to the scarce knowledge on a type of negative well-being at work, namely, job boredom, by extending and contextualizing the experience to white-collar work beyond traditional stereotypes. Employing qualitative methods and an inductive approach to study job boredom enables us to gain a more comprehensive view of the actual experience, as perceived by employees themselves. Empirically, we seek to identify the variety of conditions from which job boredom may emerge. This study further expands our understanding of the nature of job boredom and how it is experienced in specific work situations. As such, it seeks to shed light onto the gray areas of research of human experience at work.

Method

This study employed an inductive, exploratory approach to gain an understanding of the experience and emergence of job boredom in white-collar work. This method was chosen for its richness in data, its flexibility in exploring a little-known phenomenon and as such, its suitability for the purposes of the research. In settings in which little is known about a topic, qualitative methods are advocated for their ability to discover the underlying nature of the phenomenon (Strauss and Corbin, 1990).

Sampling and data collection

The first author conducted 13 focus group interviews ($n = 72$) in four organizations in 2013. As our interest was in the emergence of job boredom in white-collar work environments that have not been associated with job boredom in past literature the organizations were chosen accordingly: these were a communal child care institution, a private IT service provider, a private health care service provider and a branch of a large bank. Geographically, the organizations were located in different parts of Finland. They were chosen to represent different professional groups and industrial sectors, in order to gain an overview of the area of interest across professional boundaries in white-collar work. The informants worked mainly in customer service, sales and health- and child-care jobs, as well as in various office work positions ranging from assistants and coordinators in financial management and HR to lawyers and IT-developers.

Both supervisor groups and employee groups were interviewed in every organization. Each group had six participants on average. The participants of the groups were chosen by a contact person in the organization, who was instructed to choose people who were demographically diverse (age, career length, gender, etc.). Other instructions were not given, and the selection of the groups was not influenced. Focus group interviews were conducted to gain further access to the specific features of different industries and organizations. As the interviews were constructed as group discussions, the participants were able to discuss the context of their work in their own terms: this was to enable better understanding of the actual situation of the organization and of the employees. However, the presence of others may have normatively biased the content of the discussion. We tried to overcome this issue by approaching negative experiences of

job boredom as being the opposite to positive experiences. We also guaranteed full confidentiality of the discussions.

The participants were interviewed using an open-ended, semi-structured format. The length of one interview was approximately two hours. To cover the main interest, topics of discussion concentrated on affective-motivational experiences at work and factors related to those experiences, namely, positive, energetic experiences and their opposite: negative feelings and lack of interest in work. The focus was on the participants' own descriptions of job boredom experiences. We used follow-up questions ("probing") to gain more information on the aspects of a given topic.

Coding and analyses

The interviews were recorded and transcribed word by word. Atlas.ti software was used for managing and coding the data. The analysis was conducted by the first author, but the categories were discussed and agreed upon with the second author. The methods of analysis were informed by grounded theory (Locke, 2001; Strauss and Corbin, 1998). Data analysis was performed in three stages: first, thematic coding framework was constructed around the central aim of identifying the data indices that described the job boredom situations. Following this, a more focussed coding scheme was outlined to identify the features associated with these points of interest. Data categories were then constructed and organized under more abstract themes. The procedure was similar to that of Gioia and colleagues (2013): developing first order concepts further into second order themes on the basis of commonalities among initial categories, and finally, aggregating themes into concluding dimensions. An example of the data structure is shown in Figure 1.

The judgment of categories followed the previously applied rationale of: first, how the participants discussed their experiences of job boredom; second, how the codes held up to increasing scrutiny; and finally, their correspondence with theory and previous findings (Smerek, 2011). The analysis process was iterative and went back and forth between the data. The emerging theory enabled mirroring of the concepts against the rest of the data.

Results

This research addressed the question of how job boredom is experienced and how it emerges in white-collar work. We found three types of job boredom, distinctly characterized by dysfunctional activation; unsatisfactory use of capabilities; and distorted temporal experience of the present (see Table I). Each type emerged from a respective set of conditions involving work and its environment.

Type 1: inertia at work

Inertia at work is a type of job boredom characterized by the experience of a stagnated present. This type of job boredom in the study originated from situations in which work tasks did not enable employees to fully activate themselves to employ their capabilities and invest themselves in their work performance. It followed that these employees then missed out on professional growth and learning, and consequently lacked the experience of progress. The conditions under which inertia at work emerged were: Person-job misfit; routinization; and idleness (see Table II).

Person-job misfit. Individuals who had drifted, out of necessity or chance, into a job that did not match their personal motivations and desires were exposed to inertia at work. When little other than income inspired or motivated work performance, the

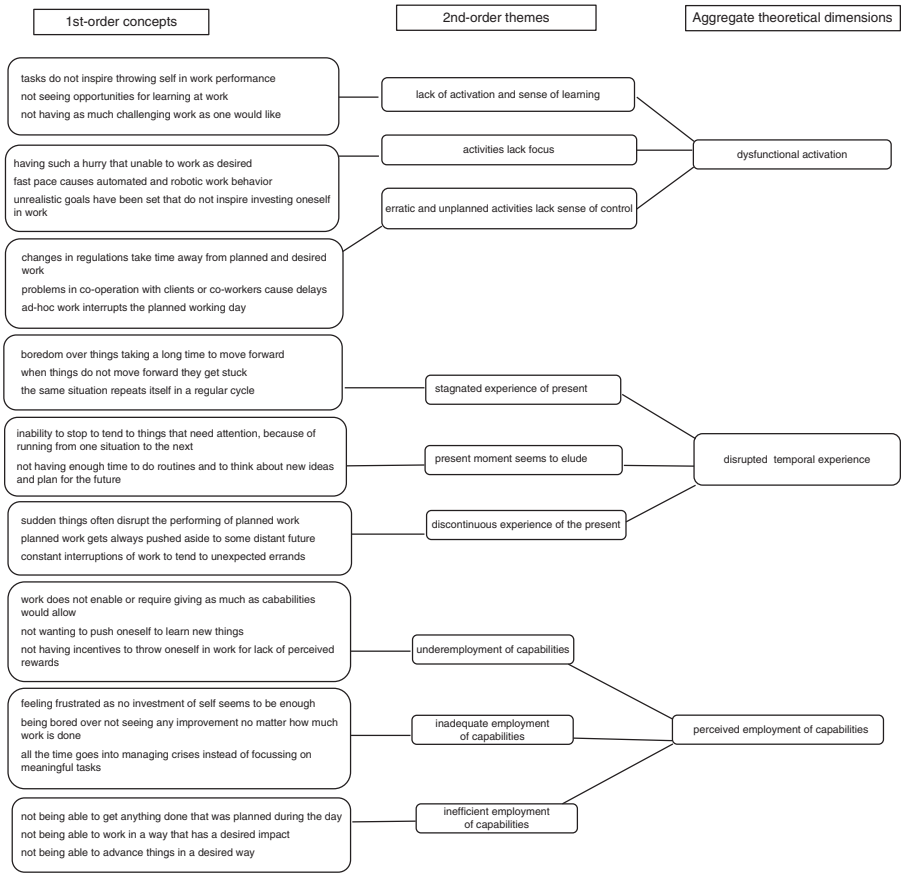

Figure 1.
Data structure

incentives to fully employ one's capabilities were hard to find. Under such conditions, employees tended not to give anything more of themselves to work than routine performance. By not throwing themselves into their work, employees missed out on the sense of accomplishment derived from testing and developing their abilities. Some employees might have entered an organization with a different set of expectations than the reality turned out to be, and were therefore discouraged or unmotivated to invest themselves in their work. Not having found the work role that best suited individual motivations and abilities was perceived to be one of the causes of job boredom. A supervisor in banking described this situation as typical among young employees, who were eager to get ahead in their careers but found themselves doing tasks that did not match their expectations. The same misfit of individual motivations and task descriptions occurred when, for example, highly educated individuals felt that they had been recruited for jobs that were below their competence levels.

Routinization. Inertia at work also emerged from situations in which tasks were so familiar that their performance did not require cognitive effort. It occurred, for example, after employees had been in the same job for a long time and felt that they were no longer getting anything out of it. Even though these employees might have once

	Type 1: inertia at work	Type 2: acceleration at work	Type 3: dysrhythmia at work
Dysfunctional activation	Deactivation	Overactivation	Erratic activation
	Lack of effort and learning "[when bored] you're not as present at work […] you do the basics, but nothing extra […]"	Lack of focus "If it's really busy and you can't do the work in the way you want to, boredom can set in"	Lack of control "When you become the target of someone's bad behavior at work it can get boring at times"
Temporal experience of the present	Stagnated present	Eluding present	Discontinuous present
	Lack of progress "One reason for getting bored is the feeling that it takes a long time for things to move forward" "[reason for boredom is] when no progress is made and things get stuck"	Lack of routine "There are weeks that I know there are things that need to get done, problems to address, people to meet and discuss things with, but my calendar just fills up and I'm just putting out fires. It feels likehaving no time to stop. And the longer it lasts the more I wonder if there is any sense in doing this"	Lack of concentration "I notice that I get disrupted if I plan to do something specific, but then something comes up and I have to push my plans to another time"
Perceived employment of capabilities	Incapacity	Inadequacy	Inefficacy
	Capabilities are under-employed "[Boredom] felt like not getting as much out of [work] as I should or not being able to give as much as I'd like" "When you only work for your paycheck, you don't really throw yourself into it" "Boredom is something that's easy to hide behind, if you don't want to invest yourself [at work] in keeping up"	Capabilities are not used as they should "When the situation never improves, no matter how much I work – this is what frustrates and bores me" "I felt inadequate […] all my time seemed to go to handling matters other than those I was supposed to"	Capabilities are not used as efficiently as desired "When I go to work in the morning thinking I have this and that to do, and by the afternoon I know I've only done maybe half of those things and the rest will keep piling up […]"

Table I.
Types of job boredom

enjoyed their work, and might still like their work environment, they had lost the spark that used to drive them forward. Furthermore, employees at a later stage of their careers perceived that they lacked opportunities to advance in their careers and believed they had "reached the end of the line." On the one hand, getting stuck in a work role was also perceived to limit the scope of employees' possibilities outside their occupied roles. On the other hand, familiar routines were seen as a safeguard against changes, a comfort-zone, into which individuals withdrew themselves and were reluctant to try the new and the unfamiliar. Routinization was not necessarily experienced as a problem, if it was the individual's preferred situation. However, when it conflicted with the expectations or

Person-job misfit	"An employee said that she only works for the money and that she couldn't be less interested in the job. Her interests and education are elsewhere, and the job doesn't provide for living. She performs well in her tasks, no complaints, but does nothing extra"
	"I see it in younger employees, that they are bored with their work and when they are not engaged they might not give their 'all' to get a sense of accomplishment out of it, which would give them good vibes to come to work"
Routinization	"Although everything was fine, I have to admit I was a bit routinized in certain things and felt a bit like: well, I know these people so well already so what am I doing here anymore? What more can I give here?"
	"Boredom is one of the big challenges we face in our work, because we just keep repeating the same cycle of tasks. We do the same things, month in, month out"
Idleness	"I have to admit I experienced [boredom] when I returned from maternity leave, and had been reassigned to another task. I was still finding out what it was I was supposed to be doing. And maybe others also thought that they can't pour a lot of work on someone who's just started. So it was just awful. I'd rather it was really busy than feel totally useless"
	"It's a bit slow at the moment, as I moved to another location and all the cases I had were left to the previous office. And the market is a bit slow at the moment as well, so I get very few appointments. So I've thought about what I should be doing all day […]. It's difficult […] the feeling that there's nothing to do. Days feel pretty long like this"

Table II. Conditions of inertia at work

norms of the environment, job boredom could emerge as a defense mechanism. The feeling of safety in an environment full of uncertainty was seen to cause employees to deny the need to change, and succumb to stagnation. According to some supervisors, pressures from the environment could weaken employees' courage to break away from familiarity in order to learn new things at work. Routinization also occurred under conditions of repetition. When the variety of tasks was limited and the cycle of specific routines were repeated, employees described their work performance as flying on auto-pilot rather than investing themselves in their work and employing their capabilities.

Idleness. Inertia at work was described as setting in when there was too little work to be done overall, or when tasks were not challenging enough to engage employees. In such situations, employees experienced a desire to use more of their capabilities but were unable to do so within the boundaries of their tasks. Idleness seemed to be associated with an early career stage, when employees who had just entered an organization had not yet established themselves or had not yet acquired the customer base needed to keep them busy. One employee recalled a time after returning to work from parental leave and facing a situation in which her work had been reallocated to others, leaving her with tasks that did not seem to have much purpose other than to give her something to do. Another employee experienced job boredom after transferring to a different unit and had not yet established a new customer base. This led him to be forced to think of ways to fill the long days of idleness with something useful. Some organizations had less hectic periods (e.g. summer) during which employees did not have as much to do as they would have liked, which led them to experience feelings of anxiousness, restlessness and frustration.

Type 2: acceleration at work

Acceleration at work refers to a work situation in which the present seemed to elude the employee as the timespan diminished. Here, employees were unable to bring themselves into the present situation because they lacked the ability to grasp it. Employees were operating in a state of overactivation, which hindered possibilities to stop in order to

reflect and focus on the meaningful aspects of work. Acceleration involved feelings of inadequacy, as no amount of self-investment seemed to carry adequate rewards (Table I). Both employees and supervisors reported that as a prolonged condition, it made them question the whole meaning of their work. The conditions of acceleration related to work being organized in a way that did not enable employees to focus on being fully present in their tasks. These conditions were: work overload; pace of work; and unrealistic goals (see Table III).

Work overload. Work overload occurs when there is more to do than there is time for doing it. Supervisors in particular reported being bored by not having sufficient time to focus on advancing the things they perceived as meaningful in their work, such as meeting and communicating with employees. One of the supervisors talked about "putting out fires"; racing from one urgent situation to the next, rather than being able to stop and focus on work they considered important.

Pace of work. Acceleration was experienced as resulting from a pace of work that hindered the planned or desired accomplishment of tasks. When days consisted of hectic racing through situations rather than focussing on tasks that needed planning and preparing, employees and supervisors did not fully employ themselves, and withdrew themselves from their work roles. For example, when repetitive customer service tasks were performed at a rapid pace, there was little to distinguish working conditions from those of assembly line jobs. An employee in banking described how being able to be present and focus on customers resurrected the feeling of meaningfulness at work after a period of performing repetitive tasks under hectic conditions.

Unrealistic goals. In addition to workload, employees experienced job boredom due to unrealistic goals that they knew they would not achieve. Working conditions, under which "nothing is enough," despite employees working "to their limits," was experienced as senseless.

Type 3: dysrhythmia at work

The third type of job boredom, dysrhythmia at work, refers to distorted temporal patterns (rhythm) experienced in work performance. The rhythm of work is composed of the sequences of activities planned and employed by the individual. The feeling that the rhythm of work was disrupted was identified as a type of job boredom that emerged from the social environment of work. A disrupted rhythm of work involved the experience of a discontinuous present, where employees were not able to perform their work as planned or desired. Because of external hindrances to work performance, these employees felt that their work activities were merely reactive rather than planned and thereby controlled. Not being able to perform as planned involved a feeling of inefficacy (Table I). The conditions that fostered job dysrhythmia were: constraint; problems in co-operation with others and; interruptions (see Table IV).

Work overload	"[…] when it feels like you never see the table under the piles of paper, the motivation to work is pretty much gone"
Pace of work	"On the worst days there are couple of hundred of receipts to write, and then it feels like I'm a robot rather than a person […]"
Unrealistic goals	"If the goals are too high, the feeling of inadequacy comes from knowing there's no way to reach them. When the average work day just isn't enough, boredom sets in"

Table III.
Conditions of acceleration at work

Constraint	"If they try to standardize our performance too much, almost to the extent that someone tells you what to say to a client […] if someone has done the job for decades, you'd think he knows what he's doing […]"
	"We have more and more of this documentation that is sometimes quite boring, I have to admit. If I spend three or four days a week just doing paperwork, when my primary job is handling clients […] it gets boring and I feel like I don't want to do this anymore […]"
Problems in co-operation	"I had a colleague who didn't even do half of the things she was supposed to do, and [I got so bored with it] I had to take leave of absence to solve the situation for myself"
	"The frustration over having to do things I have agreed to do, and then to find others haven't done their part […] having emptied my calendar for the day and reserved time for doing it, […] and being unable to do what I have planned because someone hasn't done what's been agreed"
	"I am bored of […] being passionate about this job and working with others who couldn't care less […] when I can see that the person is clearly not in the right kind of work and they don't care about it […] that's what bores me"
Interruptions	"Thinking I'm going to get something done today, and then realizing at 4 pm that in reality I haven't had time to do any of the things I'd planned for today […] something comes up that interrupts all my planned work"

Table IV.
Conditions of dysrhythmia at work

Constraint. Constraint refers to feeling that one's autonomy at work is hindered. Employees reported how bureaucratic tasks or the regulation of work performance fostered the experience of job boredom. Constraint hindered employees' and supervisors' ability to concentrate and invest themselves in meaningful activities. By imposing on desired work performance, constraint disrupted the rhythm of work. Constraint was seen as a hindrance to the social aspects of work. Job boredom often emerged from the conflicting demands of building relationships and bureaucratic tasks that seemed to take time away from this. For example, employees in sales organizations described how reporting on client meetings sometimes took more time than the actual meetings themselves. Activities such as excessive documentation were perceived as taking time away from work that was considered important. An employee in the health care organization described feelings of frustration as she was not being able to focus on the activities she knew and liked best. When performance goals often excluded time spent on documentation, such activities felt meaningless to the employees. Regulating or formatting work performance was also seen as constraining their autonomy to employ individual strengths and capabilities in the way they wanted. Job boredom was experienced particularly when the purpose of some of these regulations, such as sales pitch formats, was unclear to the employees.

Problems in co-operation. Employees experienced job boredom when problems occurred in co-operation with colleagues or clients. These events were described as hindrances to planned work performance that thereby disrupted the rhythm of work. The cause of problems was attributed to extrinsic factors, resulting in the feeling of a lack of control over work. Because jobs in these organizations were interrelated, and employees were thus dependent on each other, fluent co-operation required everyone to know what they were supposed to be doing and to act accordingly. The rhythm of work was disrupted when co-workers could not be trusted to do their share. When employees felt they had to monitor their colleagues in order for them to perform their assigned tasks, they were less able to fully focus on their own work performance. Some employees felt like they had to do more than others as a consequence, and this feeling led to a sense of unequal distribution of work. These situations were perceived as occurring both involuntarily, for example,

due to a human error or forgetting, and deliberately. In some teams, the problem was characterized as social loafing, where some members avoided certain tasks that were assigned to the team, and left others to pick up their slack. Team members' indifference toward work tasks had spill-over effects on the morale of the team, especially when other members were deeply committed to the work and perceived it as meaningful. Problems in co-operation also arose when members of an organization were unaware of the work of others and the way in which the system worked as a whole. The lack of this kind of systemic understanding fostered perceptions of inequality in the distribution of work, regardless of the actual situation. In addition, when employees were unaware of the work processes of others, they were more often perceived as acting in ways that distorted the rhythm of others' work. In addition to the problems in co-operation with colleagues, poor co-operation with clients also disrupted the rhythm of work. For example, negative encounters with customers, or clients that did not listen or act as agreed were perceived as causes of job boredom. In such cases, co-operation did not enable employees to perform their work in the way they considered best.

Interruptions. Interruptions that derailed the whole working day caused job boredom. The rhythm of work was disrupted by ad hoc tasks or other matters that took time away from planned work. When employees were unable to concentrate on their work in the way they had intended, their sense of control over work waned. Employees characterized interruptions as hindrances to performing their work in the way they had planned. When the rhythm of work was disrupted, employees were not able to fully employ their capabilities in work activities.

Summary

All in all, our findings suggest that in addition to the traditional view of job boredom, a broader context of the experience exists. We found that job boredom comprises dysfunctional activation and insufficient employment of capabilities, which were followed by distorted temporal experience (Figure 2).

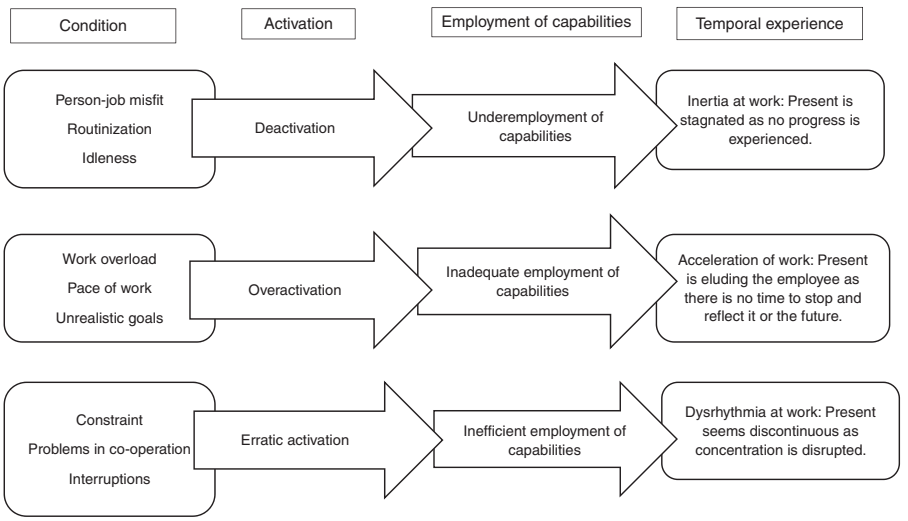

Figure 2.
Experience of job boredom

Discussion

This study sought to better understand a neglected area of employee well-being, namely, job boredom. By examining the phenomenon and its emergence in white-collar jobs, we aimed to shed light on the nuanced aspects of job boredom in current work environments. Three types of job boredom were distinguished, each with a set of conditions that made it difficult for employees to fully employ their capabilities in their work tasks: Type 1 job boredom, inertia at work, referred to a stagnated state of deactivation. Inertia at work involved conditions that did not provide incentives to fully apply individual capabilities in order to experience professional growth and learning. Type 2 job boredom, acceleration at work, was identified as a state of overactivation in which employees lacked the opportunities to focus, reflect on the present and plan for the future. Thus, they lacked the experience of fully employing themselves to their work. Lastly, Type 3 job boredom, dysrhythmia at work involved discontinuity in work performance. Not being able to work as planned, but having to react to arising situations, diminished employees' sense of control over work activities and led to inefficient use of individual capabilities.

These findings suggest that job boredom may be a more complex experience than the traditional stereotype and earlier sparse research has led us to assume, and that it may also have many different preconditions. Job boredom is defined as an activity-related emotion that is experienced during learning (Pekrun, 2006). However, we propose that it emerges not only from the lack of, but also from hindrances to the process of learning. Such an approach to job boredom provides a lens for re-conceptualizing and re-contextualizing the phenomenon in such a way that can help overcome the limitations of the stereotypical assessment of job boredom.

Experiencing job boredom

Deriving a typology of boredom as a distinct attunement to time is not a novel idea (Heidegger, 1983). However, research on job boredom has so far defined the temporal experience as time standing still (e.g. Loukidou *et al.*, 2009). We suggest that job boredom is more than an experience of stagnation resulting from a situation in which there is nothing interesting to do. Defining boredom in terms of wanting, but not being able to engage in satisfying activity (Eastwood *et al.*, 2012) also applies to work contexts. As such, hindrance to activation determines the characteristics of job boredom and its temporal nature.

We discovered a mechanism of job boredom that comprises dysfunctional activation to employ individual capabilities. In addition to the state of deactivation, other situations were found to have an impact on job boredom. Overactive, and reactive states hampered the employment of individual capabilities accordingly. Thus, our study lends empirical support to the idea of boredom as a state that occurs when there is not enough external – or internal – stimuli to maintain an individual's attention (Eastwood *et al.*, 2012). In other words, when employees are not able to reflect on their thoughts and feelings, or to focus, they may succumb to job boredom just as easily as when lacking external stimuli.

Without the ability to engage in work activities in a satisfying way, employees are not fully present in their task performances. Being present implies a focus on the here and now, whereas boredom entails distortion of temporal experience. Psychologically present employees contribute to their work, are open in their interaction with others, and strive toward growth and learning (Kahn, 1992). However, when psychological presence is not enabled, employees withdraw from their work roles.

Job boredom and burnout can both be described as unpleasant states of low activation at work (Russell, 1980; Schaufeli and Salanova, 2013). In addition, a sense of inefficacy and inadequacy, and a misalignment between individuals and their working environments were present in our inquiry. These can also be found in earlier burnout literature in particular (Maslach *et al.*, 2001). However, job boredom is more or less a situational, and even momentary experience, which does not necessarily wear an employee out completely, whereas burnout is a prolonged response to chronic emotional, interpersonal and quantitative stressors at work (Maslach *et al.*, 2001). It is noteworthy that despite certain similar preconditions (interruptions, work pace), none of the interviewees mentioned burnout in this context.

Furthermore, despite the characteristic of disengagement from work, we perceive job boredom to be more than the opposite of work engagement. We were able to derive three distinct types of job boredom experiences that cannot be explained by the mere absence of work engagement. For example, we found that although employees may identify strongly with their work as they do when engaged (Bakker *et al.*, 2008), they may still get bored of their jobs at times, if they are not able to perform their tasks as they desire. Moreover, some of the preconditions of job boredom could be labeled as hindrance demands (e.g. constraint, interruptions), and others as challenge demands (e.g. workload, pace of work; LePine *et al.*, 2005), whereas in the case of work engagement, hindrance demands are found to be negatively, and challenge demands positively, related (Van den Broeck *et al.*, 2010). Thus, our study is congruent with other empirical findings that have showed job boredom and work engagement to be negatively related, but nevertheless distinct constructs (Reijseger *et al.*, 2013).

Conditions of job boredom

According to our study, when experiencing job boredom, the present could be characterized as stagnated, eluding or discontinuous, depending on the conditions. The three types of job boredom discovered in this study each involved a distinct set of conditions, out of which the experience emerged. Stagnated experience emerged from conditions of job-person mismatch, routinization or idleness, which fostered a deactivated state in which individual capacities were underemployed. Heavy workload, hectic pace of work or unrealistic goals, in turn, were associated with a state of overactivation, in which opportunity to focus and reflect seemed to slip away in the present moment. Lastly, the conditions of a disrupted rhythm of work involved constraint, problems in co-operation and interruptions that hampered full involvement in work activities by a diminishing sense of control over them. Although the conditions varied, they shared the characteristic of disabling individuals from being fully present and using their capabilities as desired in their work roles. Thus, the range of factors extended further beyond the lack of challenges that is commonly perceived as the culprit of job boredom. It follows that job boredom may originate from different contexts of work, and that similarly, being in the present may be disrupted in more ways than one.

The ability to be fully present in a work role is central for experiencing work as meaningful (Kahn, 1990). Experiences, such as engagement and boredom at work, build upon activity that involves the employment of individual capabilities (Ryan and Deci, 2000). However, in job boredom, meaningful activation is not supported or enabled. In our study, inertia was a state in which work did not provide incentives for the full use of individual capacity. Work might not have been in alignment with the

motivations, desires, expectations or capabilities that individuals possessed, and for this reason, did not drive them toward meaningful activation (Kira and Balkin, 2014). Another scenario of inertia was work that lacked the variety or challenge that spurs progress toward self-development, learning and an experience of vitality (see also Spreitzer *et al.*, 2005).

Furthermore, our findings on the various conditions of job boredom indicate that the problem may not be solved by merely increasing challenges to match individual skills (Csikszentmihalyi, 1975), thereby lending cautious support to the critique of measuring subjective experience by the challenge and skills ratio alone (Løvoll and Vittersø, 2014). In our study, stimuli that were excessive or unplanned and uncontrolled were also associated with experiencing job boredom in our study.

On the basis of our results, we perceive job boredom as a state in which employees are physically present, but psychologically somewhere else. Defining job boredom as the lack of psychological presence provides a wider lens through which job boredom in white-collar work can be observed, and expands on its common characterization as a situation in which there is not enough interesting things to do. The prominence of specific conditions may depend on the job or position, but in general job boredom may manifest itself in virtually all white-collar work. On the one hand, higher status may bring more autonomy and challenge, which provide incentives for investing oneself in one's work. On the other hand, more responsibility may increase pressure to attend to distractions, which hinders such presence (Kahn, 1992). In addition, although white-collar jobs are often characterized by autonomy, this is not always evident. Systemic norms of efficiency, for example, may promote bureaucracy and discourage employees from fully attending to customer needs. Our study highlighted a number of employee accounts of boredom caused by bureaucracy or regulations that prevented them from fully investing their personalities in meeting clients and, thus, from doing the jobs they felt they were expected to – and wanted to do.

Practical implications

Occasional experience job boredom is common and harmless, but as a frequent occurrence it may be detrimental to employee well-being and productivity. This study provides tools for employees and managers to identify antecedents of job boredom that further direct choosing an effective response.

Job boredom may emerge, if the job does not provide incentives to fully use individual capabilities or if employment of those capabilities is hindered because of reasons related to the organizing of work or its environment. Employees may be able to craft their jobs or some elements of their working environment to fit them better (Wrzesniewski and Dutton, 2001). Recent research indicates that individuals may employ job crafting to prevent job boredom (van Hooff and van Hooft, 2014). For example, by seeking opportunities to learn new skills or to employ individual strengths at work, or by changing some elements of work to provide more variety, employees may be able to better use their individual capabilities.

In addition to employee-initiated proactive behaviors organizational measures are often needed, for instance when poor job design is fostering job boredom. Addressing these issues may require managerial attunement to the needs of individuals and facilitation of opportunities for these needs to be met. In addition, manager's role is essential in enforcing a climate where individuals are encouraged to craft more meaningful and less boring jobs for themselves.

Limitations and suggestions for further research

The present study has certain limitations. The interview data consisted of professionals from four organizations representing different occupations. Because of the size of the sample and the method used, the findings do not allow generalization to the whole population of white-collar workers, nor to other workers. However, we still regard the inductive method used as justified in the pursuit to understand the poorly known subjective feeling of job boredom.

In addition, the sample was not chosen to represent particularly bored employees. Thereby, we do not claim to have discovered all possible types of job boredom. However, it is noteworthy that we were able to derive not only one but three types of job boredom from the data, each with different preconditions and characteristics. We encourage further research on job boredom to focus on the phenomenon in diverse professions, using a variety of methods in order to gain more generalizable knowledge on job boredom and its manifestations. As current measures of job boredom are built on its narrow definition, we suggest that further research be carried out in more comprehensive operationalization of the construct. Our results suggest that as the types of job boredom are contextually different, they may also vary in their respective outcomes. Future research could address how the types of job boredom develop over time, and the possible moderating factors that may influence the outcomes. For example, specific actions and behaviors undertaken by employees to prevent and overcome job boredom could be investigated.

Job boredom is perceived to have mostly harmful consequences, but some studies question the negative positioning of the phenomenon. For example, the wandering mind and daydreaming associated with boredom (Eastwood *et al.*, 2012) can boost creativity and guide the socioemotional development of individuals (Immordino-Yang *et al.*, 2012). By demonstrating how different types of job boredom experiences involve distinct types of activation, our results could help to explain the diverse findings regarding the outcomes of boredom.

Lastly, it would be interesting to study whether, and under what conditions, avoiding job boredom may motivate proactive work behaviors, such as job crafting and learning. For example, Carroll *et al.*, (2010) have found that managers prevent boredom at work by seeking challenges, new skills and novel ideas. Expanding this inquiry to employees of different professions and positions could inform organizations of the conditions and actions that enable individuals to avoid becoming bored at work.

Conclusion

This study suggests that job boredom is a complex phenomenon and may concern white-collar employees. Three types of job boredom, namely, inertia, acceleration and dysrhythmia at work emerged. Each type consisted of the dysfunctional activation of individual capabilities, which disrupted employees' experiences of the present moment and emerged from a distinct set of conditions. The findings considerably expand the narrow definition of job boredom as a state of deactivation caused by lack of stimuli, and extend the range of employees that might suffer from boredom.

There is a plethora of research on job stress and burnout, with suggestions on how to prevent job strain. According to our study, there are many different preconditions and types of job boredom, and thereby various practical means to tackle boredom may exist. For organizations, it may be of utmost importance to provide opportunities for employees to recognize and prevent job boredom, as it may have several negative consequences for employee well-being, motivation and productivity.

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Can job crafting reduce job boredom and increase work engagement? A three-year cross-lagged panel study☆

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ABSTRACT

Building upon the Conservation of Resources (COR) theory, this longitudinal study examined whether job crafting behaviors (i.e. increasing structural and social job resources and increasing challenges) predict less job boredom and more work engagement. We also tested the reverse causation effects of job boredom and work engagement on job crafting and the dynamics between the three job crafting behaviors over time. We employed a two-wave, three-year panel design and included 1630 highly educated Finnish employees from a broad spectrum of occupations in various organizations. Our results indicated that seeking challenges in particular negatively predicted job boredom and positively predicted work engagement. Seeking challenges fueled other job crafting behaviors, which, in their turn, predicted seeking more challenges over time, thus supporting the accumulation of resources. Job boredom negatively predicted increasing structural resources, whereas work engagement positively predicted increasing both structural and social resources. These findings suggest that seeking challenges at work enhances employee work engagement, prevents job boredom, and generates other job crafting behaviors. Conversely, job boredom seems to impede job crafting.

A high level of employee well-being in the workplace is in the best interest of both workers and organizations (Danna & Griffin, 1999). Work engagement and job boredom capture aspects of both employee well-being and motivation. The purpose of this study is to examine how employees can prevent job boredom, increase work engagement, and thus sustain well-being.

Work engagement is defined as an active state of well-being that is characterized by vigor, dedication and absorption at work (Schaufeli, Bakker, & Salanova, 2006). Engaged employees are described as immersing themselves in their work roles, and thereby as delivering high quality work performances (Kahn, 1992, 1990). Engaged employees tend to be proactive and open to new information, and motivated to perform well in their work (Bakker, 2011).

Whereas work engagement refers to a positive and fulfilling psychological state, job boredom is regarded as the opposite (Salanova, Del Líbano, Llorens, & Schaufeli, 2014). More specifically, job boredom refers to an unpleasant state of passiveness that is characterized by attentional difficulties and a distorted sense of time (Reijseger et al., 2013; Fisher, 1993).

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Bored employees may disengage from a work role that lacks satisfying activities (Eastwood, Frischen, Fenske, & Smilek, 2012), or does not enable full use of individual capabilities (Harju & Hakanen, 2016). Previous studies have associated boredom at work with harmful outcomes for individuals and organizations, such as substance abuse, low job satisfaction and deteriorated work performance (see Loukidou, Loan-Clarke, and Daniels, 2009 for a review) as well as stress symptoms, turnover intentions, poor self-perceived health and reduced workability (Harju, Hakanen, & Schaufeli, 2014). In sum, organizations and employees alike may benefit from fostering work engagement and preventing job boredom.

Employees may also promote their own well-being at work by pro-actively shaping their jobs to better fit their individual needs, skills and motivations. This type of proactive behavior has been dubbed job crafting, which refers to activities that employees initiate to shape their tasks, their work environment or their mindset to create jobs that are more meaningful for themselves (Wrzesniewski & Dutton, 2001).

According to Tims, Bakker, and Derks (2012), job crafting is essentially about employees increasing resources and seeking challenges in their jobs in order to motivate themselves at work. As such, job crafting builds on the fundamental proposition of the Conservation of Resources (COR) theory, which posits that individuals strive to retain, protect and accumulate resources to cope with threats to their well-being (Hobfoll, 1989). As stated by COR theory, resources are those objects, personal characteristics, conditions or energies that are valuable either in their own right or because they may help in achieving or protecting other valued resources (see also Hobfoll, 2001). Individuals may invest their current resources (e.g. time and/or energy) into building new resources (e.g. skills, relationships or better work environment) and consequently into sustaining and protecting their well-being. Lack of resource gain, or resource loss, may in turn cause stress and threaten individual well-being.

Furthermore, COR theory suggests that "resources aggregate in resource caravans in both an immediate and a life-span sense" (Hobfoll, 2001, p. 349). These positive *gain cycles* are mirrored by negative loss cycles, in which initial resource loss predicts future loss. When individuals' resources are depleted, they are more likely to withdraw their efforts than to invest in acquiring more resources (Hobfoll, 1989). It thus follows that, in addition to short-term impact, both gain and loss cycles may yield long-term effects on individual well-being.

In the present study, we focus on job crafting as a way for employees to gain resources that protect them from job boredom, increase their work engagement, and help them to accumulate further job resources to maintain their well-being over time. Moreover, we seek to explore the reversed relations between well-being (work engagement and job boredom) and job crafting to examine whether engaged employees craft their jobs in the future, and whether bored employees withdraw themselves from such behaviors, or indeed craft their jobs and become more engaged.

Some qualitative and cross-sectional studies have suggested that employees may seek challenges and increase resources in their work to constructively prevent and cope with job boredom (van Hooff & van Hooft, 2014; Carroll, Parker, & Inkson, 2010; Game, 2007). However, to date, no longitudinal studies on the relations between job boredom and job crafting have, to our knowledge, been carried out. Thus, we lack knowledge on whether job crafting can effectively reduce future job boredom and how, in turn, job boredom may affect job crafting.

The present study had two aims: (1) to increase our knowledge regarding the long-term effects of job crafting on preventing job boredom and increasing work engagement and vice versa; and (2) to examine the dynamics (i.e. temporal order) between different types of job crafting behaviors. In so doing, our study sheds light on the mechanisms of job crafting as an ongoing process.

1. Theoretical background

1.1. Job crafting and employee well-being

Employee well-being can be perceived as a function of various job resources and job demands, in which job resources spark a positive, motivational process while buffering the negative effects of job demands (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Work engagement involves high levels of job resources that are balanced with reasonably high job demands (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Hence, the more demanding a job, the more resources are needed to sustain work engagement. In contrast, job boredom has been associated with a lack of both job resources and job demands (Reijseger et al., 2013).

Two types of job demands have been distinguished: Whereas hindrance demands (e.g. role conflict, role ambiguity, red tape and hassles) may hamper well-being, challenge demands (e.g. high workload, time pressure, job responsibility) may foster work engagement (Crawford, LePine, & Rich, 2010) and protect employees from job boredom (van Tilburg & Igou, 2012). According to COR theory, employees may proactively cope with potential threats to their well-being, before problems actually arise (Hobfoll, 2001). We argue that job crafting can thus be considered proactive coping behavior, as employees anticipate potential threats to their well-being and actively prevent future experiences of job boredom from emerging.

So far, research has associated job crafting with, for example, higher work engagement (Vogt, Hakanen, Brauchli, Jenny, & Bauer, 2016; Tims et al., 2012; Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012; Bakker, Albrecht, & Leiter, 2011), as well as colleague-rated in-role performance (Bakker, Tims, & Derks, 2012). In addition to increasing employees' own work engagement, a recent study showed that job crafting may also increase colleagues' job crafting and consequently, colleagues' work engagement (Bakker, Rodríguez-Muñoz, & Vergel, 2016). However, research on the well-being effects of job crafting other than work engagement has been scarce. In addition, studies have typically examined the effects of job crafting as a unitary concept, although there are many ways to make tasks, job context or social encounters at work more meaningful (Wrzesniewski & Dutton, 2001). Tims et al. (2012) distinguish between three types of job crafting behaviors; (1) increasing structural resources

(e.g. task variety, opportunities to develop new skills or work processes, autonomy); (2) increasing social resources (e.g. social support, supervisory coaching, feedback); and (3) seeking challenges (e.g. getting involved in new projects, performing additional tasks, volunteering to test new tools or applications). Moreover, longitudinal studies on job crafting using full panel design are still rare (Vogt et al., 2016).

In this study, we examine the effects of increasing structural and social job resources and seeking challenges on future job boredom and its opposite, work engagement. We argue that these job crafting strategies may stimulate and energize employees on the brink of boredom and drive them towards engagement in their work.

1.2. Job crafting behaviors as a self-sustaining process

In support of the aforementioned assumptions of COR theory, empirical studies have found that job resources initiate positive gain cycles by fostering work engagement, which further increases the resources related to conditions such as work-family enrichment (Hakanen, Peeters, & Perhoniemi, 2011), and personal initiative, which is a more general indicator of proactive behaviors (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008).

Studies have suggested that certain job characteristics enable and trigger job crafting (Bakker et al., 2012; Berg, Wrzesniewski, & Dutton, 2010). For example, on days when employees perceive more autonomy to make changes to their work (a job resource) and work pressure (a challenging demand), they strive to increase resources in their jobs (Petrou et al., 2012). Hence, increased job resources and challenges may further fuel job crafting activities.

However, it may be that different job crafting behaviors do not take place simultaneously, and the unfolding crafting process may have specific dynamics. For example, after taking on new challenges in their jobs, employees might need to increase their job resources to deal with the increased (challenging) job demands (Bakker et al., 2007). Conversely, when employees actively increase their resources, this may further generate behavior towards new undertakings (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005). For example, by increasing the quality of work relationships, employees can enhance their future proactive behaviors (Carmeli, Brueller, & Dutton, 2009). Following this rationale, we argue that increasing job resources and seeking challenges may spark positive gain cycles that lead to other *future* job crafting behaviors. Thus, job crafting may involve a balancing mechanism that enables employees to continue to accumulate resources and challenges to promote and protect their well-being (Hobfoll, 1989, 2001).

1.3. The present study

The present study employed a full panel design to investigate the effects of increasing structural and social job resources and of seeking challenges on job boredom and work engagement over a three-year time period. Building upon COR theory, we argue that employees may increase job resources and seek more challenges to proactively cope with job boredom and thus enhance their work engagement (Hobfoll, 2001).

Moreover, we examined the relations between different job crafting behaviors from the viewpoint of gain cycles. When employees perceive high levels of job resources and challenges, they might engage in more crafting behaviors (Petrou et al., 2012; Berg et al., 2010). Increasing (social and structural) job resources and seeking challenges would thereby predict future crafting behaviors. However, we do not yet know the temporal order of different crafting activities, and are therefore unable to formulate hypotheses regarding the direction of the relations.

Although often associated with low-skilled work, job boredom may also afflict educated employees, who can become trapped in dull and routine jobs for which they are over-qualified (Rothlin & Werder, 2008; see also Loukidou et al., 2009). As such, educated employees might be at a higher risk of becoming bored in their jobs, if they lack challenging, adequately stimulating tasks (Reijseger et al., 2013; van Tilburg & Igou, 2012; Csikszentmihalyi, 1975). Although, some research exists on workplace boredom among white-collar workers (van der Heijden, Schepers, & Nijssen, 2012), studies on job boredom among employees with higher education are lacking. Thus, we also lack knowledge on which crafting behaviors sustain well-being and prevent job boredom among the more highly educated workforce.

The present study focused on educated employees, who are at a greater risk of being overqualified, and who at the same time may have the opportunities (e.g. skills and autonomy) needed to craft their own jobs (Petrou et al., 2012; Berg et al., 2010). We argue that educated employees in particular may actively prevent themselves from becoming bored by crafting their jobs more resourceful, challenging and meaningful (Demerouti, 2014; Tims et al., 2012).

More specifically, we hypothesized that increasing job resources and seeking challenges reduces future job boredom *(Hypothesis 1)* and enhances future work engagement *(Hypothesis 2)*. We also utilized a fully cross-lagged study design to examine the possible reversed effects of job boredom and work engagement on job crafting behaviors. Congruent to the theoretical assumption of gain cycles, we hypothesized that as an active state of well-being, work engagement positively predicts all three types of job crafting *(Hypothesis 3)*. In addition, we explored the causal relations between three types of job crafting, i.e., increasing social and structural job resources and seeking challenges.

2. Method

2.1. Sample and Procedure

This study employed longitudinal data collected on two occasions (2011 and 2014). The three-year time interval was based on practical arrangements and thus could not be influenced by the researchers. In 2011 a survey questionnaire was mailed to 20,471 employees in 87 Finnish organizations of different industries that had volunteered to participate in the study. Of these 87 organizations, 28 ($N = 6989$) volunteered to take part again in 2014. The large drop-out rate of organizations was largely due to organizational changes that they had undergone, or practical reasons, such as other surveys that were simultaneously taking place. The employees who responded to the questionnaire in 2011, and were still employed by the respective organization, were invited to participate again in 2014. The response rates were 56% in 2011 ($N = 11,471$), and 55% in 2014 ($N = 3831$).

Participation in the survey was voluntary, and respondents were not given any incentives to participate. The anonymity of the data was assured and emphasized. No information that could be used to identify the respondent (e.g. name, profession, organizational position) was included in the questionnaire. Responses from two time points were paired using individually assigned codes. Each organization had assigned a contact person, who was instructed to distribute information on the study, and to remind and encourage the personnel to fill out the questionnaire. They did not interfere with the process in any way. Respondents mailed the questionnaires directly to the researchers to ensure confidentiality.

This study focused on the respondents who participated in the survey at both times ($N = 2334$) and were employed by the same organization throughout the three-year follow-up period. We used a sample of highly educated (i.e. college and university educated) employees ($N = 1635$) in various occupations from all 28 public and private sector organizations. The mean age of the sample was 46 (SD = 9.11 years), 85% were female, and 91% were employed on a permanent job contract. Over half of the respondents (58%) worked as professionals (e.g. nurses, and pharmacists) or specialized professionals (e.g. doctors, teachers, and researchers), 22% worked as clerks and officials, 11% worked in sales and services, and 9% occupied a managerial position. The respondents worked 37 h a week (SD = 6.47 h) on average, and mean tenure was 11 years (SD = 9.66 years). Female employees were overrepresented (85% vs. 58%) in our sample compared to the highly educated employees in the total Finnish working population (Official Statistics of Finland, 2015). This may be partially explained by the large number of participant organizations that provided health and social services ($N = 18$), in which 88% of employees are female in Finland. In addition, employees aged 45 years or over were overrepresented compared to the total working population (59% vs. 46%; Official Statistics of Finland, 2015). Thus, our sample was not representative of the highly educated working population in Finland, as it included relatively more women and older workers.

A comparison between the highly educated employees who participated at both times and those who participated at only T1 ($N = 5773$) revealed only minor differences between the two groups concerning the study variables, job contracts, and demographics (i.e. gender, age). Respondents who participated at both times experienced job boredom slightly less often than those who participated at only T1 (job boredom: 1.0 vs. 1.1, $p < 0.001$). In addition, there were more male respondents among those who participated at T1 than among those who participated at both times (22% vs. 15%), and those who participated at T1 were more likely to have fixed-term contracts (15% vs. 9%). As the participants did not differ on the basis of any other study variables, it seems unlikely that these differences significantly biased our results.

2.2. Measures

Job boredom was measured using the Dutch Boredom Scale (DUBS; Reijseger et al., 2013), which contains six items capturing the affective, cognitive, and behavioral manifestations of job boredom (e.g. "I feel bored in my work"). Participants responded on a seven-point Likert scale ranging from 0 (never) to 6 (very often). The instrument development study found the scale's internal consistency reliability (Cronbach's α) to be 0.87 (Reijseger et al., 2013). In a Finnish study of 11,468 employees, the internal consistency reliability of DUBS was 0.85. In the current study the internal consistency reliability of the scale was 0.85 at T1, and 0.88 at T2.

Work engagement was assessed using the nine-item version of the Utrecht Work Engagement Scale (UWES-9; Schaufeli et al., 2006) that measures the three dimensions of work engagement: Vigor (e.g. "At work, I feel like I am bursting with energy"), dedication (e.g., "I am enthusiastic about my job"), and absorption (e.g. "I am immersed in my work"). The items were scored on a seven-point Likert scale from 0 (never) to 6 (every day). Upon development of the instrument, Schaufeli et al. (2006) found that the scale's internal consistency reliabilities (Cronbach's α) exceeded 0.85 in samples from ten different countries. The scale has also been previously validated in Finland in a sample representing various industries ($N = 16,335$), and its internal consistency reliability was 0.91 (Hakanen, 2009). In this study, UWES-9 had an internal consistency reliability of 0.95.

Job crafting was examined using a 15-item measure (Tims et al., 2012) that captures three dimensions of job crafting: increasing structural job resources (e.g. "I try to learn new things at work"), increasing social job resources (e.g. "I ask others for feedback on my work performance"), and seeking challenging job demands (e.g. "If there are new developments, I am one of the first to learn about them and try them out"). The items were scored on a five-point scale (1 = never to 5 = very often). In the scale development study, internal consistency reliabilities (Cronbach's α) ranged from 0.76 to 0.82 for increasing structural job resources, from 0.73 to 0.82 for increasing social job resources, and from 0.75 to 0.77 for seeking challenging job demands. In the current study, internal consistencies were 0.74 (T1) and 0.78 (T2) for increasing structural

job resources, 0.78 (both T1 and T2) for increasing social resources, and 0.79 (T1) and 0.80 (T2) for seeking challenging job demands.

We included age and gender (0 = female and 1 = male) as covariates, on the basis of relations found in previous studies on job boredom (i.e. age has been negatively and male gender positively related to job boredom; Harju et al., 2014). Previous studies have also associated these covariates with work engagement in previous studies (Hakanen & Peeters, 2015).

3. Results

3.1. Descriptive statistics

Table 1 shows the means, standard deviations and correlations of all study variables. All the stability coefficients of the variables were between 0.60 and 0.70, and are thus of comparable magnitude to those found in previous studies on work engagement (Seppälä et al., 2015; Schaufeli et al., 2006) and job crafting (e.g. Vogt et al., 2016).

3.2. Statistical analyses

The overall measurement model consisted of ten latent factors that represented five factors measured at two time points: job boredom (represented by its six items), work engagement (represented by its sub-dimensions: vigor, dedication and absorption), and three dimensions of job crafting, namely: increasing structural resources, increasing social resources, and seeking challenges (each represented by their five respective items). We used MPlus software (Muthén & Muthén, 2012) and the robust maximum likelihood (MLR) estimator for all analyses.

The initial measurement model ($\chi^2 = 7092.111$, $df = 1630$, $p < 0.001$; RMSEA = 0.05; SRMR = 0.06; CFI = 0.90; TLI = 0.90) showed an acceptable fit, but the modification indices suggested that the fit could be improved by allowing the error terms for the items "During work time I daydream" and "I tend to do other things during my work" to correlate because of their overlapping item content. The resulting measurement model fit the data slightly better ($\chi^2 = 6771.064$, $df = 1628$, $p < 0.001$; RMSEA = 0.05; SRMR = 0.06; CFI = 0.91; TLI = 0.90).

We further assessed the invariance of factor loadings over time by comparing a model in which the factor loadings of each latent variable were constrained as equal over measurements with a model, in which factor loadings were unconstrained over time. The model comparison ($\Delta\chi^2 = 44.4539155$, $\Delta df = 25$, $p = 0.13$) suggested that the metric invariance test of the data was passed and that the factor loadings remained constant across measurement points. This was further supported by the fit indices, which were practically identical across models. Apart from one item ("I decide on my own how I do things") loading on increasing structural resources factors (T1: 0.25 and T2: 0.36), and one item ("I ask colleagues for advice") loading on increasing social resources factors (T1 and T2: 0.29), all other item loadings ranged from 0.46 to 0.95.

As the study variables were practically one dimensional (i.e. the correlations between the sub-dimensions of work engagement ranged from 0.83 to 0.89, and can thus be considered one single dimension; Schaufeli et al., 2006), we proceeded to test our hypotheses by specifying a model with observed variables, to allow for a more parsimonious model to be fitted to the data.

3.3. Hypothesis testing

We used full panel analyses to test all our hypotheses simultaneously. The model ($\chi^2 = 70.866$, $df = 8$, $p < 0.001$; RMSEA = 0.07; SRMR = 0.03; CFI = 0.99; TLI = 0.93) included all lagged effects between the three job crafting behaviors, job boredom

Table 1
Means, standard deviations and correlations of study variables.

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Job boredom T1	0.99	0.78	–	−0.53***	−0.42***	−0.17***	−0.31***	0.65***	−0.37***	−0.34***	−0.12***	−0.24***
2. Work engagement T1	4.84	1.07		–	0.51***	0.36***	0.42***	−0.41***	0.67***	0.43***	0.29***	0.34***
3. Increasing structural resources T1	3.95	0.51			–	0.41***	0.63***	−0.30***	0.37***	0.61***	0.30***	0.49***
4. Increasing social resources T1	2.65	0.63				–	0.45***	−0.15***	0.29***	0.32***	0.62***	0.37***
5. Increasing challenges T1	3.37	0.67					–	−0.27***	0.34***	0.51***	0.36***	0.68***
6. Job boredom T2	1.05	0.83						–	−0.50***	−0.41***	−0.19***	−0.29***
7. Work engagement T2	4.75	1.14							–	0.56***	0.35***	0.44***
8. Increasing structural resources T2	3.91	0.52								–	0.40***	0.66***
9. Increasing social resources T2	2.62	0.62									–	0.46***
10. .Increasing challenges T2	3.30	0.67										–

$N = 1630$.
*** $p < 0.001$.

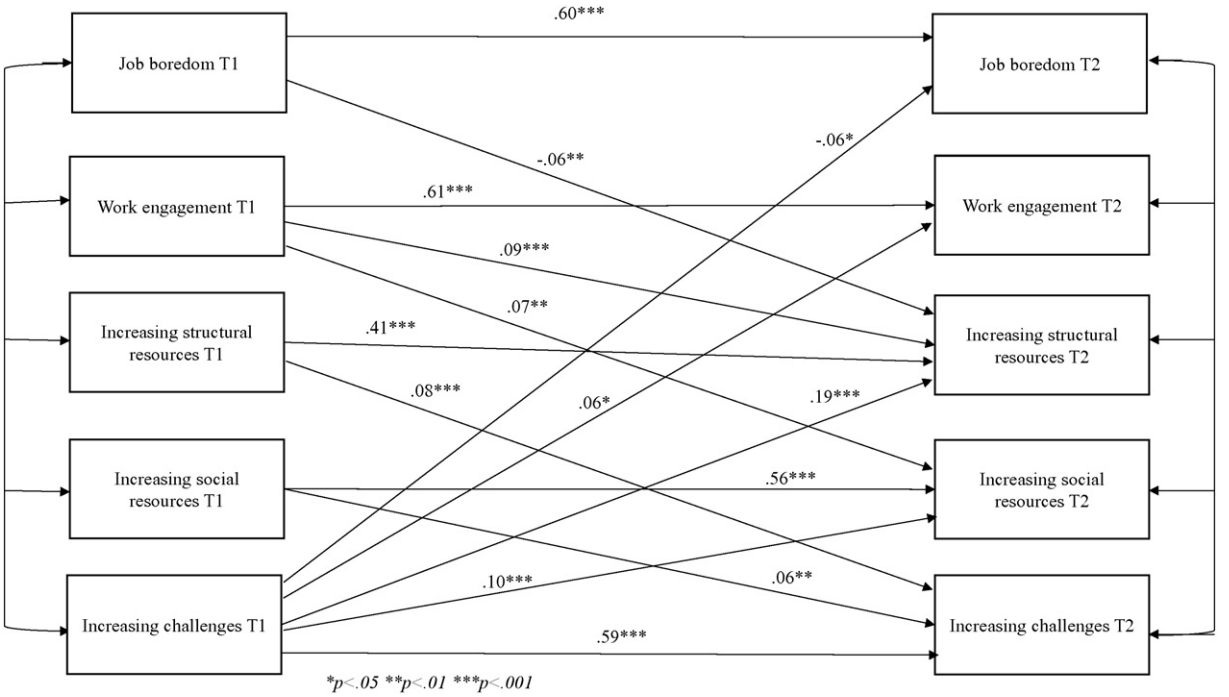

Fig. 1. Cross-lagged effects of job crafting and employee well-being.

and work engagement. In addition, we added lagged effects between the three job crafting behaviors. The standardized regression coefficients from the effects are shown in Fig. 1.

3.3.1. Job boredom and work engagement

Seeking challenges negatively predicted job boredom at T2 ($\beta = -0.06$, $p < 0.05$) and positively predicted work engagement at T2 ($\beta = 0.06$, $p < 0.05$). Hence Hypotheses 1 and 2 were confirmed. Increasing structural or social job resources *did not* predict job boredom at T2 or work engagement at T2.

Of the covariates, age negatively predicted job boredom at T2 ($\beta = -0.09$, $p < 0.001$). In addition, male gender positively predicted job boredom at T2 ($\beta = 0.10$, $p < 0.001$) and negatively predicted work engagement T2 ($\beta = -0.05$, $p < 0.01$).

3.3.2. Job crafting

Work engagement positively predicted increasing structural job resources at T2 ($\beta = 0.09$, $p < 0.001$) and increasing social job resources at T2 ($\beta = 0.07$, $p < 0.01$). Hypothesis 3 was thus confirmed. Conversely, job boredom negatively predicted increasing structural job resources at T2 ($\beta = -0.06$, $p < 0.01$), but *did not* predict increasing social job resources. Finally, *neither* work engagement *nor* job boredom predicted seeking challenges at T2. Of the covariates, age negatively predicted seeking challenges at T2 ($\beta = -0.07$, $p < 0.001$).

3.3.3. Long-term relations between job crafting activities

Seeking challenges positively predicted increasing structural job resources at T2 ($\beta = 0.19$, $p < 0.001$), and increasing social job resources at T2 ($\beta = 0.10$, $p < 0.001$). Increasing structural job resources positively predicted seeking challenges at T2 ($\beta = 0.08$, $p < 0.001$), but *did not* predict increasing social job resources. In addition, increasing social job resources positively predicted seeking challenges at T2 ($\beta = 0.06$, $p < 0.01$), but *did not* predict increasing structural job resources.

4. Discussion

The current study was the first to longitudinally examine the relations between job crafting behaviors, job boredom, and work engagement. All in all, the results indicate that seeking more challenges in particular may increase work engagement, decrease job boredom and boost other types of crafting behaviors accordingly. As regards reversed effects, work engagement increased the likelihood of future job crafting, whereas job boredom reduced such behaviors. Thus, voluntarily seeking more challenges may be an effective way for highly educated employees to sustain their well-being and proactivity.

4.1. Seeking challenges predicts employee well-being.

Supporting the proposition of COR theory (Hobfoll, 2001, 1989), our results suggest that highly educated employees may voluntarily seek challenges in their work to *proactively cope* with the threat of job boredom. In contrast, increasing structural job resources (e.g. trying to learn new things at work) or social job resources (e.g. asking for help) did *not* predict future work engagement or job boredom, after controlling for their baseline levels. Our findings indicate that although increasing job resources have synchronous relations with work engagement and job boredom, these effects may fade away over time.

It may be that increasing job resources involves a short-term need, such as improving a specific work process, or getting help for a task-related problem (Tims et al., 2012: Petrou et al., 2012), and that as such, the benefits of these resources are likely to be short-lived. Previous research suggests that increases in positive affect and moods, such as work engagement, tend to be temporary, and that employees eventually return to their set-point levels (Seppälä et al., 2015; Brauchli, Schaufeli, Jenny, Füllemann, & Bauer, 2013; Lyubomirsky, Sheldon, & Schkade, 2005). Highly educated employees may have the capabilities and motivation to increase their job resources, but without long-term opportunities (e.g. challenges) to employ these resources, the potential benefits for individual well-being may remain un-harvested.

It is suggested that the perception of challenges may drive high-arousal mood states such as interest, engagement and enthusiasm (Løvoll & Vittersø, 2014), which are incompatible with negative, passive mood states, such as job boredom. Challenging tasks foster experiences of competence and mastery, which sustain psychological well-being (Sulea, Van Beek, Sarbescu, Virgae, & Schaufeli, 2015; Pekrun, Elliot, & Maier, 2009). Thus, of the different types of job crafting behaviors, seeking challenges may be the one to yield sustainable benefits for highly educated employees' future motivation and well-being.

4.2. Job boredom hampers job crafting

We found that work engagement predicted increasing job resources, whereas bored employees were more likely to refrain from such crafting activities. Paradoxically, bored employees can become trapped, as they may lack the resources needed (i.e. energy) to initiate job crafting activities, despite the fact that this could potentially improve their situation. In such unpleasant situations, employees may protect their well-being by even further disengaging from their work activities (Kahn, 1990; Hobfoll, 1989). However, disengagement is a dysfunctional strategy, as it does not address the cause of boredom, and thus the unpleasant situation remains (Farmer & Sundberg, 1986). Thereby, job boredom may lead to further depletion of job resources and as such, foster negative loss spirals (Hobfoll, 2001).

Although dissatisfied employees have been found to craft their jobs in ways that can benefit both individuals and organizations (Mattarelli & Tagliaventi, 2012), recent research emphasizes that positive activities are unlikely to emerge from passive, low-arousal states (To, Fisher, & Ashkanasy, 2015). Thus, although engaged employees are willing and able to craft more meaningful jobs, bored employees may need additional encouragement to initiate such behaviors.

4.3. Balancing mechanism of job crafting

According to COR theory, positive gain cycles are set in motion by obtaining resources that help secure the things that are perceived as important, such as well-being (Hobfoll, 2001, 1989). Using this framework, challenges can also be perceived as resources that provide employees with the stimulation they need for work. Congruently, our results imply that seeking more challenges can create an incentive to acquire more job resources in the future and thus function as a catalyst for gain cycles. The dynamics of crafting behaviors imply that employees may strive to optimize their well-being by balancing the challenges in their work and the resources needed to tackle them (Bakker et al., 2007).

It is argued that job crafting is available to any employee (Wrzesniewski & Dutton, 2001), although opportunities for different proactive behaviors may vary across individual dispositions and resources (Berg et al., 2010; Bakker et al., 2012). Our findings also suggest that younger employees may be more eager to seek more challenges in their jobs than older employees. Previous research indicates that older employees might perceive new challenges as stressful rather than energizing, or they may have reached a point in their careers at which they focus more on other goals, such as work-related relationships (Fried, Grant, Levi, Hadani, & Slowik, 2007; Baltes, 1977).

4.4. Limitations and suggestions for further research

This study has its limitations and these should be acknowledged. First, we only used self-report measures, which means that common method bias is possible (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), although the longitudinal study design helped counteract this (Doty & Glick, 1998). We feel that using self-report questionnaires to observe phenomena such as job boredom and job crafting is justified, as such psychological states are subjective in nature and may thus not be accessible for other raters. Another possible bias concerns the responses in general. As participation in the study was voluntary for organizations and their personnel, the sample may be biased towards organizations that are more inclined to develop employee well-being, as well as employees who are more engaged in their work.

Second, a more theoretical issue in reporting job crafting is whether employees actually behave as they perceive themselves as behaving. Job crafting assumes that work performance is a product of volitional behaviors, but the literature on unconscious behavior suggests that many work behaviors are automated and occur without conscious processing (George, 2009). It follows that

employees may consciously *construct* the different behavioral patterns that they display. An interesting avenue of research would be to explore ways of measuring job crafting that would enable employees to reflect upon and report their actual, concrete behaviors.

Third, the effects of job crafting activities on work engagement and job boredom were quite small. This finding echoes a study by Løvoll and Vittersø (2014), who found that challenges and skills, or their interaction rather poorly explain positive and negative feeling states, such as engagement and boredom. It may be that because crafting behaviors involve specific aspects of the job within the boundaries of the current task (Wrzesniewski & Dutton, 2001), the activities undertaken tackle specific task-related needs that most often yield short-term results. In addition, constructs such as job boredom and work engagement seem to be highly stable over time (Seppälä et al., 2015; Schaufeli et al., 2006), which may in part explain the weak effects of job crafting as well as the covariates of the study.

Fourth, although very little research exists on appropriate time lags for assessing the effects of job crafting and employee well-being (Mitchell & James, 2001; Zaheer, Albert, & Zaheer, 1999), a three-year time lag as in the current study might perhaps be rather long to detect any associations between behavior and well-being. For example, in the present study we did not control for factors, such as changes in the organization or in job characteristics that might have taken place during the study period and influenced the outcomes. In future studies it would be valuable to use "shortitudinal designs" to find the optimal time lag for detecting causal effects (Dormann & Griffin, 2015). However, from a theoretical and practical point of view, it was interesting to study whether job crafting would have an impact on employee motivation and well-being beyond daily or weekly effects. The fact that our study found significant effects even after controlling for the baseline, and a three-year time lag, indicates the potential relevance of these relations.

Finally, it should be noted that the results were derived from a sample of highly educated Finnish employees, and should thereby not be generalized across countries and occupational groups. Previous studies have found that low-skilled workers may implement job crafting in different ways to highly-skilled experts (Nielsen & Abildgaard, 2012).

In addition, as female and older employees were over-represented in our sample our results may not be representative of the highly educated Finnish working population, and should be interpreted with caution. Overall, however, our sample represented a wide spectrum of occupations and thereby provided a comprehensive overview of the potential effects of job crafting on the well-being of highly educated employees.

4.5. Practical implications

Organizations benefit from engaged employees who fully employ themselves in their work (Kahn, 1990), whereas bored employees are more likely to disengage from investing their resources into their work. Therefore, employees should be granted the opportunity to increase their challenges at work to sustain their well-being and to avoid becoming bored in their jobs. For example, enabling employees to volunteer for projects that interest and challenge them could actually give their well-being and work performance a new boost. Whether it is adding a challenging aspect to one's job (e.g. new tasks or approach), or adopting a novel work role (e.g. from a cashier to a service provider), the action should emerge from individual motivation to better employ one's capabilities.

Although job crafting is initiated by employees themselves, the role of leadership is incremental in determining the possibilities and resources for such behaviors (Wrzesniewski & Dutton, 2001). Recently, Schaufeli (2015) showed that engaging leaders, who connect, strengthen and inspire their followers, indirectly enhance levels of engagement by increasing followers' job resources. Our results suggest that preventing job boredom might be the best strategy for sustaining job crafting, as bored employees may lack the energy needed to undertake proactive behaviors. In such situations, employees might benefit from supervisor coaching, support, encouragement to craft their jobs, or some other activating intervention to break the vicious cycle of passiveness, and to turn negative loss cycles into positive ones.

Crafting activities can spur further efforts to learn and employ individual capabilities, but unless they are actively sustained, the positive effects of specific behaviors may not last over time. Drawing from the work of Lally and Gardner (2013), we suggest that to yield more lasting effects, job crafting should be cultivated into a workplace habit. If organizational culture enables employees to constructively reflect upon and respond to their affective cues, such as early signals of boredom, they may automatically adapt their work behavior to improve their well-being (George, 2009; Game, 2007; Barbalet, 1999). Thus, fostering a climate that encourages employees to address the causes of boredom instead of suppressing the emotion, can improve their personal growth, professional development and work performance.

5. Conclusion

Job crafting has often been associated with work engagement, but little is known of its long-term effects on employee well-being. Our findings suggest that seeking challenges in particular may be a viable strategy to prevent employees becoming bored at work and to enhance their work engagement. Seeking challenges can also act as a catalyst for other crafting activities, through which employees obtain more resources for their jobs. As a whole, our study supports the idea of job crafting as behavior that can improve and sustain employee well-being.

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