THESIS

THE DEVELOPMENT AND VALIDATION OF A MEASURE OF DISENGAGEMENT

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ABSTRACT

THE DEVELOPMENT AND VALIDATION OF A MEASURE OF DISENGAGEMENT

Even though no measure of disengagement exists, researchers and practitioners have claimed to

identify employees who are disengaged using measures that assess satisfaction, engagement, or

burnout. This study outlines the development and initial validation of a theoretically-based

measure of employee disengagement. Consistent with theory, the measure is composed of

affective, physical, and cognitive factors. Data from 709 participants collected through

Amazon's crowdsourcing tool, Mechanical Turk (MTurk), show that disengagement is distinct

from, but moderately related to engagement, burnout, and withdrawal. Consistent with theory,

low levels of the psychological conditions of psychological meaningfulness, safety, and

availability predicted higher level of disengagement. Additionally, high levels of psychological

meaningfulness and psychological availability predicted high levels of engagement. The new

measure of disengagement developed in this study may help researchers develop a more accurate

understanding of disengaged employees.

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INTRODUCTION AND LITERATURE REVIEW

Over the past decade, employee engagement has become an increasing focus of business consultants, practitioners, and academic scholars alike (e.g., Macey & Schneider, 2008; Shuck, 2011). Engagement at work is considered a positive state of mind, where employees demonstrate vigor, dedication, and absorption in the job (Schaufeli, Salanova, Gonzalez-Romá, & Bakker, 2002). It has also been defined as a motivational state in which individuals can express their preferred self physically, cognitively, and emotionally during role performances at work (Kahn, 1990). Researchers have attempted to mesh the research and practice spheres of engagement by empirically supporting the relationships that practitioners have alleged. For example, engagement has been associated with positive work outcomes such as job satisfaction (Bakker & Demerouti, 2008), job performance (Rich et al., 2010), and organizational commitment (Saks, 2006). Additionally, researchers have sought to advance the field by creating a guiding theory with testable hypotheses for the construct (e.g., Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Kahn, 1990; Macey & Schneider, 2008).

Research on engagement has been consequently fruitful; however, it has thus far neglected Kahn's (1990) conceptualization of *disengagement*, even though much of the drive behind engagement research and practice stems from a fear of having disengaged employees (Corporate Leadership Council, 2004; May, Gilson, & Harter, 2004). The assumption here, of course, is that if employees are not engaged, they are disengaged. Kahn described disengagement as a state wherein employees separate, withdraw, and defend their desired selves from their work roles. To date, no research has actually determined that disengagement is the opposite of engagement. Similarly, much of the engagement literature has relied on the conceptualization of

engagement as the positive antithesis of burnout (Maslach & Leiter, 1997; Maslach, Schaufeli, and Leiter, 2001; Schaufeli & Bakker, 2004; Schaufeli, Bakker, & Salanova, 2006; Schaufeli et al., 2002). The assumption with this conceptualization is that disengagement is the same as burnout – yet, no research has provided empirical support that disengagement is equivalent to or synonymous with burnout.

Clarifying what disengagement is can equip practitioners with an accurate ability to identify employees who might be experiencing, or on the verge of experiencing disengagement, giving them an opportunity to remove hindrances that then allow these employees to become engaged again. Moreover, as much as practitioners like to place a dollar figure on the cost of disengagement (Crabtree, 2013), the lack of a disengagement measure with supporting validity evidence renders them unable to determine the true cost of disengagement. From a scholarly perspective, understanding what disengagement is relative to engagement and burnout, as well as what fosters it can lead to advancements in both theory and practice that serve to move the entire engagement field forward. For instance, theoretical advances may be in the form of models developed to explain when engagement dips down into disengagement, or even more basic – if the two concepts are actually related or unrelated.

Current communications in both the practitioner and academic realms indicate that disengagement is an important area of interest, yet neither orientation has appropriately examined disengagement. For example, current practices for assessing disengagement in organizations most often rely on proprietary measures, such as the Q^{12} (Harter, Schmidt, & Hayes, 2002). However, many of these measures, like the Q^{12}, assess constructs other than engagement or disengagement. These alternative constructs include commitment or, as with the Q^{12}, satisfaction with the work environment (Harter et al., 2002). Researchers are no more

accurate in assessing disengagement than their practitioner counterparts. Specifically, researchers have used measures of engagement assuming (without supporting evidence) that low engagement is equivalent to disengagement (e.g., Schaufeli & Bakker, 2003). Hence, there is a clear need for a scientifically developed method to identify employees who are becoming disengaged from their work environments; an accurate method developed using established psychometric principles and practices upon which both practitioners and scientists can rely.

The purpose of this study, therefore, is to create a measure for disengagement with the aim of clarifying the relationship between engagement, disengagement, and burnout. It is my contention that these three constructs lie on a continuum of sorts, from burnout to disengagement, to engagement, and that they are three related but distinct constructs. This study attempts to determine how the three constructs are related, theoretically and empirically.

Background

Although the last decade has seen a movement towards positive psychology, where researchers and practitioners attempt to increase optimal functioning for people rather than focus on and treat their negative states (Luthans & Avolio, 2009; Seligman & Csikszentmihalyi, 2000), researchers and practitioners have used the negative – the disengaged worker – to focus on the positive in organizations. For instance, when discussing research on engagement, May et al. (2004) described the importance of engagement in terms of the negative consequences derived from its absence; namely, lack of commitment or motivation that could arise from a disengaged workforce. Likewise, researchers, using low scores on their own measures of engagement to indicate disengagement, warn that only 30 % of the workforce in the United States is engaged (Saks, 2006). Similarly, when speaking about the importance of engaging the workforce, practitioners and managers refer to the disengaged employee or to organizations with high levels

of disengagement as cautionary, inspiring-to-action tales. For example, in a speech about the impact of technology on employees in the workplace, Dave Coplin, an executive at Microsoft, framed the importance of the topic using disengaged employees (Coplin, 2013). Specifically, he referred to a study that reported the vast majority (up to 71%) of the workforce was disengaged and unhappy with work (Coplin, 2013).

Many of the available (and sensational) statistics on employee engagement have come from Gallup and their use of their proprietary Q^{12} index of engagement (Harter et al., 2002). Although the Q^{12} actually measures satisfaction and not engagement (Harter et al.), the results from using the Q^{12} in hundreds of organizations have been used to demonstrate that 18% of the workforce in the United States and Canada are disengaged from their work (Crabtree, 2013). Also using the Q^{12}, Crabtree (2013) found that only 13% of the international workforce reported feeling engaged at work, with disengagement particularly high in parts of Asia and Africa (26% to 35% disengaged). Lastly, Gallup, again using its Q^{12}, determined that workers who are disengaged cost businesses in the United States an estimated $370 billion each year (Krueger & Killham, 2006). Numbers like these certainly cause decision-makers and even employees themselves to pay attention, and ponder how society could allow such a large percentage of the workforce to become and remain disengaged. Though attention grabbing, we should be a little skeptical of where these numbers come from and what is meant by "disengaged" employees, because low levels of engagement and low satisfaction with the work environment (i.e., Q^{12}; Harter et al., 2002) are not conceptually the same as disengagement (Kahn, 1990).

As evidenced by the above, there is a strong focus on disengagement as a means of justifying the importance of engagement and identifying who needs help becoming (re)engaged. Therefore, we need a way of accurately measuring disengagement and identifying the

disengaged. Rather than using low scores on engagement or high scores on dissatisfaction to indicate disengagement, a measure of disengagement would enable practitioners to accurately identify members of the workforce who are disengaged. With an accurate measure designed to assess disengagement, researchers will be able to clarify the relationships between disengagement and important organizational constructs, such as motivation, counterproductive work behavior, job performance, and stress. Researchers may also begin to develop new or revised theories of engagement, moving away from relying on disengagement to clarify what engagement is.

I suggest, based on history, that these practical and research outcomes will be possible with a well-developed measure of disengagement. For instance, after developing a measure of engagement based on the understanding of burnout (e.g., Schaufeli et al., 2002), researchers were better able understand where burnout and engagement fit in their theoretical framework. Researchers have also been able to advocate for improvements to models to help better understand how individuals experience their work (e.g., Crawford, LePine, & Rich, 2010). Furthermore, using measures of engagement, practitioners have been able to identify employees who are excelling in their work environments and used that information to improve the work environment for other employees (Byrne, 2015). Thus, like the progress made when a measure of engagement was developed, with research based on an accurate measure of disengagement and theories then informed by this research, researchers can identify interventions that inform practitioners on how to move employees out of a disengaged state and into engagement.

Employee Engagement

Because disengagement is so often juxtaposed against engagement, to understand disengagement it may help to understand first what engagement is. Kahn (1990) is considered

the first researcher to apply engagement to the workplace (Rich et al., 2010). Engagement refers to how individuals allocate their cognitive, emotional, and physical energies, and bring their preferred selves into their work (Kahn, 1990). The preferred self is the dimension of the individual that he or she prefers to demonstrate while performing the job. For example, an engineer who generally enjoys and prefers positive interactions with people, but is required to complete most of her projects on her own and has little opportunity to collaborate and work with other professionals on a team, may not be engaged in her job because she is not able to express her preferred self. Employees who are engaged are able to relate their work to their preferred self and become cognitively attentive and psychologically present on the job (Kahn, 1992). They express their investment in their currents tasks physically through high activity and energy, and are emotionally connected with their work and with those whom they work (Kahn, 1990). Thus, engagement refers to the cognitive, emotional, and physical energies simultaneously invested in the work (Kahn, 1990; Rich et al., 2010).

According to Kahn (1990), employees' engagement is determined by the psychological conditions of meaningfulness, safety, and availability. That is, employees consciously consider whether the work is meaningful and safe to bring their full selves into the work, and whether they have available to them the resources (e.g., attention, energy) required to do the work. When experiencing *psychological meaningfulness*, employees feel they are valued and useful in their work, and expect a return on the investment of injecting themselves into their work (Kahn, 1990; Shuck, 2011). Employees consider the behavioral consequences of the work situation when evaluating the *psychological safety* of the environment. A psychologically safe work environment allows workers to express their true selves in the work, without fear of potential negative consequences to their status or career. Thus, psychological safety refers to trusting the

people in the work environment. When *psychologically available*, employees not only have the resources available to them to complete the work, they are also free from outside distractions that would stop or interfere with them completing their tasks. For example, conflicts they experience in their life at home may take attention away from their work role, resulting in a lack of psychological availability. When they believe they are capable of investing their energy and full attention into the work, they will conclude they are psychologically available.

According to Kahn's framework of engagement, when all three of these psychological conditions exist at some level, employees may become engaged in their work role (Kahn, 1990; Rich et al., 2010; Shuck, 2011). When employees decide to invest their preferred self into their work and invest in their work tasks, they are able to find meaning and are intrinsically motivated to perform at high levels (Rich et al., 2010). The organization has a clear benefit from this engagement in the form of high performance and committed employees (Harter et al., 2002).

Kahn's (1990) conceptualization and definition of engagement is not the only one in the literature. Spurred by the recent shift toward positive psychology (Seligman & Csikszentmihalyi, 2000), Maslach et al. (2001) re-conceptualized burnout as the erosion of engagement. They considered engagement the opposite of the burnout components of exhaustion, cynicism, and inefficacy that could be measured by reverse scoring the Maslach Burnout Inventory (MBI; Maslach & Leiter, 1997; Maslach et al., 2001). Schaufeli et al. (2002) developed the model further by proposing that engagement is the positive antithesis of burnout and, therefore, should be considered a unique and meaningful construct on its own, as opposed to simply the opposite of burnout (Schaufeli & Bakker, 2004; Schaufeli et al., 2002). In this view, engagement is a positive state of mind that is expressed through vigor, dedication, and absorption toward the job. In demonstrating *vigor*, employees have high levels of energy, are willing to invest in their jobs,

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and will persist through challenges that arise. Through *dedication*, employees are highly involved in and enthusiastic about their work. They take pride in the work that is done and feel it has significance. Engaged employees are also *absorbed,* immersed, and attached to their work tasks (Maslach et al., 2001). Unlike Kahn's (1990) components of engagement that are all required to represent engagement, Schaufeli et al.'s (2002) need not exist simultaneously or combined to represent engagement. For example, vigor and dedication alone have often been used to indicate engagement (e.g., Schaufeli, Bakker, & Van Rhenen, 2009).

The antithesis-to-burnout approach to employee engagement has been widely popular in the literature, especially in the stress domain, most likely due to the availability of the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003). The UWES is a measure of engagement designed to assess Schaufeli et al.'s (2002) conceptualization of engagement. The popularity of the antithesis-to-burnout approach with its readily available measure, combined with the lack of a measure to assess Kahn's (1990) conceptualization of engagement, most likely explains the lack of empirical advancement of Kahn's work (Rich et al., 2010; Shuck, 2011).

However, although the opposite-of-burnout conceptualization and its accompanying UWES have become popular, recent evidence suggests the UWES does not clearly distinguish between engagement and burnout, calling to question the measure and its underlying framework. Specifically, Cole, Walter, Bedeian, and O'Boyle (2012) found that the items on the UWES and the MBI have substantial overlap, reducing the validity and utility of the UWES as a measure assessing engagement. Despite researchers (i.e., Schaufeli & Bakker, 2004) assertions that engagement and burnout are distinct constructs, many items in the MBI and UWES are nearly identical, just as reverse statements of each other. For example, "I am enthusiastic about my job" from the UWES is very similar to "I have become less enthusiastic about my work" on the MBI.

With such overlap, the engagement construct that is measured by the UWES is likely a manifestation of burnout under a new label (Cole et al., 2012). Cole et al. proposed that Kahn's (1990) conceptualization of engagement, which does not have conceptual overlap with burnout, should probably be used to guide future research on engagement.

In the last decade, researchers have revived and begun empirically testing Kahn's (1990) definition and conceptualization of personal engagement. For example, May and colleagues (2004), using their own measure of engagement, found that the psychological conditions of meaningfulness, safety, and availability were all significant predictors of employee engagement. Likewise, Rich et al. (2010) argued that Kahn's definition and framework of employee engagement provides researchers and practitioners a complete understanding of relationships with performance. Noting that the existing measures of employee engagement either did not align with Kahn's conceptualization or suffered significant psychometric deficits (i.e., May et al., 2004; Schaufeli & Bakker, 2003), Rich et al. created a new measure of employee engagement that included items reflecting the cognitive, affective, and behavioral dimensions of employee engagement, as expressed by Kahn. Using perceived organizational support (Eisenberger, Huntington, Hutchison, & Sowa, 1986) as a measure for psychological safety, core self-evaluations (Judge, Locke, & Durham, 1997) as a measure of psychological availability, and value congruence (Caldwell, Chatman, & O'Reilly, 1990) as a measure of psychological meaningfulness, Rich et al. demonstrate that employee engagement mediated the relationship between these variables and in-role and extra-role performance. Furthermore, employee engagement provided a superior explanation to the relationship between the psychological states and performance than did the narrower constructs of job satisfaction, job involvement, and intrinsic motivation (Rich et al., 2010).

The availability of a measure of Kahn's engagement, coupled with recent criticisms of the UWES (and consequently, Schaufeli et al.'s, 2002, conceptualization) may be an answer to Cole et al.'s (2012) proposition. Moreover, the recent criticisms with the opposite-to-burnout view of engagement (e.g., Cole et al., 2012; Newman & Harrison, 2008; Wefald, Reichard, & Serrano, 2012) suggest it might not be the best conceptualization to adopt.

Following from the criticisms within the engagement literature, I have decided to adopt Kahn's (1990) conceptualization of disengagement for my study. It is clear that much of the existing empirical work on engagement deviated from Kahn's conceptualization, which consequently, also diverted attention away from his definition of disengagement. By returning to Kahn's seminal theoretical work on disengagement, I propose to create a new measure that should stimulate research in the area, and help researchers and practitioners gain a better understand of both engagement and disengagement.

Disengagement

As noted, although Kahn (1990) proposed the constructs of engagement and disengagement over 20 years ago, disengagement has received very little empirical attention since. In reviewing the history of engagement research, it seems the popularity of the antipode-to-burnout perspective resulted in the burnout construct taking the place that disengagement might have held in the literature, even though by their definitions burnout and disengagement are not synonymous, and there is no empirical evidence that disengagement is the opposite of engagement.

Employees who are burned out are emotionally exhausted, depersonalize the people with whom they work, and do not feel they can effectively complete the tasks in their job (Maslach & Leiter, 1997; Maslach et al., 2001). These employees are exhausted from chronic stressors in the

environment and may be cynical because they feel there is little they can do to change the situation in which they work. As defined by Kahn, disengagement is not so extreme. Kahn considered disengagement a mechanism for individuals to protect themselves from less than optimal working conditions. Individuals, he argued, would consciously evaluate their work and determine if (a) the work would be meaningful to them, (b) would be safe to invest their preferred selves into the work, and (c) if they were available to immerse themselves in the work. Recall that with these conditions, employees would opt for engagement. In contrast, however, without the perceptions of psychological safety, meaningfulness, and availability, employees would choose not to express their preferred selves in the job – they would, instead, detach and protect themselves from these unfavorable working conditions. In other words, they would become disengaged (Kahn, 1990).

Personal disengagement, therefore, refers to employees who disconnect or fail to invest their full cognitive, physical, and emotional efforts in their job. Kahn (1990) suggested that this disconnection aspect of disengagement is similar but not identical to employees who are burned-out (Maslach & Leiter, 1997), apathetic or detached (Goffman, 1961), or effortless (Hackman, 1980). Employees who are defending their true or desired selves from the undesirable workplace conditions are similar to what researchers called defensive (Argyris, 1982) or bureaucratic (Shorris, 1984).

Unlike employees who are experiencing burnout, disengaged employees are not completely worn out by chronic stress, nor do they depersonalize their coworkers. It has been suggested that the progression in burnout is sequential, from exhaustion to depersonalization to inefficacy (Maslach et al., 2001). Thus, when individuals become so exhausted they cannot perform the tasks in their job, they then begin to depersonalize those with whom they work,

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perhaps in an attempt to protect themselves emotionally. Following chronic exhaustion and depersonalization, these individuals experience task inefficacy and no longer believe they can complete their job (Maslach et al., 2001). This progression demonstrates how burnout manifests at the extreme. Individuals in this state are likely to have high turnover intentions and low job performance (Schaufeli & Bakker, 2004; Schaufeli et al., 2002). They have been exposed to chronic stressors in their workplace and have completely disconnected from the work and all those with whom they work (Maslach et al., 2001). Employees who are burned-out are exhausted and cynical toward their work because of the chronic stressors in the environment that caused them to burn out. In other words, burnout is something that happens to employees.

In contrast, disengagement is a decision or intentional act by employees. Disengaged employees have separated their psychological selves from the job and rely on previously established scripts to complete the work (Kahn, 1990). Thus, they still perform and complete the familiar tasks of their job; however, they do so in an autonomous way, without expressing their true selves and without investing their full cognitive, affective, and physical effort. Disengaged employees may also have few connections to those with whom they work; however, they do not go to the extreme to depersonalize their coworkers. Instead, they invest little, if any, effort into initiating or maintaining unnecessary social and emotional connections in their work place. Along with leaving their desired self out of the work, disengaged employees try not to draw attention to themselves, and choose not to create meaningful relationships with their coworkers.

Employees who are in a state of disengagement in their work have made the decision to uncouple their preferred self from their work to defend against an environment that does not meet the meaningfulness, availability, and safety psychological conditions. Disengagement goes beyond the absence of engagement, as disengagement is a deliberate or intentional action taken

by employees to actively protect their preferred selves by distancing themselves cognitively, emotionally, and physically (Wollard, 2011). Therefore, similar to engagement, disengagement was conceptualized as a construct with cognitive, emotional, and physical dimensions (Kahn, 1990).

Hypothesis 1: Disengagement is comprised of three distinct but related dimensions.

Engagement describes individuals who have made a decision to invest cognitively, affectively, and behaviorally in their jobs. In contrast, disengaged employees are actively protecting themselves cognitively, emotionally, and behaviorally from their work. For this reason, I expect that employee disengagement will have a moderate (i.e., between $r = .30$ and $r = .50$, Cohen, 1988), negative relationship with employee engagement.

Hypothesis 2: There is a moderate negative relationship between employee disengagement and employee engagement.

As I previously argued, disengagement is different from burnout. Burnout refers to employees who have been exhausted, have depersonalized those with whom they work, and have higher levels of inefficacy (Maslach et al., 2001). Burnout appears to be at the extreme of what disengagement entails. Furthermore, burnout refers to employees who have been exposed to chronic stressors that have since made it difficult to complete their work (Leiter & Maslach, 2005). Because burnout is at the extreme end of disengagement but still related to the manifestation of active disengagement in the workplace, I expect the constructs to be distinct from one another, yet also show a small to moderate, positive relationship between disengagement and burnout.

Hypothesis 3: Employee disengagement is distinct from burnout.

Hypothesis 4: There is a small to moderate positive relationship between employee

disengagement and burnout.

A construct similar to disengagement, work withdrawal (Hanisch & Hulin, 1990) consists of employees' job behaviors that are unfavorable to the organization. Work withdrawal is one of the dimensions of organizational withdrawal and encompasses the set of behaviors individuals use minimize the time they spend on unsatisfying job tasks (e.g., arriving late for work). Job withdrawal, the other dimension of organizational withdrawal, is employees' efforts to remove themselves from the organization in which they are currently employed (Hanisch & Hulin, 1990; 1991). Work withdrawal is similar to disengagement because it describes behaviors that employees use to separate themselves from their work, yet remain with the organization. Work withdrawal consists of observable behaviors (e.g., lateness, absenteeism) that may be indicative of underlying job attitudes (Hulin, 1991). In contrast, disengagement is a psychological state, a latent construct, which may lead to these observable work withdrawal behaviors, but is not necessarily itself observable to others and may be indicative of underlying job attitudes. Therefore, because their manifestations at work may be similar, it is important to demonstrate that work withdrawal is a distinct construct from disengagement, though moderately positively related to disengagement.

Hypothesis 5: Disengagement is distinct from work withdrawal.

Hypothesis 6: There is a moderate positive relationship between employee disengagement and work withdrawal.

Predicting disengagement. Kahn (1990) theorized that psychological meaningfulness, safety, and availability are all needed for employees to invest their preferred self into their work and become engaged. Subsequent research has shown initial support for the psychological conditions as positively related to engagement (as of yet, no causal studies have been conducted;

e.g., May et al., 2004; Rich et al., 2010). Kahn also proposed, however, that if one or more of these psychological conditions are perceived absent, employees will protect their preferred selves from the work environment and enter a state of disengagement (Figure 1). Therefore, in the present study, I examine the relationship between psychological meaningfulness, safety, and availability and disengagement.

When changes occur in the work environment, employees make cognitive appraisals about how they perceive these variations and on the behavior adjustments they will make based on the new environment (Lazarus & Folkman, 1984). For example, Lee and Mitchell's (1994) unfolding model posits that positive or negative events in the environment may psychologically shock employees causing them to consider leaving the organization. Though without the shock, I propose that employees make a similar appraisal by considering how psychologically meaningful, available, and safe they perceive the work environment. If their appraisal is positive, employees may decide to apply their preferred self and engage in their work. However, if they perceive these conditions are low, it is likely that they will disengage from their work (Figure 1). Therefore, when employees perceive low levels of one or more of the conditions, I expect them to report moderate to high levels of disengagement.

Hypothesis 7: Low levels of psychological meaningfulness, safety, and availability are

positively related to disengagement.

METHOD

Participants

Subject matter experts. Two panels of subject matter experts (SME) were recruited to evaluate an initial pool of 50 disengagement items that I developed based on the literature. The first panel of SMEs was composed of ten industrial-organizational psychology graduate students from a local university. Graduate students were used as the first set of SMEs because they are familiar with the concepts of scale development, measurement, have an understanding of Kahn's (1990) conceptualization of engagement and disengagement, and were also readily accessible for a first evaluation of the pool of items. Fifteen graduate students were recruited through email. The first ten (60% female) to respond were selected to participate.

A second panel of five SMEs consisting of prominent employee engagement researchers was recruited. As professionals in the topic area, the SMEs in this panel were expected to have an advanced understanding of engagement and the model proposed by Kahn (1990). Expert evaluation can be very beneficial in scale development as it provides an initial assessment of content validity (Hinkin, 1998) and the expert can bring new insights into what areas are and are not being measured by the proposed items. This panel of SMEs was also recruited via email. Of the 11 recruited professional SMEs, six completed the survey (5 male, 1 unknown).

Development and validation samples. In initial scale development, it is important that the development sample closely matches the population to which the measure will be applied (DeVellis, 2012). My measure of disengagement is primarily concerned with levels of disengagement experienced by adults in their work environment. Therefore, my overall sample was recruited from Amazon's crowd sourcing pool, Mechanical Turk (MTurk). Out of this

single large sample, I created three samples. Two development samples were used to reduce the

pool of items and obtain reliability and validity evidence, and one sample was used for obtaining

initial validity evidence. Although there is no clear indication of how well MTurk represents the

working population, in terms of average age, age range, diversity, and work experience, samples

from MTurk have consistently been more closely related to the working population than

commonly used student samples (Buhrmester, Kwang, & Gosling, 2011; Casler, Bickel, &

Hackett, 2013; Holden, Dennie, & Hicks, 2013). I first explain MTurk and then the specifics of

each sample, below.

Amazon's Mechanical Turk. MTurk is not without its critics and there are concerns that

must be addressed when using such a crowdsourcing resource for research purposes. However,

the use of MTurk under carefully monitored and controlled conditions has resulted in valuable

and verifiable data in psychological research (Holden et al., 2013). I followed the guidelines put

forth by established research (e.g., Mason & Siri, 2012; Meade & Craig, 2012) to create optimal

conditions for use of MTurk for a developmental sample. Because some researchers have been

wary of MTurk data and others have been more optimistic, I will briefly describe how MTurk

works, what the research has found regarding its usability, and how I ensured quality data were

collected.

Because MTurk is a relatively new tool that has increased in popularity, researchers have

started to focus on better understanding MTurk and assessing its validity, advantages, and

disadvantages with regard to behavioral research (e.g., Buhrmester et al., 2011; Holden et al.,

2013). Recent research on MTurk has been surprisingly positive, albeit cautious. Positive

aspects include that MTurk offers relatively inexpensive access to a large and diverse subject

pool (Mason & Suri, 2012). It also allows for rapid data collection when workers are adequately

compensated (Buhrmester et al., 2011). However, the cautions are that the MTurk sample differs from the population of interest in meaningful ways and may not be properly motivated to exert the required effort and attention to complete some tasks in behavioral research (Holden et al., 2013).

MTurk is an increasingly popular data collection tool for social scientists, but was originally created to allow access to individuals who would complete tasks better suited for humans than computers (Mason & Suri, 2012). In other words, these tasks would be difficult or impossible for computers to successfully complete. For example, tasks include audio transcriptions, determining the appropriate audience for online content, and searching the internet for better deals on products. Organizations or individuals can create a Human Intelligence Task (HIT; a survey, audio transcription, most tasks that can be completed remotely) and invite MTurk workers to complete the tasks for a monetary reward. Most compensation rates fall below $1 but some tasks have compensation rates over $10 (Goodman, Cryder, & Cheema, 2013). Those who create the task are labeled "requesters" and those who complete the task, essentially as independent contractors, are called "workers". Requesters approve the workers completed task, and if the quality of the work meets the requirements set by the requester, they must compensate workers for completion of the HIT. If workers completed tasks are rejected, they are not compensated and their "HIT rate" is lowered. The HIT rate is the ratio of accepted work to rejected work and is meant to motivate workers to produce quality results. For this study, I required workers to have completed at least 50 HITs and have a HIT rate of 95% or higher.

It can be difficult to achieve the necessary sample size and diversity of participants when relying on college and university undergraduate subject pools for preliminary behavioral research. There are often several studies competing for participation among a limited number of

undergraduates, and there is only a limited time in which students have to participate. Thus, using the Internet for research is enticing because of the potential to tap into a large and diverse pool of participants quickly, cheaply, and easily. The subject pool offered through MTurk is composed of active members, searching for opportunities to participate in tasks for supplemental income, interest, and entertainment (Goodman et al., 2013). Additionally, with its higher average age and larger range of ages, the MTurk population is more similar in age to the working adult population than traditional undergraduate or social media participants (Buhrmester et al., 2011). The MTurk workers have also been shown to be more ethnically and socioeconomically diverse than undergraduate samples (Casler et al., 2013).

In addition to sample characteristics that pose an advantage to researchers, data collection with MTurk can be very efficient, taking only a few hours to meet the sample size requirements for a study (Buhrmester et al., 2011). Rapid data collection may be one reason why there is some apprehension about using MTurk as a research tool. Specifically, gathering data quickly is not necessarily problematic, but the speculation is that at the individual level, workers may not be spending the required time and attention necessary for usable, verifiable data. If workers are primarily motivated by the compensation for completing the task, they will work to complete the task as quickly as possible and supposedly care little for the quality of their responses (Burhmester et al., 2011; Goodman et al., 2013). Further, if workers are not properly compensated, we might assume that they will not put much effort toward the task.

Verification items are commonly found in HITs and requesters are expected to set clear criteria for what constitutes unsatisfactory work. While the quality of data from MTurk does not significantly differ from other online and traditional undergraduate samples (Casler et al., 2013), including verification items can confirm the quality of the responses because it allows

researchers to check participant attention (Mason & Suri, 2012). Two verification items were included in the current survey to check for attention without overloading respondents with items that can become tedious (Meade & Craig, 2012). One example of a verification item used is: "Please select the middle option for this question." Workers were notified of the inclusion of verification items and informed that incorrect responses would result in a rejection of the HIT and consequently withholding of compensation.

About the samples. Historically, scale development sample sizes have been relatively small (Schmidt & Hunter, 1977). However, for a stable confirmatory factor analysis, Hoelter (1983) recommends a minimum sample of 200. Other researchers have recommended item-to-response ratios as high as 1:10 (Hinkin, 1998). Therefore, I collected enough data to ensure that each of the three samples would have more than 200 participants.

Using MTurk, 812 total participants were recruited and surveyed. Responses were collected across seven days in small batches (ranging from 20 to 100) to allow for faster review and approval or rejection of the HITs. Time to complete, variance, and responses to verification items were all reviewed to ensure data quality before a HIT was approved. Of this sample, 64 were rejected for incorrect responses to the verification items or for completing the survey too quickly (i.e., under 5 minutes). Responses that were rejected (7.88%) resulted in no compensation for the MTurk worker, and their data were not used in the analyses. Through additional piloting, I determined that participants responding in less than 7 minutes had low response variance and were not taking enough time to understand the items, thus an additional 30 cases were excluded. Finally, participants who did not meet the survey criteria of being employed at least 20 hours per week were excluded from the study ($n = 9$). I offered a compensation rate of \$1.00 for successfully completed surveys, resulting in an average pay rate

of $3.75 per hour.

The final 709 participants were randomly assigned to two developmental samples and one cross-validation sample. The first developmental sample was used for an exploratory factor analysis ($n = 303$) and included male (47.5%) and female (52.5%) participants ranging in age from 18 to 68 years ($M = 34.87$, $SD = 10.59$). The sample was predominately Caucasian (74.9%; 8.3% African American; 6.9% Asian; 5.9% Latino; 4% other or multiracial). The average work experience reported was 11.04 years ($SD = 10.13$) and the majority of the participants worked full-time (80.5%). Annual household income ranged from below $10,000 to over $150,000, with an average between $40,000 and $60,000.

The second developmental sample used for a confirmatory factor analysis ($n = 203$) included male (52.2%) and female (47.8%) participants ranging in age from 19 to 70 years ($M = 35.44$, $SD = 10.68$). The sample was predominately Caucasian (78.8%; 5.4% African American; 5.9% Asian; 4.4% Latino; 5.4% other or multiracial). The average work experience reported was 11.90 years ($SD = 10.19$) and the majority of the participants worked full-time (74.4%). Annual household income ranged from below $10,000 to over $150,000, with an average between $40,000 and $60,000.

Lastly, the cross-validation sample ($n = 203$) included male (43.3%) and female (56.7%) participants ranging in age from 19 to 77 years ($M = 36.80$, $SD = 11.75$). The sample was predominately Caucasian (76.4%; 6.9% African American; 6.4% Asian; 6.4% Latino; 3.5% other or multiracial). The average work experience reported was 12.91 years ($SD = 11.83$) and a majority of the participants worked full-time (76.4%). Annual household income ranged from below $10,000 to over $150,000, with an average between $40,000 and $60,000.

Procedures

Item development. Following the practices and methods for scale development and validation outlined by DeVellis (2012), I created items for my new measure of disengagement. DeVellis' work offers a well-organized summary of best practices for scale development and validation. The guidelines that DeVellis offers align with other well-regarded experts in the area of scale development (e.g., Clark & Watson, 1995; Hinkin, 1998; Raykov & Marcoulides, 2010). To develop an informative, step-by-step guide, DeVellis draws from several seminal works (e.g., Narens & Luce, 1986; Nunnally, 1978). I used the deductive approach to scale development (Burisch, 1984) and created a multidimensional scale with items based on Kahn's (1990) conceptualization of disengagement that includes cognitive, affective, and physical dimensions. Scale items were developed to align with Kahn's definition of disengagement; specifically, the conscious or deliberate decision of individuals to simultaneously uncouple and defend themselves from their work environment. Therefore, the items developed for the measure for disengagement were designed to assess three cognitive, affective, and behavioral components theorized in the literature (e.g., Kahn, 1990; Wollard, 2011).

Because each subscale requires a minimum of three items for a stable factor analysis (Hinkin, 1998), I attempted to create a final scale consisting of 9 to 12 items. I generated an initial item pool of 50 items (see Table 1) to obtain broad coverage of disengagement so poor performing items could be removed after the scale was administered to the developmental sample (Clark & Watson, 1995). This large pool allowed the SMEs and I to identify the most appropriate items for the scale of disengagement and remove items that were redundant or only partially related to disengagement without concern for too many lost items. Items were written to be concise and related to the construct, and the original pool contained items with some redundancy to aid in high internal consistency.

This large pool of related items was first submitted to the graduate student SMEs for review and ratings. Graduate student SMEs were provided with a brief explanation of disengagement and asked to rate the items based on how relevant they believed each item was to assessing disengagement. They were also asked to rate the relevance of the items on cognitive, emotional, and physical dimensions. Responses were captured using a Likert-type response scale ranging from 1 = *Not relevant*, to 5 = *Very relevant*. Subsequent to these ratings, SMEs were provided with an opportunity to include comments about the items with regard to clarity, conciseness, and adequate coverage of the construct. Each SME was compensated with a five-dollar e-gift card. I revised the disengagement items based on the graduate student SME feedback.

The second SME panel, comprised of professional experts in the field of engagement, received the revised set of items. The SMEs were asked to categorize the items into cognitive, physical, emotional, and overall disengagement dimensions. Items could be categorized into multiple dimensions, if they felt items fell in more than one category. For items that could not be categorized into any dimension, SMEs were asked to explain why and provide suggestions for improvement. Professional SMEs were also compensated with a five-dollar gift card.

For capturing responses to disengagement items, I chose a 7-point Likert scale, ranging from *Strongly Disagree* to *Strongly Agree*, with *Neither agree nor disagree* as a neutral middle point on the scale. A Likert scale of agreement was used because the measure of disengagement was an attempt to determine the saliency an employee places on the behavior or idea presented in the item, rather than the frequency with which it occurs. In other words, frequency is not necessarily indicative of how salient the participant believes the issue to be. Likert scales are a popular response option in behavioral measures (DeVellis, 2012) and although the benefits to

reliability level off after five points (Lissitz & Green, 1975), seven points offer a suitable range to allow variability in the responses (Hinkin, 1995; 1998).

      Scale development. Based on the ratings, categorizations, and suggestions from the professional SMEs, the disengagement scale was reduced to 32 items (see Appendix B). The reduced scale of 32 items was administered to the development sample via an online survey.

      The objective of scale development is to efficiently quantify an underlying construct by creating a valid measure (Clark & Watson, 1995). A major part of this goal is to identify how items can be used together to more efficiently measure the underlying construct. Therefore, items are analyzed to determine if any are problematic before conducting an exploratory factor analysis to see how items cluster together. Specifically, item means, variances, and corrected item-total correlations are evaluated. Items with low variance (e.g., near zero) are indicative of similar responses to the item and suggest that the item performs poorly (i.e., it is not distinguishing between participants' levels of disengagement; DeVellis, 2012). Mean scores on the items indicate item difficultly. More extreme means (e.g., 1 or 7) suggest that it is easy for participants to strongly agree or strongly disagree with the item. Generally, items with extreme means have low variability and thus, tend not to covary with other items in the measure. Corrected item-total correlations remove an item from a scale and correlate it with the total of the remaining items in the scales. The corrected item total correlation indicates how related the item is with the rest of the scale. Low correlations with the scale indicate problematic items that do not contribute to internal consistency of the dimension and do not discriminate well between participants (Clark & Watson, 1995). Items with low corrected item total correlations ought to be reviewed and possibly excluded to improve scale discrimination.

      After initial item analysis, an exploratory factor analysis (EFA) with an oblique rotation

is conducted on the items. Although the items have been developed to align with the underlying

theory of disengagement, an EFA can provide valuable information. An EFA is used to identity

the underlying latent constructs (Fabrigar, Wegener, MacCallum, & Strahan, 1999). When

creating a new scale, an EFA can help to provide preliminary evidence for the dimensionality of

the measure (Conway & Husscutt, 2003). An oblique rotation is used because, unlike the

orthogonal rotation, an oblique rotation allows the factors to be correlated. Because it is probable

that the dimensions of disengagement are correlated, an oblique rotation should be used during

the initial scale development (Bandalos & Boehm-Kaufman, 2009).

I will use multiple techniques to determine how many meaningful factors to extract from

the EFA. A parallel analysis (Raykov & Marcoulides, 2010), retaining factors with a high

proportion of variance, and a priori theory (Conway & Husscutt, 2003; Ford, MacCallum, & Tait,

1986) are all used. Generally, a parallel analysis can help researchers determine how many

factors should be extracted when there is no theory for the number that should be extracted

(Raykov & Marcoulides, 2010). For this study, a parallel analysis allows the data to "speak for

themselves" and determine whether three factors can be extracted. A parallel analysis involves a

factor analysis on a random set of data that is of identical dimensions of the measures data;

meaning the same number of items and participants. The eigenvalues for each extracted factor

obtained on the random data are identical to the eigenvalues we would expect to extract based on

chance. The factors that are extracted from the random data are then compared to the factors

extracted from the collected data. Only factors with eigenvalues higher than the random data are

retained in the exploratory factor analysis. The parallel analysis is a better method than the

default offered in SPSS, which assigns an arbitrary eigenvalue cut off of $\lambda = 1$, and has been

demonstrated to be a less accurate method to use alone to determine how many factors to extract

from the data (Bandalos & Boehm-Kaufman, 2008).

The parallel analysis was used as a guide for extracting factors (see Figure 2). I also examined the items contained in each factor to determine whether all items within that factor were related to the dimension measured by that factor. I determined if there were items that should be removed from the measure by examining the factor loadings for each item. Generally, items with a factor loading of .40 can be considered large enough to be used in the factor (Ford et al., 1986). If factor loadings are abnormally high or low when compared to other items in the factor, I examined the content of the item for relevance to the dimension and dropped items that did not seem to relate to the other items.

During the initial development sample stage of scale development, one also estimates the reliability of scores by computing the alpha coefficient and omega coefficient. The Guttman-Cronbach alpha coefficient provides an estimate of the internal consistency of the subscales in the measure. Generally, an alpha coefficient of .70 or higher indicates acceptable internal consistency (Watson & Clark, 1995). However, alpha may underestimate reliability (Raykov & Marcoulides, 2010), therefore, I also used omega (McDonald, 1999) to assess homogeneity. Omega is a direct measure of reliability based on the factor analysis and is an accepted alternative to the alpha coefficient (Raykov & Marcoulides, 2010). The cutoffs for acceptable reliability with omega are similar to those for alpha level cutoffs. Demonstrating acceptable internal consistency is a necessary step to provide evidence of homogeneity (Cortina, 1993), which was assessed further using factor analysis.

I did not use the alpha coefficient or omega as indicators of good or bad items; rather, I determined the quality of items based on the factor analyses and item-total correlations (McDonald, 1999). Collectively, information from the variance, item means, residual matrix,

factor loadings and content of the items in comparison with the factor were used to determine which items should be retained or removed from the final scale.

Confirming the scale. The final scale was assessed with a 3-factor confirmatory factor analysis on the cross-validation sample. This analysis provides further evidence for the first hypothesis and confirms that my measure of disengagement assesses Kahn's (1990) conceptualization of disengagement. That is, consistent with Kahn (1990), I have hypothesized that disengagement will be composed of cognitive, emotional, and physical dimensions. This step of scale development confirms that the measure I have created matches its underlying theoretical conceptualization.

Using confirmatory factor analysis, I compared the results of the 3-factor model with unconstrained item loadings to those of a 1- and 2-factor model. This comparison was used to assess how well the data fit the hypothesized 3-factor model. Statistical values of the Chi-square test of goodness of fit (χ^2), the root mean square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI) are compared for each model to determine if the 3-factor model fits the data better than the 1- or 2-factor models. Cutoffs for fit indices to lower type II error rates are based on recommendations from the literature. For instance, the recommended cutoff for the CFI and TLI is .95, and the cutoff for the RMSEA is .06 (Hu & Bentler, 1999).

In addition, a significant decrease in χ^2 from the 1- and 2- factor models to the 3-factor model provides evidence that the 3-factor model has better fit. This method of model comparison examines the fit of the constrained models nested within an unconstrained model. The χ^2 difference test is used to evaluate the fit of one model nested within another. A statistically significant decrease in χ^2 indicates better model fit. Several indices of fit instead of only one were

used because they each attempt to correct for different biases and model complexity. For example, χ^2 is highly sensitive to sample size but the CFI and TLI are not (McDonald & Ho, 2002). For a χ^2 test, a significant value may indicate poorer fit. However, χ^2 is heavily dependent on sample size. Thus, rather than relying on the significance of this test, I compared the fit indices between 1-, 2-, and 3-factor models, as well as their χ^2 difference test.

Furthermore, a residual matrix can be used to assess the fit of the items with the factor. The residual matrix compares the difference between the observed and predicted correlation matrices for the model. Excessively high discrepancies (above .10) indicate pairs of problematic items (McDonald, 1999). I examined the discrepancy matrices to assess whether items are more or less related to other items as expected. Items with high or low values, greater than .1 or less than -.1, indicate potential problems (McDonald, 1999). Items with high discrepancies, lower factor loadings, and irrelevant content were removed from the scale to improve fit and shorten the measure.

Validity evidence. An important step in scale development is to provide supporting validity evidence. The disengagement items were administered along with measures of engagement (JES; Rich et al., 2010; UWES; Schaufeli & Bakker, 2003), burnout (Kristensen, Borritz, Villadsen, & Christensen, 2005), and work withdrawal (Hanisch & Hulin, 1990) to begin development of a nomological network (Cronbach & Meehl, 1955) composed of the theoretical relationships between constructs. The findings provide initial evidence for the construct validity of the measure of disengagement by providing initial evidence that disengagement is distinct from engagement and burnout (DeVellis, 2012).

Fit with Kahn's model. To establish whether my measure of disengagement matches Kahn's (1990) model of disengagement in terms of antecedents (i.e., Hypothesis 7), I

administered measures of psychological meaningfulness (Spreitzer, 1995), safety (Edmondson, 1999), and availability (Danner-Vlaardingerbroek, Kluwer, van Steenbergen, & van der Lippe, 2013) along with the disengagement, engagement, and burnout measures to the predictor sample of 200.

It is not entirely clear how disengagement, burnout, and engagement interact and are related in the workplace. I have argued that disengagement will identify employees who are not yet burned out and who are not currently engaged. Therefore, comparing my measure of disengagement with measure of burnout and engagement will help to provide discriminate and convergent validity evidence. Additionally, it will help to clarify the relationships between the three variables.

Measures

All items for each of the measures are provided in the Appendix B. Alpha reliability estimates are for this study sample.

Disengagement. The 32 items developed for this study were used to measure disengagement. The final scale consisted of 12 items ($\alpha = .89$). Items on this measure include "I often daydream at work," "I prefer to be left alone at work," and "I feel detached from my job." Responses wee captured on a 7-point Likert scale from 1 = *Strongly disagree* to 7 = *Strongly agree*. The scale consists of affective ($\alpha = .85$), physical ($\alpha = .85$), and cognitive ($\alpha = .76$) dimensions that are combined for a single score scale for measuring disengagement.

Psychological meaningfulness. The 3-item meaning dimension of Spreitzer's (1995) empowerment scale was used to measure psychological meaningfulness ($\alpha = .96$). Items on this measure include, "The work I do is very important to me," "My job activities are personally meaningful to me," and "The work I do is meaningful to me." Responses were captured on a 7-

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point Likert agreement scale from 1 = *Strongly disagree* to 7 = *Strongly agree*.

Psychological safety. Edmondson's (1999) 7-item team psychological safety scale was used to assess psychological safety (α = .88). I adapted the items to relate to the organization, rather than the team. For example, the item "People on this team sometimes reject others for being different" was adapted to read, "People in this organization sometimes reject others for being different." Responses were captured on a 7-point Likert agreement scale from 1 = *Strongly disagree* to 7 = *Strongly agree*.

Psychological availability. To measure psychological availability (α = .84), I modified six items from Danner-Vlaardingerbroek et al.'s (2013) 8-item scale to refer to work as opposed to relational partner. For example, the scale stem now reads "During work", and sample items read "I am fully available for job activities," "I am 'fully there' mentally to complete my job tasks," and "I am too preoccupied to be interested in matters related to my job." Two items, "I am fully open to what my partner wanted to tell me" and "I really wanted to know how my partner was feeling" were excluded because they could not be appropriately modified to refer to the organization. Items were scored on a 7-point Likert agreement scale from 1 = *Strongly disagree* to 7 = *Strongly agree*.

Work withdrawal. I used Hanisch and Hulin's (1990) 15-item scale to measure work withdrawal (α = .73). The work withdrawal scale is a composite of unfavorable work behaviors, lateness, and absenteeism (Hanisch & Hulin, 1990) Respondents were asked to rate how frequently they engage in behaviors such as "Making excuses to go somewhere to get out of work," "Being absent when you are not actually sick," and "Taking frequent or long coffee or lunch breaks." An 8-point scale is used to rate the frequency from 1 = *Never* to 8 = *More than once a week*

Burnout. Because the Maslach Burnout Inventory (MBI) is proprietary, I used the 7-item work-related burnout scale ($\alpha = .78$) from the Copenhagen Burnout Inventory (CBI; Kristensen et al., 2005). Responses were obtained on a 5-point response scale from 1 = *Never* to 5 = *Always*, sample items include "Do you feel worn out at the end of the working day" and "Do you have enough energy for family and friends during leisure time."

Employee engagement. The UWES (Schaufeli & Bakker, 2003) is a popular measure of engagement and low scores have been used to indicate disengagement. As I have noted in this paper, it is not the best measure of engagement if using Kahn's (1990) conceptualization because the UWES assumes engagement is the opposite of burnout and recent empirical evidence suggests it may actually be yet another version of a burnout measure (Cole et al., 2012). However, because of its popularity I administered the UWES ($\alpha = .95$), along with Rich et al.'s (2010) job engagement scale (JES; $\alpha = .97$) designed to assess Kahn's engagement, to measure employee engagement. By using both measures, my study may provide additional insight into the differences between the UWES and the JES, but more importantly demonstrate the distinctiveness of my disengagement measure from engagement scales.

Sample items from the UWES include "At my work, I feel bursting with energy," "I am enthusiastic about my job," and "Time flies when I'm working." Sample items from the JES include "I exert my full effort to my job," "I feel energetic at my job," and "At work, my mind is focused on my job." The response scale for the UWES is a 7-point Likert scale ranging from 1 = *Never* to 7 = *Always/Every day*. The response scale for the JES is a 5-point Likert agreement scale ranging from 1 = *Strongly Disagree* to 5 = S*trongly Agree*.

Social desirability. Disengagement is not a socially desirable state, but it is probable that respondents are motivated to demonstrate more socially desirable characteristics (DeVellis,

2012) regardless of their levels of disengagement. This might be especially true for MTurk workers who are concerned about their responses being rejected and their hit rate decreasing. Therefore, in the instructions and informed consent of the surveys, I included a reminder to participants that their responses are completely anonymous and that my interest was in their personal experience. However, even with these procedures in place, respondents may still attempt to appear socially acceptable. To statistically control for socially desirable responding, I included a social desirability scale (Strahan & Gerbasi, 1972) as recommended by DeVellis (2012). Responses to this measure may help identify respondents who are trying to demonstrate desirable traits. Example items include "I like to gossip at times" and "I have never intensely disliked someone." Participants with extreme responses to these items are probably trying to deceive the researchers.

The 10-item social desirability scale by Strahan and Gerbasi (1972) was used to identify participants overly concerned with their social image ($\alpha = .71$). Sample items include "I'm always willing to admit it when I make a mistake" and "I like to gossip at times." Participants give true or false responses to the items and the proportion of social desirability is calculated.

Demographics. Participants provided their age, sex, racial ethnicity, employment status (part-time, full-time, unemployed), months of work experience (later converted to years), occupation industry, and annual salary. The demographics help clarify the sample and confirm that participants closely resemble a working population, the ultimate target audience for the disengagement scale. The demographics are also used to describe who participated for use in generalizing study findings.

RESULTS

Subject Matter Expert Ratings

I calculated interrater agreement (James, Demaree, & Wolf, 1984; LeBreton & Senter, 2007) and content validity ratios (Lawshe, 1975; Polit and Beck, 2006) to evaluate the quality of the items. Interrater agreement (r_{WG}) was used to evaluate whether SME's judgments of an item were relatively equivalent by comparing the observed variance in judgments to the expected variance if the SMEs rated at random (LeBreton & Senter, 2007). Historically, researchers have used a cutoff of $r_{WG} = .70$ to indicate acceptable interrater agreement. However, LeBreton and Senter (2007) recommend using cutoffs similar to what are used when interpreting effect sizes and considering the necessary strength of agreement. Thus, I considered interrater agreement coefficients along with content validity ratios, or CVRs, to judge the quality of items rated by the SMEs. CVRs compare the number of SMEs who rated an item to have high content validity (4 or 5 on a 5-point Likert scale) to those who rated the item as average or poor. For the sample of graduate student SMEs I obtained, a CVR of .60, which indicates that most SMEs rated the item as relevant to the construct (Lawshe, 1975; Polit & Beck, 2006). Based on the ratings by the SMEs, the highest rated items were retained. Lower rated items were revised or excluded from the final scale.

Items, means, r_{WG}, and CVRs for the graduate student SME panel are presented in Table 1. Many items had acceptable CVRs and r_{WG} coefficients. Based on these ratings and the suggestions included by the graduate student SMEs, 18 of the items remained unchanged and 32 of the items were either revised or excluded for the professional SME review. Many changes improved the re-wording of confusing questions, improved content coverage, and removal of

negative wording which can be confusing for some participants (DeVellis, 2012).

  The professional SME panel categorized 50 items into cognitive, affective, emotional, or overall disengagement dimensions. They were instructed that if an item did not fit in any category, they should not force a fit. Given the task they were assigned, I could not calculate an identical interrater agreement for the professional SMEs. Therefore, I used a metric similar to the CVRs to evaluate agreement. If four or more of the six raters, a .67 ratio, rated the items as relevant to one or more dimensions, I considered this evidence that the item had the necessary quality for retention in the scale (see Table 2). Items that met this threshold were considered in combination with the graduate student SME ratings. Some revisions were made based on professional SME suggestions and some of the additional items suggested by the professional SMEs were included in the 32-item survey administered to the MTurk developmental sample.

Developmental Sample

  Item analysis. First, corrected item-total correlations were calculated to assess the items within their dimensions. The corrected item-total correlations for the items in each dimension are presented in Table 3 Interpretations for corrected item-total correlations are similar to regular inter-item correlations. Although there are no clear guidelines given in the literature for cut-offs to distinguish discriminating items from problematic items, Nunnally and Bernstein (1994) suggest that corrected item total correlations above $r = .30$ indicate acceptable discrimination even if that cut-off is arbitrary. For disengagement items, corrected item total correlations were not used as the sole indicator of problematic items. That is, correlations below $r = .30$ were considered along with item content and dimension fit before the items were excluded. For the affective dimension ($\alpha = .94$), item 20 "I am satisfied with the work I do, regardless of its quality" was excluded ($r = .14$). No items were excluded from the cognitive ($\alpha = .85$) or

physical/behavioral dimensions (α = .88).

Items were also evaluated by their means and variance. Ideally, items should have means around the center of the scale (i.e., 4 on a 7-point Likert scale) with large variances to indicate a range of responses to the item. Item means and standard deviations are presented in Table 4. Item 6 "I care very little about the quality of my work" was removed because the item mean was nearly 2 points from the center of the scale ($M = 2.10$, $SD = 1.42$). This indicates that many participants would disagree with the item, so it does not discriminate well between participants with different levels of disengagement. The low mean also suggests that this item will not covary with the other items in the survey and could potentially be problematic (DeVellis, 2012).

Exploratory factor analysis. An EFA with an oblique rotation was conducted using the statistical package Mplus version 6 (Muthén & Muthén, 1998-2012) on the remaining 30 items from the scale. Eigenvalues for the first five factors (Factor 1, $\lambda = 14.64$; Factor 2, $\lambda = 1.80$; Factor 3, $\lambda = 1.40$; Factor 4 = 1.23; Factor 5 = 1.18) are all above 1 (Guttman, 1954; Kaiser, 1960). However, the parallel analysis (Figure 2; Table 5) indicated that the eigenvalue for the third extracted factor was nearly equal to the eigenvalue that could be expected by chance ($\lambda = 1.49$). The results of this parallel analysis indicate that only two factors have eigenvalues greater than what can be expected by chance and suggest that two factors can be extracted from the data. These results combined suggest that between two and five factors may be extracted from the data. This EFA allows for an initial examination of the dimensionality of the new measure of disengagement. Given that (a) the disengagement measure has been developed using a priori theory, (b) it is better to overestimate rather than underestimate the number of factors (Ford et al., 1986), and (c) it is better to find an interpretable number of factors (Ford et al., 1986), I decided to extract three factors from the EFA.

Factor loadings for the items are listed in Table 6. Based on the factor loadings, 7 items were removed. Specifically, the loadings for items 19 and 26 were below .30 across all factors. Items 12, 14, 23, and 32 did not load in their hypothesized factors and the content of these items was not related to the content of the items in other factors. The remaining items had moderate to strong loadings (.32 – .93) on the factors. Based on these results, 23 items were included in the first confirmatory factor analysis.

Confirmatory factor analysis. A 3-factor confirmatory factor analysis (CFA) was conducted using the statistical package Mplus (Muthén & Muthén, 1998-2012) on the second developmental MTurk sample (n = 203). The first CFA included 23 items (11 affective items, 7 physical items, 5 cognitive items). The fit statistics for the 23 item, 3 factor CFA indicated that the data did not fit the model well (RMSEA = .10, CFI = .87, TLI = .85, χ^2 (227) = 679.88, p < .001). Factor loadings for the CFA are presented in Table 7. Factor loadings were all strong, above .40 (Raykov & Marcoulides, 2010).

I used a discrepancy matrix to examine how the observed correlations between the items differed from the correlations predicted by the model. The discrepancy matrix is presented in Table 8. Discrepancies greater than .10 or lower than -.10 are considered large and indicate that the items are too strongly or weakly related. A matrix with large discrepancies removed can be found in Table 9. The results of the discrepancy matrix combined with factor loadings and item content were used to determine which items could be removed from the scale. An additional 8 items were removed based on these criteria.

A second 3-factor CFA was conducted on the remaining 15 items. Factor loadings are shown in Table 7. The fit statistics for the 15 item scale were nearly acceptable (RMSEA = .07, CFI = .95, TLI = 94, χ^2 (87) = 182.57, p < .001). However, some indices (RMSEA, TLI) did not

meet the expected fit index cutoffs (Hu & Bentler, 1999). Based on these results, the content of the items were reviewed again. Some items contained wording that is very similar to the engagement scale items. For example, item 27 "I do not feel excited by my work" is very similar to the engagement item, "I am excited about my job" (Rich et al., 2010). Due to additional concerns about content and results from the item analysis (e.g., lower correlations and means), items 11 "I am often frustrated by my work tasks," 21 "I am unenthusiastic about being at work," and 27 "I do not feel excited by my work" were removed from the scale. A 3-factor CFA was conducted on the remaining 12 items. The factor loadings can be found in Table 7. The fit statistics for the 12 item scale (RMSEA = .06, CFI = .98, TLI = .97, χ^2 (51) = 82.83, p <.001) indicate that the model fits the data well. The 12 items of the final disengagement scale are included in Appendix A.

   Alternative models. To assess whether the 3-factor model fit the data better than a 1- or 2-factor model for the 12-item measure, alternative CFAs were conducted and the fit statistics were compared. The 3-factor model fit the data better than the 1- and 2- factor models (Table 10). The 2-factor model was created by combining the highly related cognitive and physical factors. The difference in χ^2 between the 3-factor and 1-factor ($\Delta\chi^2$ = 146.47, Δdf = 1) and 2-factor ($\Delta\chi^2$ = 46.62, Δdf = 2) models were significant. The results of the CFA fit statistics and alternative model comparison provide support for Hypothesis 1.

   Validity evidence. I hypothesized that disengagement would have moderate correlations with related constructs (engagement, burnout, work withdrawal; see Hypotheses 2-4). To begin gathering validity evidence, the disengagement measure outcomes were compared to engagement (JES, UWES), burnout, and work withdrawal measures in the third MTurk cross-validation sample (n=203). A correlations table of the major variables can be found in Table 11.

Relationships between disengagement and engagement (UWES and JES), burnout, and work withdrawal provide initial discriminant and convergent validity evidence for the disengagement measure. Correlations are highly negative for both the UWES ($r = -.69$) and JES ($r = -.71$). Additionally, disengagement has high positive relationships with burnout ($r = .59$) and work withdrawal ($r = .61$).

Discriminant validity evidence. To provide additional assessment of the discriminant validity of the measure of disengagement and to continue the test of Hypotheses 2-4, I examined the fit indices from a CFA of disengagement, engagement, burnout, and work withdrawal combined. Models fit the data significantly better when disengagement was considered its own factor, rather than a dimension of burnout or engagement (see Table 13). The CFA results confirm the distinctiveness of the four factors of disengagement, engagement, burnout, and work withdrawal in comparison to alternative models of the factors combined (e.g., engagement with disengagement, disengagement with work withdrawal).

Test of Kahn's model. To test Hypotheses 7, I conducted structural equation modeling (SEM) using Mplus version 6 (Muthén & Muthén, 1998-2012), which evaluated how well psychological meaningfulness, safety, and availability simultaneously related to employee disengagement and engagement. I determined the fit of the model using well-established fit indices, such as χ^2, CFI, TLI, and RMSEA, with previously noted cutoffs (see Hu & Bentler, 1999).

Prior to conducting the SEM to test Kahn's model and the hypotheses, I examined the measurement model for each of the latent variables and a full measurement model with all the latent variables (Anderson & Gerbing, 1988). Results of the individual measurement models for the latent variables, psychological meaningfulness, psychological safety, psychological

availability, disengagement, and engagement can be found in Table 14.

For the multidimensional measures (disengagement and engagement), I ran two CFAs to gather evidence for construct validity. My first goal was to confirm that the data in my sample fit the engagement measure as established by Rich et al. (2010). My second goal was to confirm the structure of the new disengagement measure. The first CFA included the affective, physical, and cognitive factors as proposed by theory (Kahn, 1990; Rich et al., 2010). In the second CFA, all items loaded on one general factor. This created a nested model where all items occur in both models and one or more of the free estimated parameters are constrained in the nested model; in other words, there are fewer paths in the nested model (Anderson & Gerbing, 1988; Weston & Gore, 2006). A χ^2 difference test can be used to determine which model fits the data better. For both disengagement and engagement, a 3-factor model provided superior fit over the 1-factor model. The RMSEA fit statistics for disengagement was a little over the .08 cut-off recommended in the literature. Additionally, the CFI statistic barely met the acceptable cut-off (Hu & Bentler, 1999). I decided to continue with these fit indices because the model does not make use of the theorized subscales of the engagement and disengagement measures (Figure 3). The cross-validation sample (n=203) did not have enough power to test the overall SEM model with each item as an indicator of the latent variable. Therefore, to test Kahn's model I created parcels as recommended in the literature (Williams & O'Boyle, 2008).

Scale items were parceled following the partial disaggregation model to create latent variables (Williams & O'Boyle, 2008). This method includes conducting an exploratory factor analysis on each of the measures included in the model. Using the resulting factor loadings, balanced parcels are created based on item difficulty and discrimination for each latent variable. A minimum of three items is recommended for each parcel (Williams & O'Boyle, 2008). Using

this method, three parcels were created for the disengagement and engagement variable. Two parcels were created for psychological safety and psychological availability. Because psychological meaningfulness only consists of three items, parcels were not created for this variable.

To test the full measurement model, I examined a 5-factor model with all five variables included in the model illustrated in Figure 3. This included psychological meaningfulness, psychological safety, psychological availability, engagement, and disengagement. Fit statistics for the measurement model are included in Table 14. Evidence for support of the model were mixed. Specifically, the CFI and TLI statistics met acceptable standards. However, the RMSEA for the model is beyond the .08 cut-off. Overall, however, the model fits the data reasonably well so I continued with the SEM analysis.

I used structural equation modeling to test Kahn's model (Hypothesis 7) as illustrated in Figure 3. Because social desirability had significant correlations with disengagement ($r = -.28$) and engagement ($r = .23$), I controlled for social desirability in the structural model. The data fit the model reasonably well (RMSEA = .09, CFI = .95, TLI = .94, χ^2 (89) = 242.54, $p < .001$). Results of the model are shown in Figure 3. Disengagement was significantly related to psychological safety ($\beta = -.30$, $p < .001$) and psychological availability ($\beta = -.54$, $p < .001$). However, disengagement and psychological meaningfulness were not significantly related ($\beta = -.11$, *ns*). Engagement was significantly related to psychological meaningfulness ($\beta = .44$, $p < .001$) and psychological availability ($\beta = .54$, $p < .001$). However, psychological safety and engagement were not significantly related ($\beta = .03$, *ns*).

DISCUSSION

All the hypotheses of the study were supported, demonstrating the successful creation of a new measure of disengagement with initial evidence of construct validity. There is evidence to support that the final measure of disengagement is composed of affective, physical, and cognitive dimensions. In addition, disengagement shares moderate positive relationships with burnout and work withdrawal and moderate negative relationships with engagement. A confirmatory factor analysis of the disengagement, burnout, and withdrawal demonstrated that disengagement is a distinct construct.

Although the primary goal of my study was to clarify what disengagement is and create a new measure, I also set out to test Kahn's (1990) model of engagement and disengagement. Results confirmed that disengagement is negatively related to the psychological conditions: psychological meaningfulness, psychological safety, and psychological availability. These findings indicate that individuals who experience low levels of these psychological conditions are more likely to experience disengagement than those with higher levels of the psychological conditions.

In pursuing my secondary objective of contributing validity evidence for Kahn's model, I found that engagement was positively related to the psychological conditions. However, contrary to previous findings (Rich et al., 2010), there was a small nonsignificant relationship between engagement and psychological safety, which may be partially explained by having used different measures for assessing psychological safety. Also contrary to previous models, engagement and psychological meaningfulness were not significantly related. Researchers should, therefore, examine the appropriateness of the measures for psychological conditions to

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determine whether new measures are warranted.

Based on Kahn's model, disengaged employees struggle to find meaning in their work, perceive that the organization does not support them, and may not trust the organization (Wollard, 2011). The results of this study show that disengagement is a distinct construct from engagement, work withdrawal, and burnout, yet that they are all moderately related to one another may suggest anticipated difficulty with identifying their tipping points. That is, at what point does an employee become disengaged versus lean towards work withdrawal? My measure provides researchers the tool needed to answer this question and more. Longitudinal and experience sampling studies using my measure may help researchers understand how employees tip from engagement to disengagement and from disengagement to withdrawal or burnout. In addition, the results of my study advance the theoretical development of disengagement and engagement, opening the floodgates for more accurate studies on the disengaged worker.

From a practical perceptive, using the measure developed in this study, organizations may be able to identify disengaged employees. Once identified, organizations can work to pull disengaged employees out of their state and into engagement, using a variety of strategies related to engaging employees. For example, the job demands-resources model (JD-R; Bakker & Demerouti, 2007) suggests that employees need job resources to maintain engagement. Thus, drawing from this model, once organizations use my measure to determine what is causing disengagement, they may determine that they need to provide resources to help make employees feel supported and find ways to become psychologically available at work. One can further speculate from the JD-R that there may be demands in the work environment that potentially cause employees to disengage, such as workplace bullying, role ambiguity, or red-tape (Crawford et al., 2010; Wollard, 2011). In such cases, organizations should work to remove these

hindering job demands to help get their employees back to a state where they can increase their

engagement through increased perceptions of psychological availability.

Clearly, however, future research will be needed to test these suppositions regarding what

causes disengagement and my measure will allow such research to finally take place.

Limitations

During initial scale development, it is important to obtain a sample that closely resembles

the target population (DeVellis, 2012). The target population for the disengagement scale

consists of working adults, not all of whom are disengaged. I have attempted to obtain a sample

that closely resembles the working population; however, the MTurk pool is still a sample of

convenience and there is no consensus in the literature regarding how similar this pool is to the

general population (Goodman et al., 2013). Additionally, there was a positive skew in responses

to the disengagement scale indicating that very few MTurk workers reported high disengagement

levels. Because I emphasized that the quality of responses (i.e., the MTurk workers performance)

would be evaluated before work would be accepted, it is possible that MTurk workers were

reluctant to admit to day dreaming or thinking of non-work issues while at work. Alternatively,

MTurk workers may simply be more engaged in their work than those who labor in more

traditional fields. Therefore, additional research among a working population not collected via

crowdsourcing will be needed to provide supportive validity evidence for my disengagement

measure.

Similarly, while every effort was made to ensure that quality data were collected from the

sample, it is possible that some participants may have responded carelessly to the items due to

lack of motivation. Careful analysis of the survey completion times, responses to verification

items and variability were used to negate the effects of these responses. Nonetheless, they may

still occur. Thus, the sample may be a potential limitation to the current study.

Qualitative interviews provide an excellent opportunity to gather rich information about a theorized construct. Conducting interviews with working adults and asking them to describe how it feels to be disengaged or how disengaged employees behave would help me to develop items for the disengagement measure that could then be tested. Before developing the items for the disengagement measure, I reviewed existing data from interviews that were conducted by other researchers. This review helped me develop items that were relevant to disengagement. However, qualitative data collection is labor intensive and due to time limits I was not able to complete my own qualitative interviews to inform my items and this is a limitation of the study.

Strengths

There are several strengths to the design of this study. First, I used established scale development practices (i.e., DeVellis, 2012) to create a measure of disengagement that aligns with Kahn's (1990) conceptualization. Second, items for the measure of disengagement were reviewed and rated by two panels of SMEs, one of which consisted of professionals in the field of engagement. Third, the characteristics of the MTurk sample (i.e., mean age, age range, work experience) are similar to the current working population. Last, the initial construct validity assessments provided evidence that the scale assesses disengagement and not engagement, burnout, or work withdrawal.

Implications for Science and Practice

Organizations and researchers have been pursuing an understanding of what causes employees to become engaged. Identifying disengaged employees will be particularly helpful for practitioners and organizational decision-makers to develop engaged employees. With a measure of disengagement, organizations should be better equipped to identify disengaged workers and

pull them out of disengagement, while preventing other employees from becoming disengaged. The type and depth of the intervention will depend on whether employees are disengaged or burned out – for example, because burnout results from chronic exposure to stressors at work, interventions for a disengaged workforce should be less labor intensive and expensive for organizations than treating burnout. Thus, distinguishing disengagement from related constructs, such as burnout, is important from both a research and an applied perspective. When we are able to identify employees who are in the psychological state of disengagement, we will be better able to understand the decisions that individuals make to become disengaged.

Previously, researchers have used burnout or low levels of engagement to describe individuals who are disengaged. This new measure of disengagement aligns with Kahn's (1990) conceptualization and clarifies what it means to be a disengaged worker. There is initial evidence to suggest that disengagement is related to, but distinct from burnout and low levels of engagement. Employees who are disengaged have made conscious decisions to protect and withdraw themselves from their work. They are not simply passive, as low levels of engagement would suggest, and they have not reached the extreme conditions of depersonalization experienced by burned out employees. Researchers can continue to parse out the differences between the disengagement, engagement, and burnout constructs.

Future Research

What can we do once we identify disengaged employees? I propose that the consequences for employees and organizations will be different for burned-out, disengaged, and engaged employees. For instance, engagement is potentially a contagious state (Byrne, 2015) and disengagement may be similarly contagious. We can expect that disengaged employees cost the organization in terms of subpar performance, low commitment, and possibly turnover intentions

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(Wollard, 2011). Consequently, coworkers of disengaged employees may also experience lower levels of performance, commitment, and turnover intentions. Individuals who are burned-out are likely to be very poor performers and have a higher rate of turnover (Schaufeli & Bakker, 2004; Schaufeli et al., 2002). Individuals with high engagement, who invest their preferred selves into their work, are likely to have higher performance, organizational citizenship behaviors, and other positive work outcomes (Kahn, 1990; Rich et al., 2010). Future research is needed to examine disengagement with these anticipated outcomes, such as performance, citizenship behaviors, commitment, and turnover intentions, to collect further validity evidence that the scale effectively distinguishes disengaged employees from engaged employees.

Additional discriminant and convergent validity evidence will need to be gathered to support disengagement as a unique construct. The high correlations found in this study between disengagement, engagement, and burnout indicate potential problems with my measure of disengagement. For example, disengagement has a stronger relationship with burnout than does the UWES. The UWES has recently been criticized for being redundant with burnout (Cole et al., 2012), making the high correlation between disengagement and burnout problematic. Future research will need to examine whether this is due to the different measures used (i.e., the CBI versus the MBI) or other issues with the disengagement measure. Research using field samples, qualitative data, more comprehensive structural equation models, and longitudinal data may help to resolve these concerns and provide the evidence necessary to determine the distinctness of the disengagement measure.

Like the support for engagement being a more inclusive construct than job involvement, job satisfaction, and intrinsic motivation (Rich et al., 2010), one can reasonably expect that disengagement will be more inclusive and explanatory than more narrow constructs like

apathetic, detached (Goffman, 1961), and effortless (Hackman, 1980). Although the Q^{12} has been used to report disengagement levels in industry, the measure was constructed as a scale for assessing work satisfaction and work group effectiveness (Harter et al., 2002). Low scores on the Q^{12} have been interpreted as equivalent to disengagement, and high scores on the scale as engagement (e.g., Crabtree, 2013). By interpreting scores in this manner, researchers are operationalizing disengagement as low engagement, or in the case of the Q^{12}, low satisfaction. The measure of disengagement created in this study can help researchers clarify the relationships between job involvement, job satisfaction, and intrinsic motivation, and disengagement.

Researchers may also use my disengagement measure to better understand how employees *become* disengaged and how to create interventions to pull employees back into an engaged state where they can invest their preferred selves into their work. There may be a tipping point at which employees tip over into burnout and if caught before that tipping point, can be rescued into becoming engaged again.

Results from future research may explain how disengagement relates to stress in the workplace. If employees are protecting themselves from a threatening work environment rather than trying to continue engaging without the resources to do so, it is possible that they will protect themselves from experiencing burnout in the future. It may be that employees who are optimists try hard to keep engaging without resources, whereas pessimists are more realistic and know when to cut their losses before depleting all their reserves. Thus, personality characteristics like optimism and pessimism should be studied. The ability to protect oneself may also delay employees' intentions to turnover or result in less of a negative impact on their overall health.

CONCLUSION

Disengaged employees have been on the minds of researchers and practitioners alike. Although there concern over disengaged employees, we have not had a measure that could successfully identify employees who experience disengagement. This study successfully created a new measure for disengagement with affective, physical, and cognitive dimensions. With the new measure of disengagement, there are some exciting directions to take and researchers and practitioners alike can learn much more about employees' experiences at work. They will be able to use the scale to identify employees who are disengaged rather than grouping them with those who are low on engagement or satisfaction, resulting in more accurate research and application.

Table 1

Graduate Student Subject Matter Expert Items, Means, Interrater Agreement, and Content Validity Ratios on Relevance to Disengagement

Item	M	r_{WG}	CVR
1. I often daydream at work.	4.60	0.87	1.00
2. I look for activities to distract me from the work I should be doing.	4.70	0.88	1.00
3. With little effort, I am able to complete the essential tasks of my job.	2.40	0.64	0.00
4. I am confused about the primary tasks of my job.	2.10	0.73	0.00
5. The work I do for this organization is not valued.	3.30	0.66	0.30
6. The work I do is unimportant.	3.60	0.64	0.60
7. It is a waste of my time to get to know my coworkers.	4.10	0.17	0.80
8. I prefer to be left alone at work.	3.70	0.22	0.80
9. I wish my supervisor would just let me do my job.	2.80	0.47	0.30
10. My boss should not expect me to do more than the essential tasks of my job.	3.60	0.64	0.60
11. Some of my best friends work for this organization. (R)	3.00	0.11	0.40
12. I am always excited to leave work.	4.40	0.76	0.90
13. I do not care about the quality of my work.	4.60	0.87	1.00
14. There is nothing I can do to improve my job.	3.50	0.31	0.70
15. Management ignores my concerns about company policies.	2.40	0.53	0.10
16. I avoid making small talk with my coworkers.	3.80	0.24	0.70
17. If I see a potential problem at work, I keep it to myself.	4.10	0.73	0.80
18. I just need to get through one day of work at a time.	3.50	0.64	0.50
19. I have been disappointed too many times to be excited about my work.	4.40	0.76	0.90
20. No matter how much time I spend on work, the quality is the same.	2.50	0.64	0.10
21. At work, I avoid tasks that require too much effort.	5.00	1.00	1.00
22. I arrive late to work when I can get away with it.	4.20	0.69	0.80
23. I do not ask for clarification on task instructions.	3.10	0.51	0.30
24. I am frustrated by my work tasks.	3.00	0.22	0.40
25. I am annoyed when coworkers talk about their personal life.	2.60	0.31	0.20
26. I keep suggestions to myself during meetings.	4.60	0.76	0.90
27. I care too little about my work to suggest ways to improve it.	4.50	0.75	0.90
28. My ideas about work are ignored.	2.22	0.53	0.10
29. My coworkers do what they want regardless of my suggestions.	2.10	0.62	0.10
30. The meetings at work never accomplish anything.	3.30	0.33	0.40
31. I often think about other things while I complete my job.	4.30	0.55	0.90
32. I do just enough to avoid getting fired.	4.70	0.88	1.00
33. My supervisor only cares about trivial parts of my job.	2.70	0.11	0.30
34. It is difficult to begin working at the start of my shift.	3.50	0.31	0.70
35. I am uncomfortable when the organization proposes changes to my job.	2.20	0.58	0.10

Note. r_{WG} = rater agreement. CVR = Content Validity Ratio. Responses recorded on a 5-point Likert scale, 1 = *Not Relevant,* 5 = *Highly Relevant.*

Table 1 (continued)

Graduate Student Subject Matter Expert 1tems, Means, Interrater Agreement, and Content Validity Ratios on Relevance to Disengagement

Item	M	r_{WG}	CVR
36. I often volunteer to take on additional projects related to my job. (R)	4.50	0.86	1.00
37. I volunteer to stay late to finish my work. (R)	4.70	0.88	1.00
38. I avoid optional social gatherings of my coworkers.	4.20	0.58	0.70
39. When others try to change how I do my job, I want to argue to stop the changes.	3.00	0.22	0.40
40. I enjoy telling people about what I do at work. (R)	3.70	0.55	0.60
41. I am proud of the organization where I work. (R)	3.20	0.02	0.40
42. I rarely feel satisfied with the work I have completed throughout my shift.	3.20	0.24	0.30
43. I am enthusiastic about working on challenges with my coworkers. (R)	4.70	0.88	1.00
44. When I am at work, I usually concentrate on other areas of my life.	4.70	0.88	1.00
45. When I am frustrated at work, I take a long break.	4.00	0.67	0.70
46. It is usually hard to look busy at work.	3.30	0.33	0.50
47. I feel like I need to protect myself from work.	4.30	0.11	0.80
48. I try to forget about work when I am at home.	3.50	0.19	0.60
49. If a project is not complete the end of my shift, I continue to think about it at home. (R)	4.50	0.86	1.00
50. I feel detached from my job.	4.90	0.95	1.00

Note. r_{WG} = rater agreement. CVR = Content Validity Ratio. Responses recorded on a 5-point Likert scale, 1 = *Not Relevant,* 5 = *Highly Relevant.*

Table 2

Professional Subject Matter Expert Items and Agreement Ratios on Relevance to Disengagement

Item	Ratio
1. I often daydream at work.	0.83
2. I often look for activities to distract me from the work I should be doing.	1.00
3. People at work do not really know me.	0.83
4. I often push my work tasks onto others.	0.83
5. The work I do seems of little value.	0.50
6. The work I do seems unimportant.	0.50
7. It is a waste of my time to get to know my coworkers.	0.83
8. I prefer to be left alone at work.	0.83
9. I wish my supervisor would let me do my job.	0.50
10. My boss should only expect me to do the essential tasks of my job, and nothing more.	0.50
11. None of my closest friends work for the same organization as me.	0.50
12. I am almost always excited to leave work.	1.00
13. I care very little about the quality of my work.	1.00
14. There is nothing I can do to improve my job.	0.67
15. Management ignores my concerns.	0.50
16. I avoid making small talk with my coworkers.	0.83
17. When I see a potential problem at work, I tend to keep it to myself.	0.67
18. I need to get through one day of work at a time.	0.50
19. I have been disappointed too many times to be excited about my work.	1.00
20. No matter how much time I spend at work, the quality seems to remain the same.	0.67
21. I avoid tasks at work that require too much effort.	1.00
22. Whenever I can get away with it, I get to work later than I am supposed to.	0.83
23. Even when I am confused at work, I fail to ask for clarification.	0.67
24. I am often frustrated by my work tasks.	0.67
25. I am annoyed when coworkers talk about their personal life.	0.67
26. I keep suggestions to myself during meetings.	0.83
27. I care too little about my work to consider ways to improve it.	0.83
28. I am reluctant to share my ideas about work.	0.83
29. My coworkers do what they want regardless of my suggestions.	0.50
30. I avoid participating in meetings because nothing is ever accomplished from them.	0.67
31. I often think about non-work things while at work.	1.00
32. I do only what I have to at work, and nothing more.	0.50

Note. Ratio is the number of SMEs who rated the item as relevant to the number of SME who made no rating.

Table 2 (continued)

Professional Subject Matter Expert Items and Agreement Ratios on Relevance to Disengagement

Item	Ratio
33. I am not my true self at work anymore.	1.00
34. At the beginning of my work shift, I have a hard time getting started.	0.83
35. I am uncomfortable when management proposes changes to my job.	0.50
36. I rarely volunteer to take on extra projects related to my job.	0.50
37. I avoid sharing personal information about myself at work, even with those I have worked with for a long time.	0.83
38. Unless it is required, I avoid attending social gatherings with my coworkers.	0.83
39. Even though I cannot explain why, I resist others trying to change how I do my job.	0.50
40. I dislike talking about my work.	0.67
41. As soon as I leave work, I stop thinking about it, even when there are uncompleted projects.	1.00
42. I feel dissatisfied with the work I have completed on the job.	0.67
43. I am unenthusiastic about working with my coworkers on job challenges.	0.50
44. When I am at work, I often concentrate on other areas of my life rather than on work.	1.00
45. When I am frustrated at work, I take a long break.	0.67
46. I find it difficult to look busy while at work.	0.50
47. I need to protect myself from how much work takes out of me.	1.00
48. Even when it would improve my job, it is not worth the effort to get into conflict at work.	0.50
49. I sometimes leave work and realize I cannot remember actually doing the work.	0.50
50. I feel detached from my job.	1.00

Note. Ratio is the number of SMEs who rated the item as relevant to the number of SME who made no rating.

Table 3

Item-Total Correlations for Initial Disengagement Measure Items Within Hypothesized Dimensions

Item	*r*
Affective	
5. I am almost always eager to leave work.	0.70
8. I have been disappointed too many times to be excited about my work.	0.81
11. I am often frustrated by my work tasks.	0.71
12. I care too little about my work to consider ways to improve it.	0.70
18. I dislike talking about my work.	0.67
20. I am satisfied with the work I do, regardless of its quality	0.14
21. I am unenthusiastic about being at work	0.78
24. I need to protect myself from how much work takes out of me.	0.63
25. I feel detached from my job.	0.87
27. I do not feel excited by my work.	0.83
28. Completing job tasks is no longer enjoyable.	0.86
29. I feel numb at work.	0.78
31. I have learned it is better not to feel when at work.	0.73
Physical/Behavioral	
3. It is a waste of my time to get to know my coworkers.	0.64
4. I prefer to be left alone at work.	0.66
7. I avoid making small talk with my coworkers.	0.60
9. I avoid tasks at work that require too much effort.	0.66
15. At the beginning of my work shift, I have a hard time getting started.	0.63
16. I avoid sharing my true feelings about work, even with those I have worked with for a long time	0.50
17. Unless it is required, I avoid attending social gatherings with my coworkers.	0.52
23. I try to look busy at work without actually doing work	0.61
30. I prefer not to be bothered at work.	0.60
32. I complete tasks slowly so that I look busy all the time	0.68
Cognitive	
1. I often daydream at work.	0.69
2. I often look for activities to distract me from the work I should be doing.	0.70
6. I care very little about the quality of my work.	0.58
10. Even when I am confused at work, I fail to ask for clarification.	0.56
13. I often think about non-work things while at work.	0.62
14. I am not my true self at work anymore.	0.54
19. As soon as I leave work, I stop thinking about it, even when there are uncompleted projects.	0.34
22. When I am at work, I often concentrate on other areas of my life rather than on work.	0.67
26. I try to protect my cognitive resources when I am at work.	0.44

Table 4

Item Means, Standard Deviations, and Corrected Item-Total Correlations for the Initial Measure of Disengagement

Item	M	SD	r
1. I often daydream at work.	3.91	1.85	0.64
2. I often look for activities to distract me from the work I should be doing.	2.89	1.68	0.69
3. It is a waste of my time to get to know my coworkers.	2.65	1.55	0.64
4. I prefer to be left alone at work.	4.30	1.77	0.63
5. I am almost always eager to leave work.	4.64	1.84	0.68
6. I care very little about the quality of my work.	2.10	1.42	0.59
7. I avoid making small talk with my coworkers.	3.08	1.72	0.53
8. I have been disappointed too many times to be excited about my work.	3.31	1.86	0.79
9. I avoid tasks at work that require too much effort.	2.80	1.65	0.71
10. Even when I am confused at work, I fail to ask for clarification.	2.53	1.51	0.57
11. I am often frustrated by my work tasks.	3.34	1.75	0.69
12. I care too little about my work to consider ways to improve it.	2.67	1.58	0.76
13. I often think about non-work things while at work.	4.66	1.80	0.58
14. I am not my true self at work anymore.	3.10	1.74	0.72
15. At the beginning of my work shift, I have a hard time getting started.	3.16	1.73	0.69
16. I avoid sharing my true feelings about work, even with those I have worked with for a long time	3.28	1.68	0.57
17. Unless it is required, I avoid attending social gatherings with my coworkers.	3.99	1.82	0.53
18. I dislike talking about my work.	3.49	1.75	0.67
19. As soon as I leave work, I stop thinking about it, even when there are uncompleted projects.	3.75	1.82	0.35
20. I am satisfied with the work I do, regardless of its quality	3.69	1.66	0.21
21. I am unenthusiastic about being at work	3.69	1.91	0.75
22. When I am at work, I often concentrate on other areas of my life rather than on work.	3.54	1.76	0.67
23. I try to look busy at work without actually doing work	2.92	1.68	0.68
24. I need to protect myself from how much work takes out of me.	3.81	1.85	0.63
25. I feel detached from my job.	3.28	1.88	0.84
26. I try to protect my cognitive resources when I am at work.	4.09	1.56	0.53
27. I do not feel excited by my work.	3.75	1.90	0.78
28. Completing job tasks is no longer enjoyable.	3.31	1.81	0.82
29. I feel numb at work.	2.94	1.76	0.78
30. I prefer not to be bothered at work.	4.30	1.77	0.56
31. I have learned it is better not to feel when at work.	3.35	1.82	0.75
32. I complete tasks slowly so that I look busy all the time	2.78	1.68	0.72

Table 5

Exploratory Factor Analysis Eigenvalues

Factor	30 Item EFA	Random Data EFA
1	14.64	1.57
2	1.80	1.53
3	1.40	1.49
4	1.23	1.38
5	1.18	1.36
6	0.92	1.31
7	0.75	1.28
8	0.65	1.22
9	0.61	1.18
10	0.54	1.13
11	0.54	1.12
12	0.49	1.09
13	0.46	1.06
14	0.45	1.03
15	0.43	1.00
16	0.39	0.95
17	0.39	0.94
18	0.36	0.89
19	0.35	0.87
20	0.32	0.84
21	0.30	0.80
22	0.27	0.78
23	0.26	0.76
24	0.24	0.73
25	0.22	0.71
26	0.20	0.67
27	0.18	0.66
28	0.17	0.60
29	0.15	0.54
30	0.12	0.53

Table 6

Exploratory Factor Analysis Factor Loadings

Item	Factors		
	1	2	3
1. I often daydream at work.	-0.10	0.28	**0.56**
2. I often look for activities to distract me from the work I should be doing.	0.02	0.09	**0.74**
3. It is a waste of my time to get to know my coworkers.	**0.68**	0.02	0.13
4. I prefer to be left alone at work.	**0.32**	0.26	0.17
5. I am almost always eager to leave work.	-0.06	**0.76**	0.04
7. I avoid making small talk with my coworkers.	**0.79**	-0.09	0.01
8. I have been disappointed too many times to be excited about my work.	0.37	**0.58**	-0.02
9. I avoid tasks at work that require too much effort.	**0.33**	0.03	0.52
10. Even when I am confused at work, I fail to ask for clarification.	0.37	-0.13	**0.51**
11. I am often frustrated by my work tasks.	0.12	**0.61**	0.06
12. I care too little about my work to consider ways to improve it.	0.38	0.15	0.40
13. I often think about non-work things while at work.	-0.17	0.39	**0.40**
14. I am not my true self at work anymore.	0.37	0.47	0.01
15. At the beginning of my work shift, I have a hard time getting started.	0.16	0.29	0.37
16. I avoid sharing my true feelings about work, even with those I have worked with for a long time	**0.40**	0.27	0.01
17. Unless it is required, I avoid attending social gatherings with my coworkers.	**0.47**	0.29	-0.13
18. I dislike talking about my work.	0.26	**0.56**	-0.05
19. As soon as I leave work, I stop thinking about it, even when there are uncompleted projects.	-0.09	0.29	0.17
21. I am unenthusiastic about being at work	-0.02	**0.84**	-0.01
22. When I am at work, I often concentrate on other areas of my life rather than on work.	0.01	0.26	**0.52**
23. I try to look busy at work without actually doing work	-0.02	0.00	0.86
24. I need to protect myself from how much work takes out of me.	0.33	**0.41**	0.01
25. I feel detached from my job.	0.05	**0.75**	0.17
26. I try to protect my cognitive resources when I am at work.	0.20	0.28	0.13
27. I do not feel excited by my work.	-0.01	**0.93**	-0.05
28. Completing job tasks is no longer enjoyable.	0.09	**0.82**	0.02
29. I feel numb at work.	0.17	**0.51**	0.24
30. I prefer not to be bothered at work.	**0.34**	0.14	0.19
31. I have learned it is better not to feel when at work.	0.34	**0.37**	0.19
32. I complete tasks slowly so that I look busy all the time	0.10	-0.02	0.83

Note. Items 6 and 20 were excluded from the analysis. n = 303. Acceptable loadings on hypothesized factors are bold.

Table 7

*Three-Factor Confirmatory Factor Analysis Factor Loadings Using Developmental CFA MTurk
Sample*

		CFA		
Factor	Item	23 Items	15 items	12 items
Affective	5	0.73	–	–
	8	0.82	0.82	0.82
	11	0.77	0.77	–
	18	0.75	–	–
	21	0.77	0.76	–
	24	0.67	0.66	0.65
	25	0.92	0.93	0.93
	27	0.86	0.84	–
	28	0.87	–	–
	29	0.84	0.86	0.87
	31	0.74	–	–

		CFA		
Factor	Item	23 Items	15 Items	12 Items
Physical	3	0.72	0.70	0.71
	4	0.75	0.73	0.75
	7	0.64	–	–
	9	0.72	–	–
	16	0.55	0.59	0.59
	17	0.69	0.71	0.70
	30	0.71	–	–

		CFA		
Factor	Item	23 Items	15 Items	12 Items
Cognitive	1	0.77	0.77	0.77
	2	0.77	0.75	0.75
	10	0.51	–	–
	13	0.71	0.72	0.72
	22	0.83	0.84	0.84

Table 8

Discrepancy Matrix for the Confirmatory Factor Analysis

Items	1	2	3	4	5	7	8	9	10	11	13	16	17	18
1	0.00													
2	0.00	0.00												
3	-0.04	0.03	0.00											
4	-0.03	-0.06	-0.05	0.00										
5	0.03	-0.03	-0.09	0.00	0.00									
7	**-0.14**	-0.07	**0.13**	0.05	**-0.13**	0.00								
8	0.06	0.09	0.06	-0.04	-0.04	-0.07	0.00							
9	**0.14**	**0.29**	0.08	**-0.13**	0.03	-0.05	**0.23**	0.00						
10	0.00	**0.13**	**0.12**	0.00	-0.10	**0.12**	0.09	**0.30**	0.00					
11	-0.01	0.05	-0.02	-0.05	-0.04	-0.09	0.05	**0.17**	0.06	0.00				
13	0.07	-0.08	-0.09	0.02	**0.13**	-0.08	-0.03	0.04	**-0.10**	-0.08	0.00			
16	-0.05	-0.10	0.01	0.06	-0.04	0.02	0.02	-0.07	**0.21**	-0.06	0.01	0.00		
17	**-0.14**	-0.03	-0.01	0.00	0.06	0.09	-0.02	-0.05	-0.03	0.04	0.03	0.02	0.00	
18	-0.04	-0.05	0.04	0.07	-0.01	0.02	-0.03	0.08	0.06	0.03	-0.02	**0.18**	0.07	0.00
21	-0.01	0.00	-0.09	-0.04	0.06	-0.10	-0.06	0.02	-0.08	-0.04	0.01	-0.03	0.01	0.00
22	-0.02	0.00	-0.08	-0.04	0.04	**-0.13**	0.04	**0.12**	-0.07	-0.04	0.04	0.00	-0.04	-0.04
24	-0.06	-0.07	0.00	0.00	0.01	-0.08	-0.03	0.06	0.00	0.08	-0.08	0.07	0.06	0.05
25	-0.03	-0.01	-0.02	-0.04	-0.03	-0.08	0.01	**0.13**	0.01	-0.01	0.00	0.02	-0.01	0.00
27	-0.04	-0.06	-0.08	-0.01	0.10	**-0.15**	-0.01	0.02	-0.09	-0.08	0.01	-0.04	0.02	-0.02
28	-0.04	-0.02	**-0.11**	-0.08	0.05	**-0.21**	-0.03	0.05	**-0.10**	-0.02	-0.01	**-0.10**	-0.03	-0.02
29	-0.01	0.05	0.04	-0.04	-0.08	-0.02	0.00	**0.14**	0.06	0.08	-0.04	0.02	0.01	0.01
30	0.00	0.01	-0.08	**0.17**	0.00	-0.04	0.03	-0.07	0.02	0.06	0.05	-0.04	-0.02	0.06
31	-0.02	0.02	0.04	0.00	-0.02	0.02	0.06	**0.14**	**0.12**	0.02	-0.05	**0.14**	0.10	-0.02

Note. All discrepancies > .1 or < -.1 are bold and considered large.

Table 8 (continued)

Discrepancy Matrix for the Confirmatory Factor Analysis

Items	21	22	24	25	27	28	29	30	31
21	0.00								
22	0.05	0.00							
24	-0.01	-0.04	0.00						
25	-0.02	0.02	-0.02	0.00					
27	0.09	0.05	-0.03	0.00	0.00				
28	0.07	0.07	-0.01	0.00	0.10	0.00			
29	-0.03	-0.02	0.01	0.04	-0.07	-0.05	0.00		
30	-0.02	0.01	0.00	0.02	-0.04	-0.05	0.03	0.00	
31	-0.08	0.02	0.08	-0.01	-0.07	-0.06	0.08	0.08	0.00

Note. All discrepancies > .1 or < -.1 are bold and considered large.

Table 9

Discrepancy Matrix with Large Discrepancies Removed

Items	1	2	3	4	8	11	13	16	17	21	22	24	25	27	29
1	0.00														
2	0.00	0.00													
3	-0.04	0.03	0.00												
4	-0.03	-0.06	-0.05	0.00											
8	0.06	0.09	0.06	-0.04	0.00										
11	-0.01	0.05	-0.02	-0.05	0.05	0.00									
13	0.07	-0.08	-0.09	0.02	-0.03	-0.08	0.00								
16	-0.05	-0.10	0.01	0.06	0.02	-0.06	0.01	0.00							
17	-0.14	-0.03	-0.01	0.00	-0.02	0.04	0.03	0.02	0.00						
21	-0.01	0.00	-0.09	-0.04	-0.06	-0.04	0.01	-0.03	0.01	0.00					
22	-0.02	0.00	-0.08	-0.04	0.04	-0.04	0.04	0.00	-0.04	0.05	0.00				
24	-0.06	-0.07	0.00	0.00	-0.03	0.08	-0.08	0.07	0.06	-0.01	-0.04	0.00			
25	-0.03	-0.01	-0.02	-0.04	0.01	-0.01	0.00	0.02	-0.01	-0.02	0.02	-0.02	0.00		
27	-0.04	-0.06	-0.08	-0.01	-0.01	-0.08	0.01	-0.04	0.02	0.09	0.05	-0.03	0.00	0.00	
29	-0.01	0.05	0.04	-0.04	0.00	0.08	-0.04	0.02	0.01	-0.03	-0.02	0.01	0.04	-0.07	0.00

Table 10

Confirmatory Factor Analysis Fit Statistics Comparison

CFA	χ^2	*df*	$\Delta\chi^2$	Δdf	RMSEA	90% RMSEA CI	CFI	TLI
Three–Factor	82.83**	51			.06	[.03, .08]	.98	.97
Two–Factor	129.45**	53	46.62**	2	.08	[.07, .10]	.94	.93
Single Factor	229.30**	54	146.47**	3	.13	[.11, .14]	.87	.84

Note. n = 203. CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root-mean-square error of approximation.
** $p < .001$

Table 11

Correlations and Descriptive Statistics

Items	1	2	3	4	5	6	7	8	9
1. Disengagement	*.89*								
2. Psych. Meaning	-.61**	*.96*							
3. Psych. Safety	-.59**	.54**	*.88*						
4. Psych. Availability	-.69**	.57**	.43**	*.84*					
5. Utrecht Work Engagement Scale	-.69**	.86**	.58**	.67**	*.95*				
6. Job Engagement Scale	-.71**	.78**	.51**	.78**	.87**	*.97*			
7. Burnout	.59**	-.47**	-.65**	-.47**	-.55**	-.47**	*.78*		
8. Work Withdraw	.61**	-.52**	-.30**	-.63**	-.60**	-.65**	.32**	*.73*	
9. Social Desirability	-.28**	.16*	.06	.20**	.22**	.23**	-.11	-.26**	*.71*
Mean	3.56	4.66	4.53	5.19	4.43	3.63	2.95	3.40	.53
SD	1.18	1.77	1.29	1.09	1.27	0.85	0.74	0.86	.24

Note. n = 203. Cronbach's alpha appears along the diagonal in italics.
** $p < .01$. * $p < .05$.

Table 12

Correlations and Descriptive Statistics for Scale Dimensions

Items	1	2	3	4	5	6	7	8	9
Disengagement									
1. Affective	*.85*								
2. Cognitive	.59	*.76*							
3. Physical	.62	.37	*.85*						
Job Engagement Scale									
4. Physical	-.56	-.62	-.32	*.92*					
5. Emotional	-.75	-.56	-.44	.73	*.96*				
6. Cognitive	-.58	-.66	-.28	.88	.71	*.94*			
Utrecht Work Engagement Scale									
7. Vigor	-.67	-.57	-.41	.75	.87	.71	*.86*		
8. Dedication	-.69	-.56	-.40	.71	.85	.71	.89	*.85*	
9. Absorption	-.69	-.55	-.40	.70	.89	.67	.90	.89	*.86*
Mean	3.36	3.74	3.59	3.77	3.39	3.73	4.33	4.60	4.38
SD	1.46	1.47	1.35	0.87	1.07	0.85	1.30	1.33	1.32

Note. n = 203. Cronbach's alpha appears along the diagonal in italics. All correlations significant at $p < .01$

Table 13

Confirmatory Factor Analyses Fit Comparison by Measure

CFA	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	90% RMSEA CI	CFI	TLI
Four-Factor	3584.78**	1272			0.10	[.09, .10]	0.70	0.69
Three–Factor	3931.73**	1274	346.95**	2	0.10	[.10, .11]	0.66	0.64
Two–Factor	4121.34**	1275	536.56**	3	0.11	[.10, .11]	0.63	0.62
Single Factor	4761.72**	1275	1176.94**	3	0.12	[.11, .12]	0.55	0.53

Note. n = 203. CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root-mean-square error of approximation.
** $p < .001$

Table 14

Measurement Models

Model	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	95% RMSEA CI	CFI	TLI
3-Factor Disengagement	169.09	54			.10	[.09, .12]	.90	.89
1-Factor Disengagement	363.53	55	194.44**	1	.17	[.15, .18]	.73	.68
3-Factor Engagement	409.56	135			.10	[.09, .11]	.93	.92
1-Factor Engagement	996.72	136	587.16**	1	.18	[.17, .19]	.77	.75
1-Factor Psychological Meaning	74.60	1			.60	[.49, .72]	.90	.70
1-Factor Psychological Safety	71.96	15			.14	[.11, .17]	.91	.87
1-Factor Psychological Availability	63.24	10			.16	[.13, .20]	.90	.84
5-Factor Full Model	193.99	55			.11	[.10, .13]	.95	.94

Note. n = 203. CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root-mean-square error of approximation.
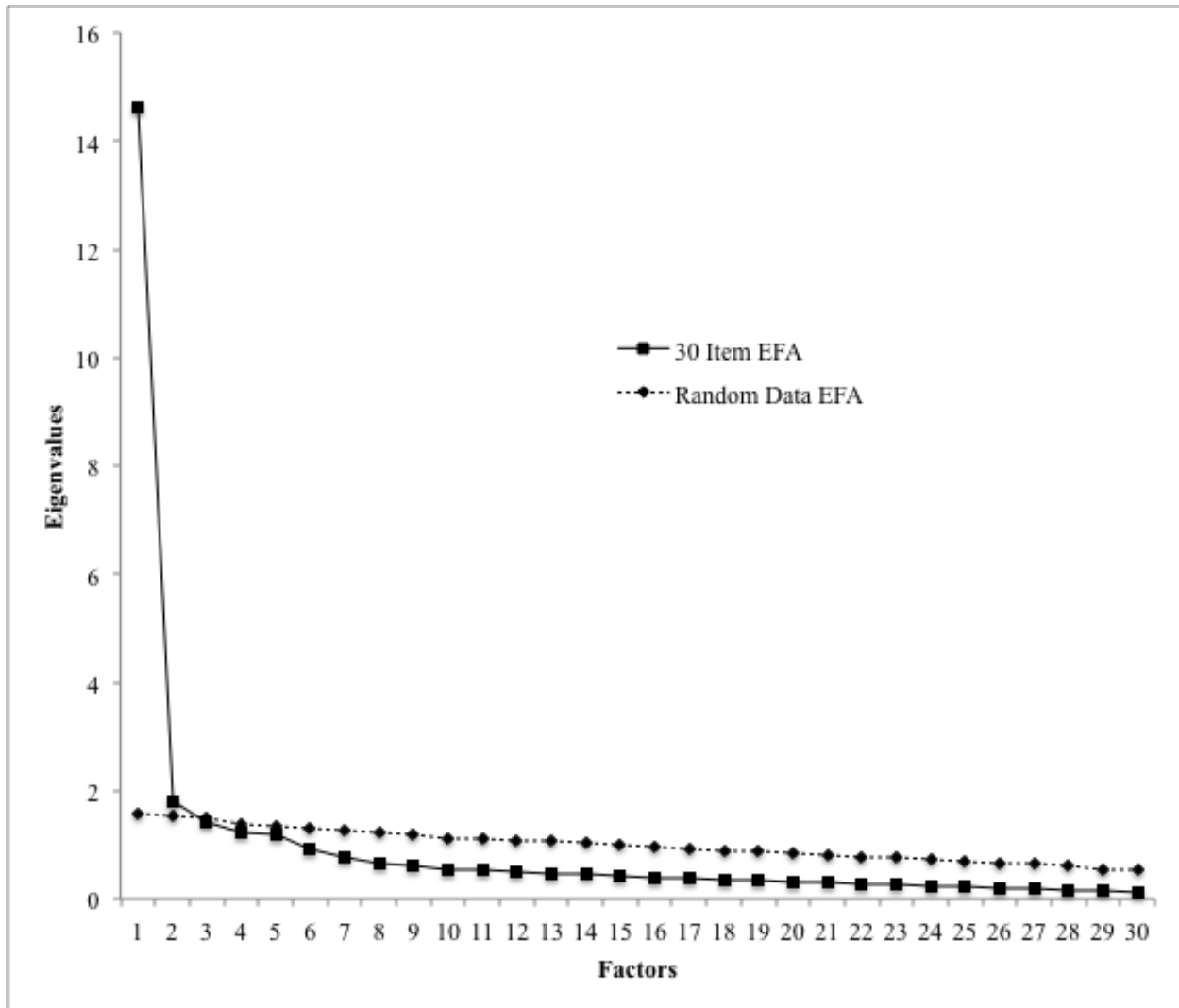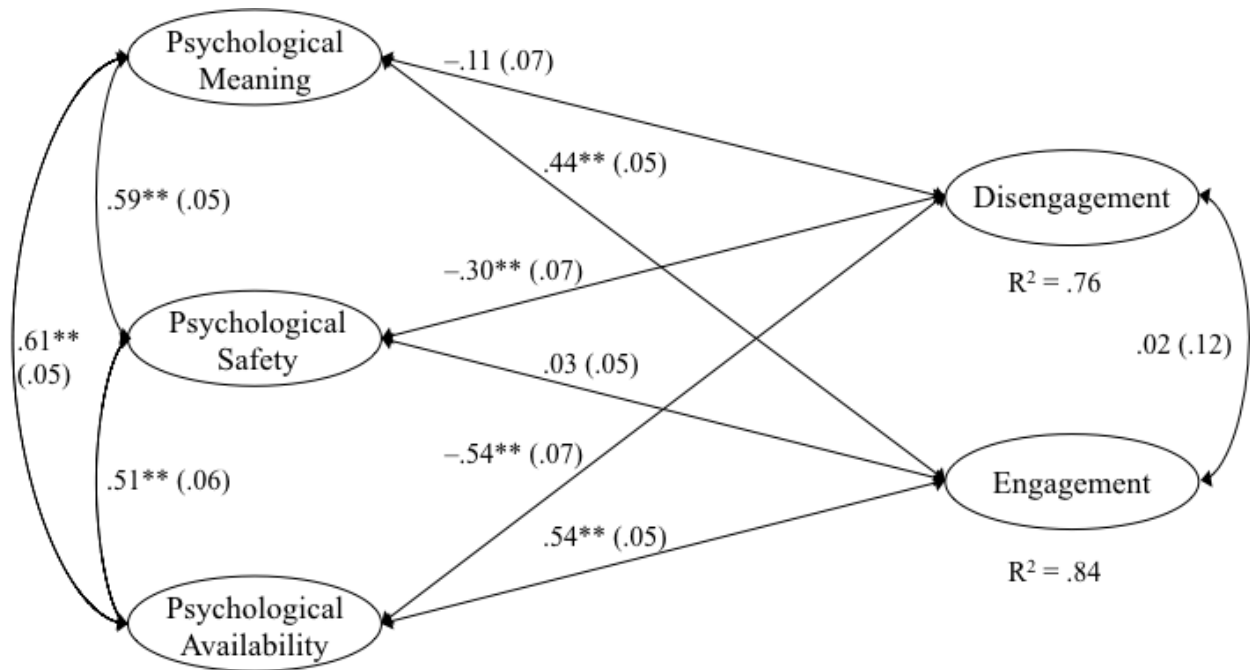** $p < .001$
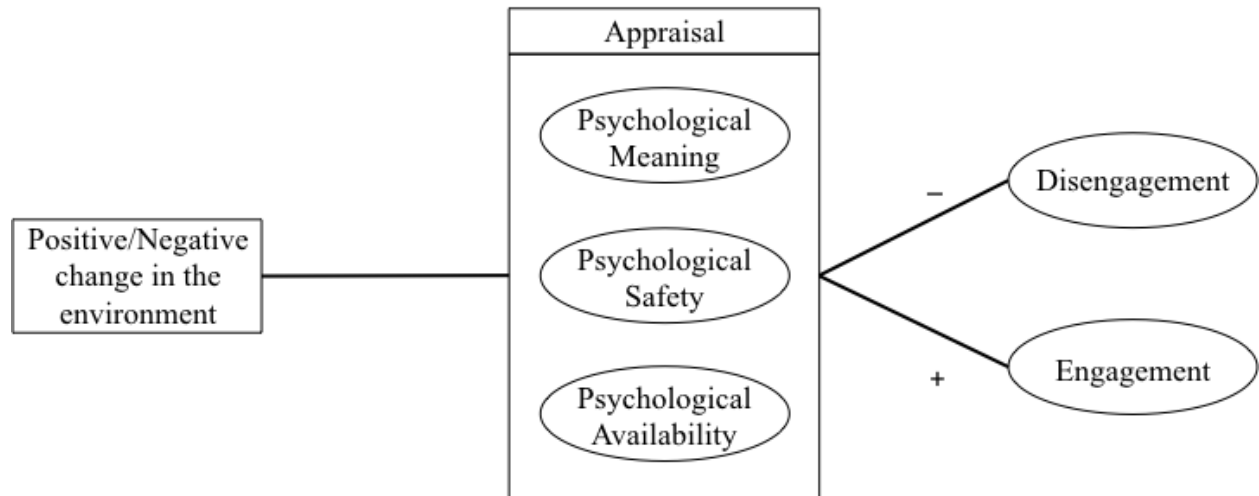
Figure 1

Theoretical Model

Figure 2

EFA Parallel Analysis

Note. Standardized path coefficients appear in the model, with standard errors in parentheses. The model controlled for social desirability. $* p < .05, ** p < .01$

Figure 3

Structural Equation Model

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Affective
1. I have been disappointed too many times to be excited about my work.
2. I need to protect myself from how much work takes out of me.
3. I feel detached from my job.
4. I feel numb at work.

Physical
5. It is a waste of my time to get to know my coworkers.
6. I prefer to be left alone at work.
7. I avoid sharing my true feelings about work, even with those I have worked with for a long time
8. Unless it is required, I avoid attending social gatherings with my coworkers.

Cognitive
9. I often daydream at work.
10. I often look for activities to distract me from the work I should be doing.
11. I often think about non-work things while at work.
12. When I am at work, I often concentrate on other areas of my life rather than on work.

Disengagement (7-point Likert scale)

1. I often daydream at work.
2. I often look for activities to distract me from the work I should be doing.
3. It is a waste of my time to get to know my coworkers.
4. I prefer to be left alone at work.
5. I am almost always eager to leave work.
6. I care very little about the quality of my work.
7. I avoid making small talk with my coworkers.
8. I have been disappointed too many times to be excited about my work.
9. I avoid tasks at work that require too much effort.
10. Even when I am confused at work, I fail to ask for clarification.
11. I am often frustrated by my work tasks.
12. I care too little about my work to consider ways to improve it.
13. I often think about non-work things while at work.
14. I am not my true self at work anymore.
15. At the beginning of my work shift, I have a hard time getting started.
16. I avoid sharing my true feelings about work, even with those I have worked with for a long time
17. Unless it is required, I avoid attending social gatherings with my coworkers.
18. I dislike talking about my work.
19. As soon as I leave work, I stop thinking about it, even when there are uncompleted projects.
20. I am satisfied with the work I do, regardless of its quality
21. I am unenthusiastic about being at work
22. When I am at work, I often concentrate on other areas of my life rather than on work.
23. I try to look busy at work without actually doing work
24. I need to protect myself from how much work takes out of me.
25. I feel detached from my job.
26. I try to protect my cognitive resources when I am at work.
27. I do not feel excited by my work.
28. Completing job tasks is no longer enjoyable.
29. I feel numb at work.
30. I prefer not to be bothered at work.
31. I have learned it is better not to feel when at work.
32. I complete tasks slowly so that I look busy all the time

Psychological Meaningfulness (7-point Likert scale)

1. The work I do is very important to me.
2. My job activities are personally meaningful to me.
3. The work I do is meaningful to me.

Psychological Safety (7-point Likert scale)

1. If you make a mistake in this organization, it is often held against you. (R)
2. Members of this organization are able to bring up problems and tough issues.
3. People in this organization sometimes reject others for being different. (R)
4. It is safe to take a risk in this organization.
5. It is difficult to ask other members in this organization for help. (R)
6. No one in this organization would deliberately act in a way that undermines my efforts.
7. Working with members of this organization, my unique skills and talents are valued and utilized.

Psychological Availability (7-point Likert scale)
   During work…
1. I am fully available for job activities.
2. I am not in the mood to undertake any job responsibilities.
3. I am 'fully there' mentally to complete my job tasks.
4. I am too preoccupied to be interested in matters related to my job.
5. I am well able to tell how my work is going.
6. my thoughts are completely focused on my job.

Work Withdrawal (8-point frequency scale)
   Estimate how frequently you have engaged in the following behaviors in the past few months
1. Failing to attend scheduled meetings
2. Volunteering to finish a project for a colleague who is sick (R)
3. Drinking alcohol or using illicit drugs after work primarily because of things that occurred at work
4. Talking up this organization to my friends as a great organization to be involved in (R)
5. Using the work phone for long distance personal calls
6. Letting other do your work for you
7. Taking responsibility for initiating needed changes in your work (R)
8. Taking frequent or long coffee or lunch breaks
9. Staying late or working on weekends to help a coworker (R)
10. Making excuses to go somewhere to get out of work
11. Being absent when you are not actually sick
12. Doing poor quality work
13. Using equipment for personal purposes without permission
14. Working with new or younger coworkers to help them learn their job in the organization (R)
15. Working on a project at home after hours (R)

Burnout (5-point Likert scale)
1. Is your work emotionally exhausting?
2. Do you feel burned out because of your work?
3. Does your work frustrate you?
4. Do you feel worn out at the end of the working day?
5. Are you exhausted in the morning at the thought of another day at work?
6. Do you feel that every working hour is tiring for you?
7. Do you have enough energy for family and friends during leisure time?

Employee Engagement UWES (7-point Likert scale)
1. At my work, I feel bursting with energy
2. At my job, I feel strong and vigorous
3. When I get up in the morning, I feel like going to work
4. I can continue working for very long periods at a time
5. At my job, I am very resilient, mentally
6. At my work I always persevere, even when things do not go well
7. I find the work that I do full of meaning and purpose
8. I am enthusiastic about my job
9. My job inspires me
10. I am proud on the work that I do
11. To me, my job is challenging
12. Time flies when I'm working
13. When I am working, I forget everything else around me
14. I feel happy when I am working intensely
15. I am immersed in my work
16. I get carried away when I'm working
17. It is difficult to detach myself from my job

Employee Engagement JES (5-point Likert scale)
1. I work with intensity on my job
2. I exert my full effort to my job
3. I devote a lot of energy to my job
4. I try my hardest to perform well on my job
5. I strive as hard as I can to complete my job
6. I exert a lot of energy on my job
7. I am enthusiastic in my job
8. I feel energetic at my job
9. I am interested in my job
10. I am proud of my job
11. I feel positive about my job
12. I am excited about my job
13. At work, my mind is focused on my job
14. At work, I pay a lot of attention to my job
15. At work, I focus a great deal of attention on my job
16. At work, I am absorbed by my job
17. At work, I concentrate on my job
18. At work, I devote a lot of attention to my job

Social Desirability (True or False)
1. I'm always willing to admit it when I make a mistake.
2. I always try to practice what I preach.
3. I never resent being asked to return a favor.
4. I have never been irked when people expressed ideas very different from my own.
5. I have never deliberately said something that hurt someone's feelings.

6. I like to gossip at times.
7. There have been occasions when I took advantage of someone.
8. I sometimes try to get even rather than forgive and forget.
9. At times I have really insisted on having things my own way.
10. There have been occasions when I felt like smashing things.