2021

"A Penny for Your Thoughts?": Development and Validation of a Revised Measure of Rumination

Jenna M. Duronio
University of Central Florida

“A PENNY FOR YOUR THOUGHTS?”: DEVELOPMENT AND VALIDATION OF A REVISED MEASURE OF RUMINATION

by

JENNA MARIE DURONIO BELTRAMO
B.A. Oakland University, 2018

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Science
in the Department of Psychology
in the College of Sciences
at the University of Central Florida
Orlando, Florida

Fall Term
2021

ABSTRACT

The present research sought to demonstrate the utility, validity, and reliability of a new measure of rumination assessing both the intentionality and valence of ruminative thought. The Intentionality and Valence of Work-Related Ruminations Questionnaire (IV-WRRQ) is developed based on Martin and Tesser's (1996) goal progress theory of rumination and existing approaches across various sub-disciplines in psychology. Specifically, it is designed to assess four distinct forms of rumination: deliberate-positive, deliberate-negative, intrusive-positive, and intrusive negative rumination. Initial expert ratings provided insight into the initial construct validity, face validity, and readability of the items. The measure was further refined in a study among MTurk workers ($N = 151$) using two separate surveys separated by a two-week time interval in line with best practices. The second study was conducted among a sample of college students ($N = 288$) in order to provide further evidence of the validity and reliability of the new measure. The IV-WRRQ ultimately demonstrated good internal consistency, convergent validity with existing rumination measures, divergent validity with psychological detachment, and predictive validity with regard to important positive and negative outcomes in affective, cognitive, physical, and health-related domains, in some cases over and above a popular, previously validated measure of rumination.

Keywords: Rumination, stress, recovery, psychological detachment

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

Rumination has been widely studied across psychological disciplines, particularly in occupational health psychology and clinical psychology. However, across these sub-disciplines of psychology rumination has not been consistently conceptualized or measured. As a result, research progress surrounding the construct of rumination appears to have more breadth than depth or clarity. Additionally, as a result of differences in the conceptualization and measurement of rumination, research progress within each of these sub-disciplines cannot adequately inform or translate to other sub-disciplines. For example, much research in clinical psychology has examined connections between rumination and depressive symptoms (e.g., Smith & Alloy, 2009). Such research might hold relevance to occupational health research pertaining to links between rumination and burnout/fatigue if rumination were conceptualized and measured the same way in both contexts.

The aim of the paper is to demonstrate the utility of a revised measure of rumination addressing both intentionality and valence of thought. In the follow sections I review existing theory and research surrounding rumination from occupational health psychology, industrial and organizational psychology, and clinical psychology literatures. I begin with a discussion of an overarching theory of rumination that is cited across all of these literatures and provides the guiding framework for the present studies. This discussion is followed by notes regarding the relevance of rumination to broader research regarding stress and health, as well as recovery. I then provide a more specific discussion of research on, and measurement of rumination in the contexts of occupational health and clinical psychology. Ultimately, an integrated method of assessing rumination is proposed.

LITERATURE REVIEW

The Goal Progress Theory of Rumination

One of the most widely cited theories with regard to rumination in the field of psychology (which is applicable across its various sub-disciplines) is the Goal Progress Theory of Rumination proposed by Martin and Tesser (1996). According to this theory, rumination is defined as "a class of conscious thoughts that revolve around a common instrumental theme and that recur in the absence of immediate environmental demands requiring the thoughts" (p. 7). Importantly, Martin and Tesser (1996) further explain:

> Although the occurrence of these thoughts does not depend on the direct cueing by the external environments, indirect cueing by the environment is likely given the high accessibility of goal-related concepts. Although the external environment may maintain any thought through repeated cueing, the maintenance of ruminative thoughts is not dependent upon such cueing (p. 21).

In other words, rumination refers to conscious thoughts which are recurrent and are not based on the demands of the present environment. At the same time, rumination may not always be driven by internal cues alone, and in many cases, is not. Martin and Tesser (1996) provided the example of a woman in a grocery store who smells baby powder as she walks past the aisle containing baby products and begins to think about her goal of having a baby. Despite the fact that the present environment does not inherently demand her to think of this, nor facilitate or hinder her progress toward this goal, the smell is enough to trigger ruminative thoughts with regard to this goal. Another example could involve an employee taking part in a meeting at work in which his or her colleague gives a brief presentation. This could trigger ruminative thoughts in the employee about their goal of giving a presentation at their next meeting, despite the meeting itself neither facilitating nor hindering progress toward this goal. Similarly, an employee may

witness a colleague receive praise or an award for their accomplishments. This could trigger ruminative thoughts in the employee about their goal of getting a raise or a promotion, despite their colleague's success neither facilitating nor hindering their own progress toward this goal.

At the same time, the goal progress theory of rumination also posits that the underlying mechanism of rumination is problematic progress toward one's goals (Martin & Tesser, 1996). Specifically, rumination occurs when an individual's progress toward their goals is threatened, but the goal is not abandoned, thus making goal-relevant thoughts more easily accessible. While threats to goal attainment often prompt negative thoughts, ruminative thoughts could also be directed toward problem solving, meaning making, and more. In this way, while ruminative thoughts can be unintentional, they may not necessarily be negative, unwelcome, or particularly disruptive or maladaptive. Moreover, Martin and Tesser (1996) explain that, based on this definition of rumination, ruminative thought can be positive or negative, and can be about the past, present, or future as long as the thought is recurrent around that theme and is not demanded by the present environment. Importantly, Martin and Tesser (1996) also note that research on unwanted, intrusive thoughts/rumination has been connected to sources of stress. This makes sense, particularly in light of the understanding that individuals tend to ruminate about goals that are important to them, or higher order goals, as problematic progress toward such goals can be particularly upsetting.

Rumination, Stress, and Health

Cropley (2011) made the distinction that rumination is only a problem when it poses consequences to one's health and well-being. Indeed, rumination is an important variable to consider in the context of health and well-being as it is commonly associated with sleep disturbance/low sleep quality (e.g., Berset et al., 2011; Syrek & Antoni, 2014; Cropley, Dijk, & Stanley, 2007; Syrek, Weigelt, Peifer, & Antoni, 2017; Querstret & Cropley, 2012; Vale-Hinz et

al., 2014; Van Laethem et al., 2019), lower heart rate variability (e.g. Cropley et al., 2017; Vale-Hinz et al., 2014), heightened cortisol secretion (Cropley, et al., 2015; McCullough et al., 2007), exhaustion (e.g., Kinnunen et al., 2019), acute and chronic fatigue (Querstret & Cropley, 2012), alcohol use (Frone, 2015), unhealthy eating behaviors (Cropley, et al., 2012), negative affect (Wang et al., 2013), safety behaviors (e.g. Burch & Barnes-Farrell, 2020) and much more. One explanation for this connection may reside in the perseverative cognition hypothesis.

According to Brosschot and colleagues (2006), the constructs of rumination and worry share the common mechanism of preservative cognition. Specifically, perseverative cognition is defined as "the repeated or chronic activation of the cognitive representation of one or more psychological stressors" (p. 114). The perseverative cognition hypothesis posits that perseverative cognition is a mechanism through which stressors may negatively impact individuals' health and well-being because it prolongs the stress response (i.e., affective and physiological activation). In other words, it is not the stressor itself that can have negative consequences for individual health and well-being, but rather the continued mental representations of the stressor (i.e., rumination) which prolongs the stress response and thus impedes recovery.

Recovery

Many stressors in life, from daily demands/job stressors to significant life experiences drain an individual's resources and thus require them to not only restore those resources, but to also return to normal levels of well-being/functioning (e.g., Hobfoll, 1989; Meijman & Mulder, 1998; Sonnentag & Fritz, 2007). In other words, recovery is the process of eliminating the strain associated with demands and stressful life events. While recovery is examined in complex ways within clinical contexts, in organizational psychology recovery is often examined in terms of four key recovery experiences uncovered by Sonnentag and Fritz (2007). These recovery

experiences include one or more of the following: control, mastery, relaxation, and psychological detachment. Control involves the ability to make choices, and in the context of recovery, encompasses an individual's freedom to choose how they will utilize their leisure time. Mastery experiences facilitate recovery by providing distraction from stressors and further provide opportunities for challenges which may bring on feelings of competence, self-efficacy, and facilitate the learning of new skills. Relaxation is described as a mental and physical state of low activation and positive affectivity. Relaxation may be brought on through meditation, leisure activities such as nature walks, listening to music, and more, and has been shown to reduce stress (see Sonnentag & Fritz, 2007). Finally, a particularly salient form of recovery for workers (and for this project) is psychological detachment, which involves mentally disengaging from the source of one's stress, such as work. This facilitates recovery by 'switching off' the demands to one's functional systems and thus enables the restoration of one's mental and physical resources. Research has demonstrated that psychological detachment, in particular, has strong associations with individual well-being (e.g., see Sonnentag & Fritz, 2007; Sonnentag & Fritz, 2015; Sonnentag et al., 2013).

The stressor-detachment model was established in light of recovery theories (such as the effort recovery model, Meijman & Mulder, 1998, and conservation of resources theory, Hobfoll, 1989) in order to specifically and comprehensively address how stressors at work impede psychological detachment from work during off-job time, and thus increase strain and negatively impact well-being (Sonnentag & Fritz, 2015). In other words, the central premise of the stressor-detachment model is that psychological detachment attenuates the relations between work-related stress and strain. For example, Sonnentag and colleagues (2013) demonstrated that psychological detachment mitigated the negative effects of workplace conflict on employee well-

being. This model is particularly relevant to consider in light of rumination because negative forms of rumination and psychological detachment are strongly, negatively correlated (e.g., r = -.55 in Demsky et al., 2019). In this way, ruminating about work may impede recovery by reducing one's ability to psychologically detach from work.

Rumination in Occupational Health and Industrial & Organizational Psychology Research

Given that much work surrounding employee well-being in occupation health psychology examines stressors and related strains, it is unsurprising that much of the research in this field examines rumination as a negative phenomenon. After all, to reiterate Cropley's (2011) helpful distinction, rumination is only a problem when it negatively impacts health and well-being. Thus, from a prevention and intervention standpoint, it makes sense to understand and explain rumination as a negative phenomenon in order to determine how best to prevent it and address it when occurs. Many studies in this area of the literature have thus focused on rumination as a mediator between stressors and related strains. For example, Berset and colleagues (2011) demonstrated that effort-reward imbalance and time pressure at work (stressors) were related to sleep impairment (strain) via rumination. Similarly, Syrek and colleagues (2017) demonstrated that the relation between unfinished work tasks (stressor) and sleep impairment (strain) was mediated by affective (negative) rumination. Building upon this work, Weigelt and colleagues (2018) conducted a daily diary study to examine how unfinished tasks at the end of the work week impacted work-related rumination during the weekend. They found that competence need satisfaction mediated the relation between unfinished tasks and work-related rumination, but that proactive work-behavior attenuated this effect. Thus, proactive work behavior was uncovered as a valuable potential target for behavioral interventions. This is just one example of a broader pattern of research exploring rumination as a negative phenomenon, as well as ways to reduce rumination and the negative effects of rumination.

Measurement of Rumination

Various measures have been developed in order to assess rumination across literature in psychology. Key differences are discussed throughout this section and a summary table is provided in Appendix A. Some brief measures of rumination in the occupational health literature focus on the negative association between rumination and psychological detachment. For example, the Irritation Scale developed by Mohr and colleagues (2006) is commonly used as an indicator of rumination (e.g., Perko et al., 2017). Specifically, like rumination, irritation often results from goal-discrepancies (e.g., Martin & Tesser, 1996), and rumination (referred to as cognitive irritation) is often considered an aspect of irritation, along with irritability (emotional irritation). More specifically, three items of the Irritation Scale deal specifically with cognitive irritation. These items are: *"I have difficulty relaxing after work," "Even at home I often think about my problems at work,"* and *"Even on my vacations I think about my problems at work."* Upon close examination of these items, they appear to conceptually reflect a lack of psychological detachment rather than rumination (or cognitive irritation) itself. Moreover, psychological detachment consists of mentally 'switching off' from work, whereas rumination deals with repetitive thoughts surrounding a common theme. These items reflect an inability to switch off from work—difficulty relaxing after work (recall also that relaxation is another form of recovery) and thinking about work during off-job time (at home and on vacation). While research has demonstrated that there is a strong negative correlation between psychological detachment and rumination, researchers have also argued that these constructs are theoretically and conceptually distinct (e.g., see Demsky et al., 2019). As such, the measurement of one of these constructs cannot fully account for the other. Furthermore, measures of rumination should strive for the upmost construct validity, that is the degree to which a test measures what purports to measure (e.g., Cronbach & Meehl, 1955).

Another measure created by McCullough and colleagues (2007) is based on the impact of events scale (Horowitz et al., 1979) and is particularly intended to capture rumination as passive and intrusive. Items on this scale are rated on the extent to which the participant experienced such "ruminative symptoms" (p. 127) within the past two weeks pertaining to a psychologically painful (non-traumatic) interpersonal transgression. Sample items from this measure include *"I could not stop thinking about what he/she did to me," "Thoughts and feelings about how he/she hurt me kept running through my head," "Images of the offense kept coming back to me," "I found it difficult to not think about the hurt that he/she caused me,"* and *"I found myself playing the offense over and over in my mind."* McCullough and colleagues (2007) found that such rumination was associated with higher levels of salivary cortisol. Importantly, while this measure has not been commonly utilized, nor referenced in recent literature, it highlights important themes of intrusive thinking, flashbacks, and reexperiencing attributed to rumination. Also notable regarding this measure is that such an approach to the assessment of rumination stemming from health psychology is also consistent with common approaches stemming from clinical psychology (to be discussed further in the following section).

Another common measure utilized in the occupational literature to assess rumination is the Work-Related Rumination Questionnaire (WRRQ; Cropley et al., 2012). This measure was developed in order to better understand recovery, or "unwinding" from work and has three distinct factors rated in terms of frequency from 1 (very seldom or never) to 5 (very often or always). The first factor is affective rumination, which captures "the emotional experience of not being able to switch off from work-related thoughts" (p. 25) and includes items such as *"Do you become tense when you think about work-related issues during your free time?" "Are you troubled by work-related issues when not at work?"* and *"Are you annoyed when you think about*

work-related issues when not at work?" The second factor is referred to as problem-solving pondering and is intended to capture how individuals think about issues pertaining to work while they are not at work. Sample items include *"in my free time, I find myself re-evaluating something I have done at my work"* and *"I find solutions to work-related problems in my free time."* The third factor, originally referred to as distraction, and more recently referred to as psychological detachment, or simply detachment (Cropley et al., 2012; Kinnunen et al., 2019), consists of how easily one is able to detach from work. Example items from this factor include *"Do you find it easy to unwind after work?"* and *"Do you leave work issues behind when you leave work?"* The present literature tends to only refer to the first two factors of this measure (affective rumination and problem-solving pondering; e.g., Firoozabadi et al., 2018; Vahle-Hinz et al., 2017; etc.).

Furthermore, many studies choose to selectively attend to the affective rumination factor of the WRRQ, in line with this literature's tendency to focus on rumination as a negative phenomenon (e.g., see Cropley et al., 2016; Cropley et al., 2017; Demsky et al., 2019; Van Laethem et al., 2019; Weigelt et al., 2019 for recent examples). While the affective rumination component of this measure has a negative valence, the problem-solving pondering component has a more positive valence as it is directed toward finding a solution to the source of one's ruminative thoughts. Examining rumination in this way may be limited for a number of reasons. First, the problem-solving pondering view of rumination may only have a positive valence when a solution is reached, or a plan to address the problem is established, thus stopping ruminative thoughts and enabling recovery to occur (see e.g., Cropley & Zijlstra, 2011). Conversely, if a solution or plan is not reached, ruminative thoughts are likely to be prolonged, and thus more likely to impede or delay recovery. In this way, problem-solving pondering may not always be a

positive form of rumination. Second, the affective rumination factor does not capture the possibility that an individual may ruminate about positive aspects of his or her work during off-job time. Further, the affective rumination factor may emphasize affect over ruminative thought, thus posing potential problems for construct validity. Third, neither factor captures whether or not such thoughts are brought on intentionally, or predominantly internally as Martin and Tesser (1996) would describe (to be discussed further in following sections).

The distinction between positive and negative ruminative thoughts are valuable in terms of predictive validity. For example, Cropley and colleagues (2016) demonstrated that work-related rumination, specifically affective (negative) rumination, is associated with deficits in executive functioning including finishing projects, fidgeting, memory, pursuing tasks in order, and feeling compelled to do things. Conversely, Vahle-Hinz and colleagues (2017) demonstrated that problem-solving pondering (which is typically positive) is associated with creativity at work. Moreover, positive thoughts about work/problem-solving pondering have been associated with work engagement (e.g., Flaxman et al., 2018; Kinnunen et al., 2017; Sonnentag & Fritz, 2015). However, it is also important to note that both positive and negative forms of rumination have demonstrated negative relations with detachment over time (e.g., Kinnunen et al., 2017). Additionally, research has demonstrated that people tend to engage in both positive and negative work-related rumination during their time off and thus suggests that positive and negative forms of rumination not only co-occur, but should also be examined together rather than separately, or one over the other (Casper et al., 2019).

Frone (2015) developed a measure to assess both positive and negative forms of rumination called the Negative and Positive Work Rumination Scale (NAPWRS). Specifically, this measure was developed in response to the general emphasis on rumination as a negative

phenomenon throughout literature in psychology. Citing Martin and Tesser's (1996) goal progress theory of rumination, Frone (2015) highlights that rumination may be positive or negative, and notes that rumination is typically viewed as a negative phenomenon in spite of this. Further, Frone (2015) discusses the hypothesis that alcohol use may be an escape from ruminative thoughts, particularly negative thoughts pertaining to work, by reducing an individual's attentional capacity. This highlights rumination as a negative phenomenon as individuals are driven to escape ruminative thoughts surrounding experiences with/at work. In contrast, Frone (2015) defines positive work rumination as "preoccupation with and repetitive thoughts focused on positive work experience that may extend beyond the workday" and distinguishes it from negative work rumination by highlighting that "repetitive thoughts about positive work experiences represent a pleasant and desirable cognitive process because they prolong exposure to the positive experiences and events" (p. 151). Furthermore, Frone (2015) demonstrated that while negative work rumination was positively related to heavy alcohol use, workday alcohol use, and after work alcohol use, positive work rumination was negatively related to heavy alcohol use and after work alcohol use. These findings highlight the value of distinguishing between positive and negative rumination for purposes of predictive validity, that is the degree to which a score on a measure predicts scores on a relevant criterion measure (e.g., Cronbach & Meehl, 1955).

The NAPWRS consists of eight items, half of which are positively worded, and the other half are negatively worded. All of the items on this measure are identical aside from the positive versus negative emphasis. Participants are asked to report the frequency with which they have these thoughts. Specifically, the negative work rumination items are: "*replay negative work events in your mind even after you leave work?*" "*find yourself preoccupied with the negative*

aspects of your job even after you leave work?" "*think back to the bad things that happened at work even when you're away from work?*" and "*keep thinking about negative things that happened at work even when you're away from work?*" Conversely, the positive work rumination items are as follows: "*replay positive work events in your mind even after you leave work?*" "*find yourself preoccupied with positive aspects of your job even after you leave work?*" "*think back to the good things that happened at work even when you're away from work?*" and "*keep thinking about the positive things that happened at work even when you're away from work?*"

It is important to note that while Martin and Tesser's (1996) definition of rumination includes that ruminative thoughts occur even in the absence of immediate environmental demands, they also note that environmental cues may still be present. Thus, the inclusion of "even after you leave work/when you're away from work" in the NAPWRS may go beyond an assessment of a lack of environmental demands to cross conceptual boundaries into the construct space of (a lack of) psychological detachment.

It is also important to note that one can ruminate about negative work experiences while at work so long as the work environment is not requiring such thoughts. For example, an employee may think about a negative interaction he or she had with a customer while in the break room at work. Similarly, an employee could be ruminating about an unfinished task while in a meeting at work, or while working on another work-related task. Recent evidence of this phenomenon has been uncovered in Newton and colleagues' (2020) examination of "attention residue" when transitioning between tasks. The same can be expected for positive work experiences. For example, an employee might ruminate about positive feedback he or she received from a colleague or manager while answering emails. In these examples, while thoughts

are not being demanded by the environment, the environment may at the same time serve as a cue for such ruminative thoughts. Therefore, while the inclusion of "even after you leave work/when you're away from work" is well intentioned to align with Martin and Tesser's (1996) definition of rumination, environmental demands are perhaps too situation-dependent and complex to be assessed in this way, particularly in light of the fact that environmental cues are often present even when demands are not. As such, rumination may be better distinguished by considering the intentionality behind the thoughts. The value of such an approach can be found upon examination of research progress surrounding rumination in the sub-discipline of clinical psychology.

Rumination in Clinical Psychology Research

Cann and colleagues (2011) note that much research in clinical psychology focuses on the negative implications of rumination, particularly in light of its connection to posttraumatic stress disorder (PTSD) symptomology, depression, worry, and more. However, they explain that rumination is simply defined as repetitive thought and liken it to meditation, pondering, or cognitively "chewing the cud" (p. 138). Citing Martin and Tesser's (1996) argument that rumination can also involve controlled thoughts directed toward problem-solving, Cann and colleagues (2011) make a case for a more neutral examination of rumination in order to enhance research. Specifically, they propose a distinction between two types of rumination—intrusive rumination and deliberate rumination.

Intrusive rumination is defined as "unsolicited invasions of one's cognitive world-thoughts about an experience that one does not choose to bring to mind" (Cann et al., 2011, p. 138). Intrusive thoughts are not only normal, but common in response to life events and/or stressors. At the same time, in the realm of clinical psychology, ruminative thoughts are also viewed as symptoms of distress. When viewed as symptoms of distress, such rumination is

associated with difficulty sleeping, flashbacks, re-experiencing, and more. However, intrusive rumination can occur in response to positive life experiences as well. Cann and colleagues (2011) provide the helpful example of the experience of meeting someone special and struggling to "get him/her out of your head" (p. 138). In the context of work, you might replay the compliments your boss gave you over and over in your head, or struggle to stop thinking about your recent promotion or success. Whether positive or negative, the key distinction with intrusive rumination is that such thoughts are *unsolicited*.

In contrast, deliberate rumination is defined as voluntary, intentional thoughts that are often directed toward understanding events and their implications, problem-solving, and more (Cann et al., 2011). In this way, deliberate rumination may be viewed as more positive in nature as it is associated with problem solving and meaning making. However, deliberate rumination may be negative if one intentionally directs their thoughts to dwell on negative experiences, or to think unproductively about problems they are experiencing. For example, if you do poorly on a project or presentation at work, you could consider what happened and how you could improve, in which case you would be deliberately, positively ruminating. On the other hand, you could dwell on how embarrassed you felt, the consequences of your poor performance, or catastrophize such as jumping to the conclusion that you will surely lose your job. In either case, the key distinction is that such thoughts are *intentional*.

Cann and colleagues (2011) developed the Event Related Rumination Inventory (ERRI) in order create a measure that distinguishes between intrusive and deliberate rumination in the context of a specific, highly stressful life event or experience, rather than stable tendencies or differences in cognitive processing such as need for cognition. For the development and validation of this inventory, Cann and colleagues (2011) drew from a sample of undergraduate

students who were screened based on the severity of a highly stressful event they reported. The event was determined to be highly stressful based on self-reported ratings of the impact of the event in terms of stress or feelings of fear/horror. Such experiences included the death of a close other, a serious personal medical problem or a serious medical problem of a close other, accident or injury of oneself or a close other, damage to one's residence, exposure to the threat of death or serious bodily harm, severe physical or sexual assault, witnessed severe assault of someone close, intimate partner violence, victim of crime, and more.

After the initial factor structure of the ERRI was determined, a second study was conducted in order to further examine the measure. Responses to the ERRI were examined cross-sectionally in two additional samples based on two different contexts: 1) immediately following the stressful event, and 2) the last couple of weeks following the highly stressful event. This was done in order to determine if there were differences in levels of intrusive vs. deliberate rumination directly following the event as compared to weeks later with the idea in mind that intrusive rumination should occur first, followed by deliberate rumination (although the study was not conducted in a longitudinal context). Moreover, this assessment worked to address the question of differences in ruminative thoughts immediately and retrospectively. The results ultimately indicated that while there were no major differences between the context of responding (i.e., immediately after the event or recently), both styles of rumination were slightly more prevalent in the group of participants who were asked to report their ruminative thoughts immediately after the event occurred.

Ultimately, Cann and colleagues (2011) demonstrated that the ERRI was not only able to distinguish between two different forms of rumination, but it was also able to predict outcomes of interest accordingly. Specifically, intrusive rumination was predictive of current distress

whereas deliberate rumination predicted Posttraumatic Growth (PTG), which represents positive psychological change following a significant event (see Tedeschi & Calhoun, 1996; Tedeschi et al., 2017). Similar findings have been demonstrated in more recent studies as well. For example, Blackburn & Owens (2016) demonstrated that higher levels of intrusive rumination are associated with higher levels of PTSD symptomology. Furthermore, the ERRI factors explained more variance in such outcome variables than did stable individual differences in rumination (Cann et al., 2011). This indicates that while stable individual differences in rumination are relevant, it is more important to consider how an individual is thinking in the present moment, or in light of a specific experience, event, or stressor. Along this line of thought, it is also relevant to note that Cann and colleagues (2011) suggest that it is likely that the level of intrusive thoughts in response to an experience will be predictive of the level of deliberate thoughts at a later point in time as the intrusive thoughts pave the way for individuals to further process their experiences, find solutions, and seek meaning and/or understanding. This highlights that, like positive and negative rumination, intrusive and deliberate ruminative thoughts are intertwined and thus should be examined together, rather than separately or one over the other.

Integrating Conceptualizations of Rumination Across Subdisciplines

At the same time, it may also be important to distinguish between positive and negative thoughts in the context of intrusive and deliberate rumination. Cann and colleagues (2011) note that there is a bias in the literature toward viewing rumination as intrusive, negative thinking, but suggest that intrusive rumination may also occur in response to positive experiences and could thus be positive in nature. Similarly, deliberate rumination may not always be positive, particularly if the duration or frequency of such rumination is disruptive of the recovery process, or if the individual deliberately ruminates about negative experiences or dwells on problems.

Therefore, it is interesting that Cann and colleagues (2011) do not examine this distinction in their measure and instead favor a "more neutral" reference to both styles of rumination (p. 153).

This avenue appears to be fruitful for future research in terms of not only incorporating perspectives in organizational psychology, but also contributing greater predictive validity to the measurement of rumination. Furthermore, such a revision is also supportive of Martin and Tesser's (1996) goal progress theory of rumination. Specifically, it is made clear by Martin and Tesser (1996) that rumination is not always a necessarily negative phenomenon and may in fact have positive implications (e.g., meaning making in the face of a stressful experience) and adaptive consequences in the pursuit of goal progress and attainment (e.g., problem-solving). Additionally, capturing the intentionality behind ruminative thoughts may replace the need to rely upon contextual assessments of one's environment. For example, deliberate rumination may capture underlying motivational processes toward goals, and whether or not such thoughts are helpful or a hindrance to addressing problematic goal progress. For example, in the context of general stress at work, or even a highly stressful life experience, whether one chooses to think about how he or she can find positive meaning from their experiences or chooses to dwell on his/her negative feelings likely has important implications for a host of outcomes, from health and well-being to success as work.

CURRENT RESEARCH

The purpose of the current research is to integrate the above outlined methods of assessing rumination stemming from the occupational health and clinical psychology literatures through the development and validation of a revised measure of rumination. Specifically, the revised measure is intended to assess deliberate-positive rumination, deliberate-negative rumination, intrusive-negative rumination, and intrusive-positive rumination. *Deliberate-positive* rumination will consist of voluntary, positive thoughts such as dwelling on the positive aspects of one's work experiences, finding positive meaning, and cultivating understanding. Conversely, *deliberate-negative* rumination will consist of voluntary, negative thoughts such as dwelling on the negative aspects of one's work experiences, examining the negative meaning behind one's work experiences, and working to understand the negative implications. On the other hand, *intrusive-negative* rumination will be comprised of content oriented toward unsolicited negative thoughts pertaining to work and work-related experiences, whereas *intrusive-positive* rumination is intended to capture positive thoughts surrounding work and work-related experiences that one does not choose to bring to mind. Each of these components of rumination are expected to represent distinct factors. Descriptive statistics for each form of rumination will also be explored. Specifically, it is expected that more negative forms of rumination (intrusive-negative and deliberate-negative) may be more prevalent than positive forms of rumination (intrusive-positive and deliberate-positive). It is also expected that intrusive-positive rumination will have the lowest frequency of reporting.

Hypothesis 1a. The facets of the revised measure of rumination (deliberate-positive rumination, deliberate-negative rumination, intrusive-positive rumination, and intrusive-negative rumination) will reflect four distinct factors and will demonstrate acceptable levels of internal consistency and independence.

Hypothesis 1b. The facets of the revised measure of rumination will vary in terms of average reporting with intrusive-positive rumination serving as the least reported form of rumination, representing the lowest average overall.

Construct Validity

Convergent Validity

Seeing as the revised measure of rumination draws from elements of rumination captured by the ERRI (e.g., intrusive vs. deliberate ruminative thoughts), the NAPWRS (e.g., positive and negative rumination), as well as the WRRQ (e.g., problem solving), it is expected that each of these measures will correlate moderately to strongly with the revised measure of rumination in accordance with with Cohen's (1988) commonly cited standards (i.e., generally coefficients of .20 can be considered small/weak, coefficients of .50 can be considered medium/moderate, and coefficients of .80 can be considered large/strong). It is important and relevant to note, however, that Campbell and Fiske (1959) stated, "tests can be invalidated by too high correlations with other tests from which they were intended to differ" (p. 81). More specific expectations are outlined as follows.

*Hypothesis 2*a. The deliberate-positive and deliberate-negative rumination components will demonstrate moderate to strong, positive correlations with the deliberate rumination factor of the ERRI.

Hypothesis 2b. The intrusive-positive and intrusive-negative rumination components will demonstrate moderate to strong, positive correlations with the intrusive rumination factor of the ERRI.

Hypothesis 2c. The deliberate-positive and intrusive-positive components of the revised measure of rumination will demonstrate moderate to strong, positive correlations with the positive rumination components of the NAPWRS.

Hypothesis 2d. The deliberate-negative and intrusive-negative components of the revised measure of rumination will demonstrate moderate to strong, positive correlations with the negative rumination components of the NAPWRS.

Hypothesis 2e. The affective rumination components of the WRRQ will demonstrate moderate to strong, positive correlations with the intrusive-negative component of the revised measure of rumination.

Hypothesis 2f. The problem-solving pondering component of the WRRQ will demonstrate moderate to strong, positive correlations with the deliberate-positive component of the revised measure of rumination.

Divergent Validity and Recovery

As previously mentioned, the psychological detachment component of recovery is commonly examined in the occupational health literature and is particularly important to consider with regard to rumination as the two constructs are almost mutually exclusive in that one may not be able to ruminate about work and detach from work simultaneously (e.g., r = -.55 in Demsky et al., 2019). As such, psychological detachment will be assessed in order to uncover evidence of divergent validity for the revised measure of rumination. Consistent with previous literature, it would be expected that psychological detachment will demonstrate negative correlations with rumination. However, it is expected that such correlations may be weaker than those found in previous literature as existing measures of rumination are often confounded with what appears to be references to psychological detachment. At the same time, the relation between rumination and other forms of recovery are important to consider as well. More specifically, even if one is unlikely to ruminate and experience recovery through psychological detachment, it may still be possible for recovery and rumination to co-occur when other forms of recovery such as control, mastery, and/or relaxation are considered.

It is also important to note that according to Campbell and Fiske (1959) validity values should be greater for convergent validity as compared to divergent validity. However, Campbell and Fiske (1959) also note that this requirement is frequently not met in the literature even when validity coefficients are substantial in size. As such, while the correlations pertaining to discriminant validity should be and are expected to be lesser than the correlations pertaining to convergent validity, there may be instances where this is not the case, consistent with existing literature. In this way, findings will be interpreted holistically with multiple criteria in mind including the requirement that convergent validity coefficients should be greater than divergent validity coefficients, as well as the requirement that measures should not be too highly correlated with tests from which they were intended to differ, and consistency with and contributions to existing theory and research pertaining to rumination.

Hypothesis 3a. Psychological detachment will demonstrate moderate, negative correlations with each of the components of the revised measure of rumination (deliberate-positive, deliberate-negative, intrusive-positive, and intrusive-negative).

Hypothesis 3b. The psychological detachment component of the WRRQ will demonstrate moderate, negative correlations with all components of the revised measure of rumination.

Hypothesis 3c. Psychological detachment will demonstrate strong, negative correlations with the affective rumination and problem-solving pondering components of the WRRQ.

Hypothesis 3d. Psychological detachment will demonstrate a strong, positive correlation with the psychological detachment component of the WRRQ.

Hypothesis 3e. The relaxation, mastery, and control components of recovery will demonstrate moderate, positive correlations with deliberate-positive and intrusive-positive rumination.

Predictive Validity

The distinctions included in the revised measure of rumination are intended to better distinguish between the nature of ruminative thoughts (i.e. intrusive vs. deliberate and positive vs. negative), and as a result it is expected that such components would be better able to predict relevant, and previously explored, outcomes of interest including job engagement, sleep, and fatigue, as well as additional important well-being related variables such as satisfaction with life, physical symptoms, and burnout. Importantly, such variables also highlight both positive and negative outcomes in affective, cognitive, physical, and health-related domains. More specifically, the predictive validity of the revised measure of rumination will be examined over and above the most commonly accepted and utilized measure of rumination within the industrial and organizational psychology and occupational health literatures—the WRRQ (Cropley et al., 2012). Not only is this measure more commonly utilized than the NAPWRS, but it is also more relevant for comparison purposes than the ERRI because the WRRQ pertains to work, in line with the revised measure of rumination.

Hypothesis 4a. The revised measure of rumination will predict satisfaction with life over and above the WRRQ.

Hypothesis 4b. The revised measure of rumination will predict job satisfaction over and above the WRRQ.

Hypothesis 4c. The revised measure of rumination will predict job engagement over and above the WRRQ.

Hypothesis 4d. The revised measure of rumination will predict emotional, cognitive, and physical work fatigue over and above the WRRQ.

Hypothesis 4e. The revised measure of rumination will predict burnout over and above the WRRQ.

Hypothesis 4f. The revised measure of rumination will predict sleep quality over and above the WRRQ.

Hypothesis 4g. The revised measure of rumination will predict physical symptoms over and above the WRRQ.

The following additional hypotheses pertain to the anticipated factors of the revised measure of rumination (i.e., deliberate-positive, deliberate-negative, intrusive-positive, and intrusive negative). Specifically, it is expected that each anticipated factor may have unique relations to the variables of interest. It is hypothesized that positive forms of rumination (deliberate-positive and intrusive positive) will be predictive of positive outcomes including life and job satisfaction, job engagement, and sleep quality whereas negative forms of rumination (deliberate-negative and intrusive negative) will be predictive of negative outcomes including fatigue, burnout, and physical symptoms. Importantly, in line with Cann and colleagues' (2011) argument that measures of rumination should assess ruminative thoughts themselves rather than traits, stable tendencies, or differences in cognitive processing such as need for cognition, it is expected that the revised measure of rumination will be predictive of positive and negative affect such that positive forms of rumination will predict positive affect whereas negative forms of rumination will predict negative affect.

Hypothesis 5a. Deliberate-positive rumination will positively predict life satisfaction.

Hypothesis 5b. Deliberate-positive rumination will positively predict job satisfaction.

Hypothesis 5c. Deliberate-positive rumination will positively predict job engagement.

Hypothesis 5d. Deliberate-positive rumination will positively predict sleep quality.

Hypothesis 5e. Deliberate-positive rumination will positively predict positive affect.

Hypothesis 6a. Intrusive-positive rumination will positively predict life satisfaction.

Hypothesis 6b. Intrusive-positive rumination will positively predict job satisfaction.

Hypothesis 6c. Intrusive-positive rumination will positively predict job engagement.

Hypothesis 6d. Intrusive-positive rumination will positively predict sleep quality.

Hypothesis 6e. Intrusive-positive rumination will positively predict positive affect.

Hypothesis 7a. Deliberate-negative rumination will positively predict emotional, cognitive, and physical work fatigue.

Hypothesis 7b. Deliberate-negative rumination will positively predict burnout.

Hypothesis 7c. Deliberate-negative rumination will positively predict physical symptoms.

Hypothesis 7d. Deliberate-negative rumination will positively predict negative affect.

Hypothesis 8a. Intrusive-negative rumination will positively predict emotional, cognitive, and physical work fatigue.

Hypothesis 8b. Intrusive-negative rumination will positively predict burnout.

Hypothesis 8c. Intrusive-negative rumination will positively predict physical symptoms.

Hypothesis 8d. Intrusive-negative rumination will positively predict negative affect.

METHODOLOGY

Item Development

The goal progress theory of rumination (Martin & Tesser, 1996), as well as existing rumination measures (ERRI, NAPWRS, and WRRQ) provided the foundation on which the initial pool of 40-items was generated (see Appendix B). Specifically, items were generated in order to capture the intentionality behind the thought (intrusive vs. deliberate, exemplified by the ERRI) as well as the valence of the thought (positive vs. negative, exemplified by the NAPWRS as well as the WRRQ). Importantly, careful attention was paid in order to generate items that 1) do *not* infer context (e.g., a specific event or while away from work) and instead refer to one's job in general, 2) focus on thought and not emotion, and 3) are not confounded with the construct of psychological detachment or other recovery experiences (relaxation, mastery, or control). In this way, the items of the revised measure integrated and revised approaches from three separate rumination measures—the ERRI, NAPWRS, and WRRQ in order to align most closely with Martin and Tesser's (1996) Goal Progress Theory of Rumination. For example, one of the intrusive rumination items on the ERRI reads "*I thought about the event when I did not mean to.*" This item was integrated with both the positive versus negative emphasis exemplified by the NAPWRS and WRRQ in order to generate two new items which read *"I thought about the* ***positive*** *aspects of my job when I did not mean to"* and *"I thought about the* ***negative*** *aspects of my job when I did not mean to."* In this way, both items reflect intrusive forms of rumination with one reflecting intrusive, negative rumination and the other reflecting intrusive, positive rumination.

This procedure was utilized for all items and ultimately led to the establishment of four unique components: deliberate-positive, deliberate-negative, intrusive-positive, and intrusive negative with 10-items intended to reflect each of these components. In order to assess the

content- and face-validity of each of these intended factors of rumination, as well as readability, expert ratings ($N = 10$) were obtained from graduate students (40%) and individuals with a PhD in psychology (60%).

Expert Ratings

More specifically, 40% of expert raters held a PhD in Industrial/Organizational Psychology, 30% were graduate students in Industrial/Organizational Psychology, 20% of expert raters held a PhD in Clinical Psychology, and 10% were graduate students in Clinical Psychology. The expert raters were provided with brief definitions and explanations for each of the revised components of rumination (i.e., deliberate-positive, deliberate-negative, intrusive-positive, and intrusive-negative). The expert raters were then asked to review each of the items and 1) indicate which domain they believed the item belonged to, 2) how well the item reflects the domain they selected, 3) the extent to which the item appeared to assess rumination, 4) readability, and 5) provide any additional feedback/comments.

Overall, the accuracy ratings were very high when it came to the domain of the item (average = 95% accuracy). Where any inaccuracies did occur, they only pertained to the intentionality behind the item (intrusive vs. deliberate) and never the valence (positive vs. negative). Readability was also positively endorsed across the 40-items with 95% of responses indicating good readability (70.25% "highly readable" and 24.75% "readable"). Only 5% of responses for item readability indicated "only small part readable" and no responses indicated that the items were "unreadable". However, content and face-validity ratings were much more varied. In cases where accuracy was lower, so were ratings of content and face validity. Notably, expert ratings from those from the discipline of Clinical Psychology tended to evaluate deliberate rumination items as poor reflections of that domain, despite perfect accuracy ratings for all deliberate items. Due to the fact that accuracy ratings were quite high, and the majority of

responses indicated favorable ratings for content validity, face, validity, and readability, it was challenging to identify systematic ways to improve the items. Instead, items were revised based on the additional qualitative feedback provided by the expert raters, which provided more concrete advice in terms of improving each individual item. The revised measure of rumination pre- and post-expert ratings is presented in Appendix B.

Measures

All measures utilized for the following studies are included in Appendix A through Appendix C.

Rumination

The Work-Related Rumination Questionnaire (WRRQ; Cropley et al., 2012), Negative and Positive Work Rumination Scale (NAPWRS; Frone, 2015), and the Event Related Rumination Inventory (ERRI; Cann et al., 2011) were included for evidence of predictive validity. These measures were previously discussed, are outlined in Appendix A, and presented fully in Appendix C.

The Intentionality and Valence of Work-Related Ruminations Questionnaire

The revised measure of rumination (The Intentionality and Valence of Work-Related Ruminations Questionnaire; IV-WRRQ) assessing deliberate-positive, deliberate-negative, intrusive-positive, and intrusive-negative rumination was also included on the survey. All items will be rated in terms of frequency from 0 (*never)* to 3 (*often*). This measure is presented in Appendix B.

Satisfaction with Life

Life satisfaction was assessed using Diener and colleagues' (1985) satisfaction with life scale. This measure is a 5-item scale designed to measure holistic cognitive judgements of one's life satisfaction. These items are rated on a Likert scale from 1 (*strongly disagree*) to 7 (*strongly*

agree). A sample item is "*so far, I have gotten the important things I want in life*." This measure, along with all of the following measures, are listed in Appendix C.

Job Satisfaction

Job satisfaction was assessed using the 3-item job satisfaction component of the Michigan Organizational Assessment Questionnaire (Cammann et al., 1983). Meta-analytic evidence has demonstrated that this measure is a construct-valid, reliable, global assessment of job satisfaction (Bowling & Hammond, 2008). Items are rated on a Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is "*all in all, I am satisfied with my job."*

Job Engagement

Job engagement was assessed using Rich and colleagues' (2010) measure of job engagement which captures the degree to which individuals invest their emotional, cognitive, and physical energy into their job performance. This measure contains a total of 18-items, with 6-items per domain. Sample items are as follows; "*I try my hardest to perform well on my job*" which represents physical engagement, "*I am enthusiastic in my job*" represents emotional engagement, and "*at work, I am absorbed by my job*" represents cognitive engagement. Each item is rated on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Work Fatigue

Work fatigue was assessed using the Three-Dimensional Work Fatigue Inventory (3D-WFI; Frone & Tidwell, 2015). This is a 16-item measure designed to assess the frequency with which individuals experience physical, mental, and emotional fatigue. For example, "*feel physically drained at the end of the workday*" represents physical fatigue, "*have difficulty thinking and concentrating at the end of the workday*" represents mental fatigue, and "*want to avoid anything that took too much emotional energy at the end of the workday*" represents emotional fatigue. Items are rated from 0 (*never*) to 4 (*everyday*).

Burnout

The work-related burnout component of the Copenhagen Burnout Inventory was utilized to assess work-related burnout (Kristensen et al., 2005). This measure consists of 7-items rated in terms of frequency from 0 (*never*) to 4 (*always*). A sample item is "*Are you exhausted in the morning at the thought of another day at work?*"

Sleep Quality

Sleep quality was assessed using Jenkins and colleagues' (1988) sleep quality measure. This measure consists of 4 self-reported items pertaining to perceptions of sleep quality over the past two weeks. Items are rated in terms of 1-3 days, 4-7 days, 8-14 days, 15-21 days, or 22-31 days. A sample item is "*woke up after your usual amount of sleep feeling tired and worn out.*"

Physical Symptoms

Physical symptoms were assessed using the Physical Symptoms Inventory (Spector & Jex, 1998). This inventory assesses physical symptoms over the past two weeks, including "*an upset stomach or nausea*," "*headache*," "*eye strain*," and more. These items are rated from 0 (*not at all*) to 4 (*every day*).

Recovery Experiences

In order to address recovery experiences including psychological detachment, relaxation, mastery experiences, and control during leisure time, participants were asked to complete the Recovery Experiences Questionnaire (Sonnentag & Fritz, 2007). Items are rated on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items are as follows: "*I don't think about work at all*" which represents psychological detachment, "*I take time for leisure*" represents relaxation, "*I seek out intellectual challenges*" represents mastery, and "*I determine for myself how I will spend my time*" represents control.

Positive and Negative Affect

The Positive and Negative Affect Schedule (PANAS; Watson & Clark, 1988) was utilized to assess both positive and negative affect. The scale consists of 20-items with 10-representing each factor (positive affect, and negative affect). Participants are presented with a series of words that describe feelings and emotions and are asks to report the extent to which they have experienced each feeling/emotion within the past two-weeks. Words representing positive affect include interested, enthusiastic, and inspired whereas words representing negative affect include scared, upset, and ashamed. Importantly, this measure has been successfully utilized in the context of various time frames including the during present moment, during the past few weeks, during the past year, on average, and more (Watson & Clark, 1988). Responses are rated from 1 (*very slightly or not at all*) to 5 (*Extremely*).

STUDY 1: INITIAL FACTOR STRUCTURE, ITEM RETENTION, VALIDITY AND RELIABILITY

Participants and Procedure

The purpose of Study 1 was to determine the initial factor structure and item retention for the revised measure of rumination as well as uncover initial evidence of validity and reliability in a sample of MTurk Workers who, at the time of the study, were employed for a minimum of 20-hours per week or more outside of MTurk Work (N = 151). Participants were recruited to complete two surveys separated by a two-week time interval (e.g., McCullough et al., 2007). In order to uncover evidence of predictive validity, surveys were administered at two separate time points to ensure an appropriate time lag between the predictor variables included on the first survey (i.e., rumination) and the criterion variables included on the following survey (Cronbach & Meehl, 1955). At time 1, participants were asked to provide demographic information and complete existing measures of rumination (the ERRI, WRRQ, NAPWRS) in order to uncover evidence of convergent validity. In order to address concerns regarding order effects, all of these measures were counter-balanced utilizing the counterbalancing procedure in Qualtrics which randomized the order of each of the rumination measures for each participant. Participants were also asked to complete measures of recovery, satisfaction with life, job satisfaction, job engagement, work fatigue, work-related burnout, sleep quality, positive and negative affectivity, and physical symptoms.

Participants were contacted via email two weeks later to complete the time 2 survey. At this time, participants were also asked to report any major stressful events that may have occurred since the last survey to reduce concerns regarding this potentially confounding variable. More specifically, previous research suggests that rumination may differ based on the recency of a highly stressful event or experience (Cann et al., 2011). The majority of the respondents

reported that they did *not* experience a significant or stressful event over the course of the two weeks between surveys (61.90%). However, when included as a control variable in the following regression analyses, it was not uncovered as a significant predictor, nor did it substantially alter the estimates of interest or their associated conclusions (as is common, see Sturman et al., 2021) and it was therefore excluded from the final models in favor of a more parsimonious model (Bernerth & Aguinis, 2016). Participants were asked to complete a measure of recovery, including psychological detachment (divergent validity), as well as relaxation, mastery, and control. Measures of satisfaction with life, job satisfaction, and job engagement, were also obtained to assess predictive validity in the affective domain. Similarly, a work fatigue measure was also administered to assess fatigue in the domains of emotional, cognitive, and physical fatigue. Work-related burnout was assessed to capture the degree of both physical and psychological fatigue/exhaustion that is specifically associated with an individual's work (Kristensen et al., 2005). In order to capture relevant health-related outcomes, self-reported sleep quality, and physical symptoms were also assessed.

Of the 151 participants who completed the first survey, 84.11% completed the second survey ($N = 127$) resulting in an attrition rate of 15.89%. Of the participants who completed both surveys, 50.40% were male and 49.60% were female. The average age of participants was approximately 40 ($M = 40.24$, $SD = 10.60$) and ranged from 22 to 68 years of age. The majority of participants did not identify as Hispanic or Latino (92.90%) and were predominantly white (81.90%) followed by black or African American (8.70%), Asian (3.90%), mixed race (2.40%), other (.80%), and a small number of participants declined to answer (2.40%). The majority of participants were married (55.90%), followed by single (21.30%), cohabitating (not married; 8.70%) divorced (7.10%), in a long-term relationship (not married or cohabitating; 6.30%), and

separated (.80%). The majority of participants resided in the United States (96.90%) and the rest of the participants lived in either Africa, Europe, Mexico, or South American (all .80%, respectively). Most participants reported living in a suburban area (53.50%) followed by urban (25.10%) and rural (21.30%). Household income prior to taxes for the previous year was reported as follows: $50,000 – $74,999 (29.90%), $100,000 – $149,999 (16.50%), $75,000 – $99,999 (15.70%), $35,000 – $49,999 (15.70%), $150,000 or more (8.70%), $25,000 - $34,999 (8.70%), and less than $25,000 (4.70%).

In terms of roles in industry, participants reported being trained professionals (22.20%), administrative staff members (19.80%), middle managers (18.30%), junior managers (15.90%), skilled laborers (8.70%), upper managers (4.80%), temporary employees (3.20%), self-employed or partner (2.40%), consultant (1.60%) researcher (.80%), or other (2.40%). On average, participants reported working approximately full-time (M = 39.66 hours per week, SD = 6.11) and ranged from a minimum of 20 hours (part-time) to a maximum of 56 hours. On average, participants reported spending 13.35 hours doing MTurk work per week (SD = 8.35), and this ranged from a minimum of 1 hour to 40 hours.

Results

Factor Structure

An exploratory factor analysis was conducted using data from the first survey (N = 151). Specifically, IBM SPSS version 28 was utilized to conduct an exploratory factor analysis using oblique (direct oblimin) rotation to determine the factor structure of the revised measure of rumination (Hypothesis 1a). Oblique rotation was utilized because the anticipated factors can and should be correlated based on existing theory and research (e.g., Cann et al., 2011; Casper et al., 2019; Martin & Tesser, 1996). The number of factors was determined using the rotated factor loadings, eigenvalues, variance explained by factors, and scree plot. Factor loadings less than .3

were not included in the factor matrix, as is commonly accepted and practiced (e.g., Costello, 2005; Stevens, 2002; Tabachnick & Fidell, 2001, etc.). Items were retained if the primary factor loading was .40 or better (e.g., Stevens, 2002). Specifically, while researchers typically suggest retaining factor loadings of .50 or better (e.g., Costello, 2005), the nature of this study was supportive of a more liberal cutoff of .40 because the initial pool of items per measure was relatively small compared to other studies (i.e., 40 items versus hundreds of initial items; Matsunaga, 2010).

The Kaiser-Meyer-Olkin measure of sampling adequacy was .900 which is well above the minimum criterion of .500 indicating that the sample size of $N = 151$ was adequate for the exploratory factor analysis (Kaiser & Rice, 1974). Bartlett's Test of Sphericity was significant ($p < .001$) and Kaiser's criterion suggested that four factors should be extracted. This criterion may be appropriate for these data because the average communality after extraction is greater than .60 (average communality = .66; Kaiser & Rice, 1974). Jolliffe's criterion would suggest that five factors should be extracted, however, the scree plot highlights points of inflection at factor five, suggesting greater justification for retaining four factors.

Four factors were retained due to the convergence between the scree plot and Kaiser's criterion. Appendix D, Table 2 shows the factor loadings after rotation. The first factor represents intrusive-negative rumination, the second factor represents intrusive-positive rumination, the third factor represents deliberate-negative rumination, and the fourth and final factor represents deliberate-positive rumination. The structure matrix (see Appendix E, Table 3) highlights relationships between factors one and three, and two and four (i.e., intrusive-rumination—both positive and negative, and deliberate rumination—both positive and negative).

This is further evidenced by the strong correlations between factors one and three, and two and four (r = .56 and -.60, respectively).

Next, internal reliability was assessed using all of the items that loaded onto each factor. The intrusive-negative rumination factor consisted of item numbers 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 and 30 (11 items total), the intrusive-positive rumination factor consisted of item numbers 1, 3, 5, 7, 9, 11, 13, 15, 17, 19 and 31 (11 items total), the deliberate-negative rumination factor consisted of items 22, 24, 26, 32, 34, 36, 38 and 40 (8 items total), and finally, the deliberate-positive rumination factor consisted of items 21, 23, 25, 27, 29, 33, 35, 37 and 39 (9 items total). Item 28 was the only item out of the original 40 which did not have a primary factor loading of .40 or better and was therefore the only item excluded from the internal reliability analyses. Internal reliability for all of the factors was very high (Coefficient α = .96, .94, .90, .93 for intrusive-negative, intrusive-positive, deliberate-negative, and deliberate-positive rumination, respectively), suggesting that some of the items may be redundant (Streiner, 2003). To address this issue, the next step was to reduce the number of items.

Item Reduction

The first items to be removed were the items which loaded on to factors they were not originally written for/hypothesized to load onto (items 30 and 31), and/or had more substantial cross-loadings (i.e., cross loading > .30; items 24, 29, 31 and 40). Next, items with the highest correlations with other items (i.e., items 1, 2, 3, 4, 6, and 8) were removed. The structure matrix was also used to reduce the number of items because factors were highly correlated and therefore differences were observed between the pattern and structure matrices (Graham et al., 2003). Thus, both were helpful for purposes of interpretation as well as item reduction. Both the structure and factor correlation matrices highlighted clear relations between factors based on *valence* over *intentionality*. Specifically, factor correlations are as follows: intrusive-negative rumination

(Factor 1) and deliberate-negative rumination (Factor 3), r = .56; intrusive-positive (Factor 2) and deliberate-positive rumination (Factor 4), r = -.60; intrusive-negative (Factor 1) and intrusive-positive rumination (Factor 2), r = -.04; deliberate-negative (Factor 3) and deliberate-positive rumination (Factor 4), r = -.26, in line with the theoretical rational underlying item generation (see Discussion for explanation based on existing theory and empirical evidence). In light of, and in support of this understanding, items with structure matrix loadings larger than .30 on factors not in line with this understanding were removed (items 5, 21, 22, and 35; Graham et al., 2003; MacCallum et al., 2004; Raubenheimer, 2004; Stanton et al., 2002).

Finally, items were further reduced based on those with the weakest face-validity while also being mindful not to reduce too many items within a single factor. More specifically, researchers have recommended retaining a minimum of three to five items per factor: Raubenheimer (2004) recommends retaining a minimum of three items, MacCallum and colleagues (1999) recommend a minimum of three to four items, and Stanton and colleagues (2002) recommend a minimum of five items. In terms of face validity, item 12, "unsolicited, negative thoughts about my job caused me to relive my experience(s)" may be more closely aligned with the flashbacks/re-experiencing symptoms associated with PTSD Criterion B intrusion symptoms outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (5th et.; DSM-5; American Psychiatric Association, 2013) and was therefore removed along with its counter "unsolicited, positive thoughts about my job caused me to relive my experience(s)" (item 11). Similarly, item 9, "Positive thoughts, memories, or images of my job came to mind even when I did not want them" was removed due to possible emphasis on a lack of desire for positive thoughts, which may also be logically inconsistent as compared to the counter item (item 8) "Negative thoughts, memories, or images of my job came to mind even when I did not want

them." Finally, item 33 "I regularly thought about whether my relationships with others have changed for the better as a result of my job." was removed because it appeared to emphasize relationships over thoughts surrounding work. The final list of items for the revised measure of rumination, titled Intentionality and Valence of Work-Related Ruminations Questionnaire (IV-WRRQ), consists of 20-items with 5-items per factor, in accordance with Stanton and colleagues' (2002) recommendations (see Appendix F). Item reduction ultimately resulted in improved internal consistency reliability (i.e., reduced "redundancy"; Streiner, 2003; Coefficient α = .93, .91, .84, .89 for intrusive-negative, intrusive-positive, deliberate-negative, and deliberate-positive rumination, respectively). Taken together, the above findings are supportive of Hypothesis 1a. For a full summary of changes to the IV-WRRQ, from expert ratings to item reduction, see Appendix G.

Confirmatory Factor Analysis

A confirmatory factor analysis was then conducted in MPlus version 8.3 using responses from the time 2 survey (N = 127) in order to provide evidence of consistency in the factor structure of the IV-WRRQ across time (Putnik & Bornstein, 2016; van de Schoot et al., 2012). Fit statistics were examined using the following criteria: 1) the non-significance of the Chi-Square test, 2) Comparative Fit Index (CFI) and Tucker Lewis Index (TLI) of .90 or greater, 3) a Root Mean Square Error of Approximation (RMSEA) of .06 or less was deemed acceptable (e.g., MacCallum et al., 1996), and 4) a Standardized Root Mean Square Residual less than .08 was considered an indication of good fit (e.g., Hu & Bentler, 1999). Importantly, the fit of the CFA was determined by triangulating results across the different fit-indices. Standardized factor loadings of .6 and above were deemed acceptable and modification indices greater than 25 were iteratively freed to arrive at the final measurement model. Ultimately, the final model demonstrated adequate fit ($\chi^2(163) = 313.78$, $p < .001$, CFI = .90, TLI = .88, RMSEA = .09, 90%

CI [.07, .10], and SRMR = .08), particularly in light of limitations surrounding the relatively small sample size (e.g., Anderson, 1984; Jackson, 2001).

Average Reporting of Each Factor

IBM SPSS version 28 was utilized to obtain descriptive statistics for each of the four factors of rumination. Deliberate-positive rumination had the highest average at both time 1 and time 2 ($M = 6.12$, $SD = 4.09$ and $M = 6.11$, $SD = 3.80$, respectively) followed by intrusive-negative rumination ($M = 5.01$, $SD = 4.03$ and $M = 5.09$, $SD = 3.93$ at time 1 and time 2, respectively), intrusive-positive rumination ($M = 4.56$, $SD = 3.93$ at time 2 and $M = 4.94$, $SD = 4.04$ at time 1), and deliberate-negative rumination ($M = 2.92$, $SD = 3.18$ at time 2 and $M = 2.70$, $SD = 3.04$ at time 1). Taken together, such findings provide partial support for Hypothesis 1b because while the facets of the IV-WRRQ *did* vary in terms of average reporting, deliberate-negative rumination had the lowest average overall, not intrusive-positive rumination (which had the second-lowest average).

Construct Validity

Convergent Validity. SPSS version 28 was utilized to conduct a series of Pearson's bivariate correlations to assess Hypotheses 2-3 addressing convergent and divergent validity. The full correlation table is provided in Appendix H, Table 5. Utilizing data from time 1, it was determined that the deliberate-positive and deliberate-negative rumination components of the IV-WRRQ demonstrated moderate, positive correlations with the deliberate rumination factor of the ERRI, in support of Hypothesis 2a ($r = .48$, $p < .001$ and $r = .36$, $p < .001$, respectively). Similarly, the intrusive-positive and intrusive negative rumination components demonstrated weak to moderate, positive correlations with the intrusive rumination factor of the ERRI, lending partial support to Hypothesis 2b ($r = .29$, $p < .001$ and $r = .41$, $p < .001$, respectively). Hypothesis 2c was fully supported as the deliberate-positive and intrusive-positive components

of the IV-WRRQ both demonstrated moderate to strong, positive correlations with the positive rumination component of the NAPWRS ($r = .48$, $p < .001$ and $r = .70$, $p < .001$, respectively). Similarly, Hypothesis 2d was also fully supported as the deliberate-negative and intrusive-negative rumination components demonstrated moderate to strong, positive correlations with the negative rumination component of the NAPWRS ($r = .37$, $p < .001$ and $r = .76$, $p < .001$, respectively). The affective rumination component of the WRRQ demonstrated a strong, positive correlation with the intrusive-negative component of the revised measure ($r = .76$, $p < .001$), in support of Hypothesis 2e. Similarly, the problem-solving pondering component of the WRRQ demonstrated a moderate, positive correlation with the deliberate-positive component of the IV-WRRQ ($r = .48$, $p < .001$), in support of Hypothesis 2f.

Divergent Validity and Recovery. The psychological detachment component of the WRRQ demonstrated weak, negative correlations with each component of the IV-WRRQ, however, only the relations between the psychological detachment component and the intrusive-positive and deliberate-positive rumination components reached marginal significance ($r = -.07$, $p = -.365$, $r = -.15$, $p = .063$, $r = -.13$, $p = .122$, $r = -.14$, $p = .078$ for intrusive-negative, intrusive-positive, deliberate-negative, and deliberate-positive rumination, respectively), thus ultimately failing to provide support for Hypothesis 3a.

The psychological detachment component of the Recovery Experiences Questionnaire only demonstrated a weak, negative correlation with the intrusive-positive component of the IV-WRRQ ($r = -.23$, $p = .05$), and failed to demonstrate significant correlations with the rest of the components of the IV-WRRQ ($r = -.15$, $p = .107$; $r = -.05$, $p = .596$; $r = -.17$, $p = .061$ for intrusive-negative, deliberate-negative, and deliberate-positive rumination, respectively) ultimately providing very little support for Hypothesis 3b. Additionally, the psychological

detachment component of recovery demonstrated moderate, negative correlations with the affective rumination and problem-solving pondering components of the WRRQ (r = -.38, p < .001 and r = -.44, p < .001, respectively), mostly supportive of Hypothesis 3c. Psychological detachment demonstrated a small, positive correlation with the psychological detachment component of the WRRQ (r = .23, p = .011), providing partial support for Hypothesis 3d. Finally, in terms of the rest of the recovery components (relaxation, mastery, and control), and deliberate-positive and intrusive-positive rumination, only mastery and deliberate-positive rumination (r = .23, p = .005) and mastery and intrusive-positive rumination (r = .20, p = .013) demonstrated weak, positive correlations, providing very little support for Hypothesis 3e.

Predictive Validity

A series of hierarchical multiple regression analyses were utilized using IBM SPSS version 28 to address Hypothesis 4 the predictive validity of the IV-WRRQ over and above the existing WRRQ. Importantly, for all of the following analyses, the predictor variables (WRRQ and IV-WRRQ) came from the Time 1 survey and the outcome variables came from the Time 2 survey (satisfaction with life, job satisfaction, job engagement, work fatigue, burnout, sleep quality, and physical symptoms). For all of the following analyses, the variance inflation factors (VIF) did not exceed 2.62, suggesting little bias of regression parameters or their standard errors due to multicollinearity (e.g., Bowerman & O'Connell, 1990; Menard, 1995; Myers, 1990). Additionally, the residual plots did not suggest any evidence of non-normality.

To address Hypothesis 4a, a hierarchical multiple regression analysis was conducted to determine whether the IV-WRRQ predicted satisfaction with life over and above the WRRQ. As such, the three factors of the WRRQ (affective rumination, problem-solving rumination, and detachment rumination) were entered at step one of the regression and the factors of the IV-WRRQ were entered at step two (intrusive-negative, intrusive-positive, deliberate-negative, and

deliberate-positive rumination). Results are reported in Appendix I, Table 6. The hierarchical multiple regression revealed that at step one, the WRRQ factors accounted for 23.20% of the variance in satisfaction with life, F (3,119) = 11.95, p<.001. At step two, introducing the IV-WRRQ explained an additional 6.10% of the variance and this change was significant, F (4, 115) = 2.49, p=.047, with deliberate-positive rumination in particular serving as a significant predictor (β=.24, p=.029). In sum, Hypothesis 4a received support.

Similarly, Hypothesis 4b that the revised measure of rumination would predict job satisfaction with the WRRQ was also testing using a hierarchical multiple regression analysis. Again, the three factors of the WRRQ were entered at step one of the regression and the factors of the IV-WRRQ were entered at step two. Results are reported in Appendix J, Table 7. The hierarchical multiple regression revealed that at step one, the WRRQ factors accounted for 29.00% of the variance in job satisfaction, F (3,119) = 16.21, p<.001. At step two, introducing the IV-WRRQ explained an additional 7.30% of the variance and this change was significant, F (4, 115) = 3.28, p=.014, with deliberate-negative rumination in particular serving as a significant predictor (β=-.26, p=.008). In sum, Hypothesis 4b received support.

Three separate hierarchical regressions were conducted to examine if the IV-WRRQ could predict physical, emotional, and cognitive engagement over and above the WRRQ (Hypothesis 4c; Results are reported in Appendix K, Tables 8-10). In line with the procedures outlined above, the WRRQ factors were entered at step one and the factors of the IV-WRRQ were entered at step two. With regard to physical engagement, results revealed that the WRRQ factors accounted for 13.70% of the variance (F (3,119) = 6.30, p<.001), but the inclusion of the IV-WRRQ did not explain significantly more variance (ΔR^2 = .056, F (4, 115) = 1.98, p=.102). Similarly, the WRRQ factors accounted for 35.50% of the variance in emotional engagement (F

(3,119) = 21.84, p<.001), but the IV-WRRQ did not significantly add to this prediction (ΔR^2 = .036, F (4, 115) = 1.71, p=.153). Finally, the WRRQ factors accounted for 18.00% of the variance in cognitive engagement (F (3,119) = 8.70, p<.001), but again the IV-WRRQ did not significantly add to this prediction (ΔR^2 = .043, F (4, 115) = 1.60, p=.179). Thus, Hypothesis 4c received no support.

Hypothesis 4d stated that the IV-WRRQ would predict emotional, cognitive, and physical work fatigue over and above the WRRQ. However, while the WRRQ factors did predict emotional (R^2 = .213, F (3, 119) = 10.74, p<.001), cognitive (R^2 = .300, F (3, 119) = 16.98, p<.001), and physical (R^2 = .190, F (3, 119) = 9.32, p<.001) work fatigue, the WRRQ did not significantly add to the predictions of emotional (ΔR^2 = .055, F (4, 115) = 2.16, p=.078), cognitive (ΔR^2 = .024, F (4, 115) = 1.03, p=.394), and physical (ΔR^2 = .031, F (4, 115) = 1.16, p=.333) work fatigue, respectively. Therefore, Hypothesis 4d was unsupported. Results are reported in Appendix L, Table 11-13.

To address Hypothesis 4e, a hierarchical multiple regression analysis was conducted to determine whether the IV-WRRQ predicted burnout over and above the WRRQ. Results revealed that at step one, the WRRQ factors accounted for 37.60% of the variance in burnout, F (3,119) = 23.93, p<.001. However, at step two the introduction of the IV-WRRQ failed to add to the prediction of burnout, ΔR^2 = .036, F (4, 115) = 1.75, p=.114, thus failing to support Hypothesis 4e. Results are reported in Appendix M, Table 14.

Hypothesis 4f posited that the IV-WRRQ would predict sleep quality over and above the WRRQ. However, the results revealed that while the WRRQ factors accounted for 12.90% of the variance in sleep quality at step 1 (F (3,119) = 5.90, p<.001), the IV-WRRQ failed to

significantly account for additional variance at step 2 ($\Delta R^2 = .045$, F (4, 115) = 1.58, p=.185). As such, Hypothesis 4f was unsupported. Results are reported in Appendix N, Table 15.

Finally, Hypothesis 4g stated that the IV-WRRQ would predict physical symptoms over and above the WRRQ. The hierarchical multiple regression analysis revealed that the WRRQ factors accounted for 11.40% of the variance in physical symptoms at step 1 (F (3,119) = 5.13, p=.002) and the IV-WRRQ explained an additional 7.00% of the variance in physical symptoms at step 2 (F (4, 115) = 1.58, p=.05) with deliberate-negative rumination in particular serving as a significant predictor (β=.52, p=.011). Thus, Hypothesis 4g was supported. Results are reported in Appendix O, Table 16.

Deliberate-Positive Rumination. A series of regressions were utilized to test Hypothesis 5 regarding the predictive validity of the deliberate-positive rumination factor. Results are reported in Appendix P, Tables 17-23. Time 2 outcomes were regressed onto the deliberate-positive rumination factor from Time 1. Results revealed that deliberate-positive rumination positively predicted life satisfaction (R^2 = .032, F (1, 121) = 3.96, p=.049) in support of Hypothesis 5a. Hypothesis 5b was not supported as deliberate-positive rumination failed to predict job satisfaction (R^2 = .023, F (1, 121) = 2.87, p=.09). In term of Hypothesis 5c, deliberate-positive rumination only positively predicted emotional engagement (R^2 = .059, F (1, 121) = 7.58, p=.007) and failed to significantly predict physical engagement (R^2 = .010, F (1, 121) = 1.28, p=.260) and cognitive engagement (R^2 = .013, F (1, 121) = 1.61, p=.208) thus lending only partial support. However, Hypotheses 5d and 5e were fully supported with deliberate-positive rumination positively predicting both sleep quality (R^2 = .040, F (1, 121) = 5.04, p=.027), and positive affect (R^2 = .048, F (1, 121) = 6.12, p=.015), respectively.

Intrusive-Positive Rumination. A series of regressions were also utilized to test Hypothesis 6 regarding the predictive validity of the intrusive-positive rumination factor. Results are reported in Appendix Q, Tables 24-30. Time 2 outcomes were regressed onto the intrusive-positive rumination factor from Time 1. Hypothesis 6a stating that intrusive-positive rumination will positively predict life satisfaction was not supported (R^2 = .028, F (1, 121) = 3.43, p=.066). However, Hypothesis 6b which stated that intrusive positive rumination would positively predict job satisfaction (R^2 = .074, F (1, 121) = 9.72, p=.002) was supported. Hypothesis 6c received only partial support as intrusive-positive rumination positively predicted both emotional engagement (R^2 = .108, F (1, 121) = 14.60, p<.001) and cognitive engagement (R^2 = .041, F (1, 121) = 5.13, p=.025), but not physical engagement (R^2 = .010, F (1, 121) = 1.18, p=.280).

Intrusive-positive rumination also failed to predict sleep quality (R^2 = .027, F (1, 121) = 3.33, p=.071) contrary to what was predicted in Hypothesis 6d. Finally, Hypothesis 6e was supported as intrusive-positive rumination positively predicted positive affect (R^2 = .069, F (1, 121) = 8.99, p=.003).

Deliberate-Negative Rumination. A series of regression analyses were also utilized to test Hypothesis 7 regarding the predictive validity of the deliberate-negative rumination factor. Results are reported in Appendix R, Tables 31-36. Time 2 outcomes were regressed onto the deliberate-negative rumination factor from Time 1. Results revealed that deliberate-negative rumination positively predicted emotional fatigue (R^2 = .124, F (1, 121) = 17.20, p<.001), cognitive fatigue (R^2 = .113, F (1, 121) = 15.48, p<.001), and physical fatigue (R^2 = .059, F (1, 121) = 7.58, p=.007), in support of Hypothesis 7a. Hypothesis 7b was also supported with deliberate-negative rumination positively predicting burnout (R^2 = .147, F (1, 121) = 20.77, p<.001). Similarly, deliberate-negative rumination positively predicted physical symptoms (R^2 = .124, F (1, 121) = 17.18, p<.001), thus also supporting Hypothesis 7c. Finally, Hypothesis 7d positing that deliberate-negative rumination would positively predict negative affect was fully supported (R^2 = .090, F (1, 121) = 11.91, p<.001).

Intrusive-Negative Rumination. Finally, a series of regression analyses were utilized to test Hypothesis 8 regarding the predictive validity of the intrusive-negative rumination factor. Results are reported in Appendix S, Tables 37-42. Time 2 outcomes were regressed onto the intrusive-negative rumination factor from Time 1. Results revealed that intrusive-negative rumination positively predicted emotional fatigue (R^2 = .131, F (1, 121) = 18.21, p<.001), cognitive fatigue (R^2 = .185, F (1, 121) = 27.50, p<.001), and physical fatigue (R^2 = .061, F (1, 121) = 18.21, p<.001) thus fully supporting Hypothesis 8a. Hypothesis 8b was also fully

supported as intrusive-negative rumination positively predicted burnout (R^2 = .257, F (1, 121) = 41.79, p<.001), as was Hypothesis 8c regarding physical symptoms (R^2 = .062, F (1, 121) = 8.01, p<.005). Finally, Hypothesis 8d stating that intrusive-negative rumination would positively predict negative affect received support (R^2 = .118, F (1, 121) = 16.12, p<.001).

STUDY 2: VALIDITY AND RELIABILITY

Participants and Procedure

The purpose of Study 2 was to further uncover evidence of validity and reliability in a sample of 228 students of 18 years of age or older, who were working part-time or more, or who were employed and working part-time or more in February 2020 (before COVID-19 related layoffs). Students were recruited using the University of Central Florida's SONA system. Participants were asked to report demographic information including age, biological sex, class standing (e.g., freshman, sophomore, junior, senior, 5th year student or greater), average number of hours worked per week, job status, and job title. Age, job status, and number of hours worked per week were utilized as screening criteria to ensure that the participants met inclusion criteria for the study before proceeding to the rest of the survey. Participants were also asked to complete the IV-WRRQ pertaining to work in general.

The average age of Participants was approximately 21 (M = 21.10, SD = 5.89) and ranged from 18 to 63. The majority of the students were female (67.60%; 32.405 male). In terms of class standing, the majority of students were Freshman (48.40%) followed by Junior (24.40%), Senior (13.80%), Sophomore (11.10%), and fifth year student or greater (2.20%). The majority of students did not identify as Hispanic or Latino (72.00%). Furthermore, the majority of participants were white (67.60%) followed by black or African American (11.60%), mixed race (4.00%), a race other than what was listed (3.10%), Alaska Native or American Indian (.90%), Native Hawaiian or other Pacific Islander (.40%), and a small portion of participants declined to answer (4.00%).

Results

Confirmatory Factor Analysis

A confirmatory factor analysis was conducted in MPlus version 8.3 using responses to the SONA Survey ($N = 228$) in order to provide evidence of consistency in the factor structure of the IV-WRRQ across groups (Putnik & Bornstein, 2016; van de Schoot et al., 2012) and was based off of the same criteria outlined in Study 1. Specifically, fit statistics were examined using the following criteria: 1) the non-significance of the Chi-Square test, 2) Comparative Fit Index (CFI) and Tucker Lewis Index (TLI) of .90 or greater, 3) a Root Mean Square Error of Approximation (RMSEA) of .06 or less was deemed acceptable (e.g., MacCallum et al., 1996), and 4) a Standardized Root Mean Square Residual less than .08 was considered an indication of good fit (e.g., Hu & Bentler, 1999). Importantly, the fit of the CFA was determined by triangulating results across the different fit-indices. Standardized factor loadings of .6 and above were deemed acceptable and modification indices greater than 25 were iteratively freed to arrive at the final measurement model. The final model demonstrated good fit ($\chi^2(163) = 325.76$, $p < .001$, CFI = .92, TLI = .91, RMSEA = .07, 90% CI [.06, .08], and SRMR = .07), especially when considering the limitations surrounding the relatively small sample size (e.g., Anderson, 1984; Jackson, 2001).

Average Reporting of Each Factor

IBM SPSS version 28 was utilized to obtain information regarding internal consistency as well as descriptive statistics for each of the four factors of rumination. The IV-WRRQ demonstrated good to adequate internal consistency reliability (Coefficient α = .91, .88, .83, .79 for intrusive-negative, intrusive-positive, deliberate-negative, and deliberate-positive rumination, respectively), in support of Hypothesis 1a. Furthermore, in terms of frequency of reporting, deliberate-positive rumination had the highest average ($M = 7.72$, $SD = 3.60$) followed by

intrusive-negative rumination (M = 6.20, SD = 4.03), intrusive-positive rumination (M = 5.98, SD = 3.95), and deliberate-negative rumination (M = 4.38, SD = 3.52). These findings provide partial support for Hypothesis 1b because while the facets of the IV-WRRQ varied in terms of average reporting, deliberate-negative rumination had the lowest average overall, not intrusive-positive rumination (which had the second-lowest average). Notably, these findings are consistent with those of Study 1.

Construct Validity

Convergent Validity. SPSS version 28 was utilized to conduct a series of Pearson's bivariate correlations to assess Hypotheses 2-3 addressing convergent and divergent validity. The full correlation table is provided in Appendix T, Table 43. Results revealed that the deliberate-negative component of the IV-WRRQ was moderately, positively correlated with the deliberate rumination factor of the ERRI (r = .50, p < .001), but the deliberate-positive component of the IV-WRRQ only demonstrated a weak, positive correlation with the deliberate rumination factor of the ERRI (r = .36, p < .001), thus Hypothesis 2a was mostly supported. Similarly, the intrusive-negative rumination factor of the IV-WRRQ demonstrated a moderate, positive correlation with the intrusive rumination factor of the ERRI (r = .61, p < .001), but did not demonstrate a significant correlation with the intrusive-positive factor of the IV-WRRQ (r = .05, p = .428) thus lending only partial support to Hypothesis 2b.

Hypothesis 2c was fully supported as the deliberate-positive and intrusive-positive components of the IV-WRRQ both demonstrated moderate to strong, positive correlations with the positive rumination component of the NAPWRS (r = .47, p < .001 and r = .60, p < .001, respectively). Similarly, Hypothesis 2d was also fully supported as the deliberate-negative and intrusive-negative components demonstrated moderate to strong, positive correlations with the

negative rumination component of the NAPWRS ($r = .47$, $p < .001$ and $r = .68$, $p < .001$, respectively).

The affective rumination component of the WRRQ demonstrated a strong, positive correlation with the intrusive-negative component of the revised measure ($r = .68$, $p < .001$), in support of Hypothesis 2e. Similarly, the problem-solving pondering component of the WRRQ demonstrated a moderate, positive correlation with the deliberate-positive component of the IV-WRRQ ($r = .42$, $p < .001$), in support of Hypothesis 2f.

Divergent Validity and Recovery

The psychological detachment component of the WRRQ did not demonstrate any significant correlations with the factors of the IV-WRRQ ($r = .01$, $p = .934$ for intrusive-negative rumination, $r = .10$, $p = .132$ for intrusive-positive rumination, $r = .11$, p = .108 for deliberate-positive rumination, and $r = -.02$, p = .747 for deliberate-negative rumination), thus failing to provide support for Hypothesis 3a.

In terms of recovery, psychological detachment only demonstrated a weak, negative correlation with intrusive-negative and deliberate-negative rumination factors of the IV-WRRQ ($r = -.24$, $p < .001$ and $r = -.16$, $p = .016$, respectively) and failed to demonstrate significant correlations with the intrusive-positive and deliberate-positive rumination components of the IV-WRRQ ($r = -.07$, $p = .325$ and $r = -.10$, $p = .134$, respectively) ultimately providing partial support for Hypothesis 3b. Additionally, the psychological detachment component of recovery demonstrated weak, negative correlations with the affective rumination and problem-solving pondering components of the WRRQ ($r = -.24$, $p < .001$ and $r = -.26$, $p < .001$, respectively), in partial support of Hypothesis 3c. However, psychological detachment failed to demonstrate a significant correlation with the psychological detachment component of the WRRQ ($r = .07$, p = .271), thus failing to support Hypothesis 3d.

Finally, relaxation demonstrated small, negative correlations with intrusive-negative and deliberate-negative rumination (r = -.20, p = .003 and r = -.15, p = .026, respectively) but failed to demonstrate significant correlations with intrusive-positive and deliberate-positive rumination (r = .01, p = .891 and r = -.003, p = .968, respectively). Mastery failed to demonstrate significant correlations with any of the IV-WRRQ factors (r = -.12, p = .073 with intrusive-negative rumination, r = .07, p = .298 with intrusive-positive rumination, r = .11, p = .096 with deliberate-positive rumination, and r = -.07, p = .294 with deliberate-negative rumination). Lastly, control demonstrate weak, negative correlations with both intrusive-positive and deliberate-negative rumination (r = -.24, p < .001 and r = -.14, p = .039, respectively) but failed to demonstrate significant correlations with intrusive-positive and deliberate-positive rumination (r = .09, p = .198 and r = .08, p = .234, respectively). Taken together, these results only demonstrate minor support for Hypothesis 3e.

DISCUSSION

The purpose of the present studies was to provide an initial examination of the structure, validity, and reliability of a revised measure of rumination (the IV-WRRQ) which simultaneously integrates existing methods of assessing rumination from the occupational health and clinical psychology literatures while also more closely aligning with Martin and Tesser's (1996) Goal Progress Theory of Rumination. More specifically, the IV-WRRQ involved an integration and revision of existing approaches to the assessment of rumination by drawing from the ERRI, NAPWRS, and WRRQ with careful attention paid to the establishment of items which did not infer context, focused on thought and not emotion, and were not confounded with the construct of psychological detachment.

Across both studies, the facets of the revised measure of rumination did in fact demonstrate acceptable levels of internal consistency and independence. Moreover, the relations between the factors made sense in light of the theoretical rationale and existing measures informing the revised measure. Specifically, historically overwhelming emphasis on rumination as a negative phenomenon (in both research and practice), as well as Frone's (2015) helpful distinction between positive and negative forms of rumination may help to explain why stronger relations were observed between the factors of the same valence (i.e., intrusive-negative rumination, deliberate-negative rumination, and intrusive-positive and intrusive-negative rumination). Additionally, such distinctions may be more obvious than distinctions between deliberate and intrusive forms of rumination. In the presentation of the IV-WRRQ, "positive" and "negative" dictions were presented in boldface text whereas deliberate and intrusive distinctions were based more on the broader content of the items. However, it is important to keep in mind that this study was cross-sectional which may also help to explain why smaller relations were observed between factors pertaining to the same intentionality (i.e., intrusive and

deliberate). More specifically, Cann and colleagues' (2011) explanation that intrusive rumination paves the way for deliberate rumination suggests that intrusive forms of rumination may be more highly correlated with deliberate forms of rumination assessed at a later point in time.

Both studies also yielded good support for the construct validity of the IV-WRRQ. Specifically, across both studies, the IV-WRRQ demonstrated good initial evidence of convergent validity via moderate to strong relations with each of the measures which contributed to its development (the WRRQ, ERRI, and NAPWRS), as predicted. The IV-WRRQ also demonstrated good initial evidence of divergent validity. Specifically, across the two studies three of the IV-WRRQ factors (intrusive-negative, deliberate-negative, and intrusive positive rumination) demonstrated weak relations with the psychological detachment component of the WRRQ and none of the factors demonstrated significant relations with the psychological detachment component of recovery. At the same time, the psychological detachment factor of the WRRQ and the psychological detachment component of recovery did demonstrate a small, positive correlation. Such findings are contrary to previous research demonstrating a moderate, negative relation between rumination and psychological detachment (Demsky et al., 2019), but taken together serve as good initial evidence that the IV-WRRQ may be less confounded by overlap with the construct of psychological detachment compared to other measures of rumination (such as the WRRQ). This in turn demonstrates initial success of one of the key motives behind the design and development of the IV-WRRQ—to more closely align with Martin and Tesser's (1996) Goal Progress Theory of Rumination by avoiding overlap with psychological detachment, in addition to avoiding mention of context and emotion. It is also important to note that validity coefficients pertaining to divergent validity were in fact weaker

compared to those pertaining to convergent validity, which satisfies a requirement which is frequently not met in the broader literature (Campbell & Fiske, 1959).

Overall, the current research offered very little support for the notion that rumination may co-occur with other forms of recovery with only mastery and deliberate-positive rumination demonstrating a weak, positive relation. Deliberate-positive rumination may help to promote recovery via a sense of mastery because dwelling on the positive aspects of one's work experiences, finding positive meaning, and cultivating understanding may inherently provide some distraction from stressors and bring on feelings of competence and self-efficacy. However, while it may not be likely that rumination and such recovery experiences will co-occur, it may be possible for rumination to provide alternative avenues to recovery or support/promote positive outcomes in other ways. This brings us to the discussion of the predictive validity of the IV-WRRQ.

The IV-WRRQ was designed to better distinguish between the nature of ruminative thoughts and as such was expected to be better able to predict important positive and negative outcomes in affective, cognitive, physical, and health-related domains. While the IV-WRRQ did demonstrate incremental predictive validity over and above the WRRQ in the prediction of satisfaction with life, job satisfaction, and physical symptoms, it was unsuccessful in predicting job engagement, work fatigue, burnout, and sleep quality over and above the IV-WRRQ. In this way, the IV-WRRQ appeared to uniquely add to the prediction of broader, more distal, or cumulative outcomes. Specifically, overall satisfaction with one's life and job may take many months or years of experiences to determine and may be less likely to fluctuate daily as compared to job engagement, work fatigue, and even sleep quality. For example, Ritter and colleagues (2016) demonstrated that while job satisfaction did fluctuate across three time points

separated by six-week time intervals, job satisfaction tended to return to more moderate levels over time such that high levels of job satisfaction were typically followed by decreases, and low levels of job satisfaction tended to be followed by increases in job satisfaction. Conversely, variables such as work-fatigue have commonly been examined as a momentary state (e.g., Gross et al., 2011) and researchers have commonly examined sleep as an outcome in daily-diary research (e.g., Hülsheger et al., 2014; Pow et al., 2017, etc.).

At the same time, the IV-WRRQ factors were able to uniquely predict important outcomes in affective, cognitive, physical, and health related domains. Specifically, the deliberate-positive rumination factor positively predicted positive outcomes including life satisfaction, emotional engagement, sleep quality, and positive affect while the intrusive-positive rumination factor also positively predicted the positive outcomes of job satisfaction, emotional engagement, cognitive engagement, and positive affect. In particular, it is interesting that deliberate-positive rumination predicted life satisfaction while intrusive-positive rumination did not, and intrusive-positive rumination predicted job satisfaction while deliberate-positive rumination did not. One possible explanation may be that if someone is forcing themself to think about the positive aspects of their job, it may be because they are unhappy with their job to begin with and are productively working to change their perspective whereas if someone is happy with their job to begin with, positive thoughts about their job may come to mind more naturally and without such effort. Additionally, someone who actively chooses to think about the positive aspects of their job and find positive meaning in their job may also ultimately promote greater satisfaction with their life overall whereas someone who intrusively-positively ruminates about their job may not recognize such broader implications. The finding that intrusive-positive rumination predicted cognitive job engagement while deliberate-positive rumination did not

might suggest that a natural preoccupation with one's job may inherently promote the investment of cognitive energy (i.e., attention, concentration) into one's job.

The deliberate-negative rumination and the intrusive-negative rumination factors also demonstrated unique predictive validity. Specifically, both deliberate-negative and intrusive-negative rumination positively predicted the negative outcomes of emotional, cognitive, and physical work fatigue, burnout, physical symptoms, and negative affect. However, the fact that such findings are so consistent between the two domains may suggest that, when it comes to more proximal outcomes of interest, distinctions between intrusive-negative and deliberate-negative rumination may be less important. Seeing as rumination is inherently defined as "a class of conscious thoughts…" (Martin & Tesser, 1996, p. 7) it is logical that it should predict outcomes in cognitive domains. However, the finding that all of the IV-WRRQ factors of rumination predicted outcomes in emotional domains (e.g., emotional engagement, emotional fatigue) highlights the impact cognitions can have on emotional experiences. This distinction is a unique contribution of the IV-WRRQ seeing as previous researchers have often utilized measures which intertwine emotions and cognitions (e.g., the affective rumination component of the WRRQ which examines the emotional experience associated with ruminating about work).

Taken together, the above findings highlight the value and importance of examining each factor of the IV-WRRQ individually. Additionally, the finding that positive forms of rumination positively predicted positive affect and negative forms of rumination positively predicted negative affect is in line with the long-held notion that thought processes have important implications for the formation of affective states (e.g., Judge & Locke, 1993). Thus, such findings are also supportive of Cann and colleagues' (2011) argument that measures of

rumination should assess ruminative thoughts themselves rather than traits, tendencies, or differences in cognitive processing.

Limitations and Future Directions

While the first study did utilize a time lag in line with best practices for the assessment of predictive validity (Chronbach & Meehl, 1995), two-weeks may not be the ideal time lag for the variables examined. Previous studies examining rumination have varied greatly in terms of time lags examined with some studies utilizing daily diary methods (e.g., Syrek & Antoni, 2014; Yuan et al. 2018) some drawing from week-level approaches (e.g., Syrek et al., 2017; Weigelt et al., 2019), and others exploring year-long time lags (Kinnunen et al., 2017; Kinnunen et al., 2019; Perko et al., 2017; van Laethem et al., 2019). As such, future researchers should explore appropriate and ideal time lags for the study of rumination as well as appropriate time lags for important variables within the same nomological network (e.g., health and well-being related variables). Furthermore, researchers should employ longitudinal research designs to empirically assess whether intrusive-positive and intrusive-negative forms of rumination pave the way for subsequent deliberate-positive and deliberate-negative rumination, in line with Cann and colleagues' (2011) original theoretical explanation.

Future researchers could also examine if the factors of the IV-WRRQ also help to explain connections between stressors and strains as demonstrated in previous literatures (e.g., Berset et al., 2011; Syrek et al., 2017). Given the present findings that rumination may not co-occur with recovery experiences, a next step would be to explore whether positive forms of rumination (deliberate and intrusive) in addition to negative forms of rumination (deliberate and intrusive) mediate the relations between relevant stressors and strains. Given the present research findings that positive forms of rumination (both deliberate and intrusive) were able to predict positive outcomes, it would also be interesting to explore if such positive forms of rumination may help

to explain the relations between positive events/experiences and positive outcomes. At the same time, such positive forms of rumination may be able to go a step further to explain positive outcomes in the face of stressors (e.g., posttraumatic growth; Cann et al., 2011; Tedeschi & Calhoun, 1996; Tedeschi et al., 2017). While the present study did demonstrate that each factor of the IV-WRRQ was able to predict important and relevant outcomes in affective, cognitive, physical, and health related domains in line with hypotheses, future researchers could consider examining all of the factors as they pertain to such outcomes to determine which factors are the strongest predictors. Additionally, future researchers should consider further evidence of predictive validity with regard to more distal as well as proximal outcomes. Finally, future researchers should also strive to continue to explore the structure, validity, and reliability of the IV-WRRQ among diverse populations and across diverse contents of work.

CONCLUSION

In conclusion, the present research was successful in its purpose to develop and provide initial evidence of the validity and reliability of a revised measure of rumination which is more strongly rooted in theory. Specifically, the IV-WRRQ demonstrated good evidence of reliability, convergent validity, divergent validity, and predictive validity across two separate studies. As such, the IV-WRRQ contributes to existing literature by providing a measurement tool which distinguishes between the intentionality and valence of ruminative thoughts, does not infer context or emotions, and is not confounded with the construct of psychological detachment.

APPENDIX A
EXISTING MEASURES OF RUMINATION

Table 1

Summary of Existing Measures of Rumination

Measure	**Conceptualization of Rumination**	**Sample Items**
Irritation Scale (Mohr et al., 2006)	Rumination considered an aspect of irritation (i.e., **cognitive irritation**)	*I have difficulty relaxing after work.*
		Even at home I often think about my problems at work.
		Even on my vacations I think about my problems at work.
Rumination Scale (McCullough et al., 2007)	Rumination conceptualized as passive, brooding, and typically intrusive Context is recent, psychologically painful yet non-traumatic interpersonal transgression	*I couldn't stop thinking about what he/she did to me.*
		Thoughts and feeling about how he/she hurt me kept running through my head.
		Strong feelings about what this person did to me kept bubbling up.
		Images of the offense kept coming back to me.
		I brooded about how he/she hurt me.
		I found it difficult not to think about the hurt that he/she causes me.
		I found myself playing the offense over and over in my mind.
		Even when I was engaged in other tasks, I thought about how he/she hurt me.
Work Related Rumination Questionnaire (Cropley et al., 2012)	**Affective rumination** Captures the emotional experience of not being able to stop work-related thoughts	*Do you become tense when you think about work-related issues during your free time?*
		Are you troubled by work-related issues when not at work?
		Are you annoyed when you think about work-related issues when not at work?
	Problem-solving pondering Captures how individuals think about issues pertaining to work while they are not at	*In my free time, I find myself re-evaluating something I have done at my work.*
		I find solutions to work-

Measure	Conceptualization of Rumination	Sample Items
	work	*related problems in my free time.*
	Psychological detachment Consists of how easily one is able to detach from work	*Do you find it easy to unwind after work?*
		Do you leave work issues behind when you leave work?
Negative and Positive Work Rumination Scale (Frone, 2015)	**Positive work rumination** Preoccupation with, and repetitive thoughts focused on positive work experiences that may extend beyond the workday	How often do you…
		Replay positive work events in your mind even after you leave work?
		Find yourself preoccupied with positive aspects of your job even after you leave work?
		Think back to the good things that happened at work even when you're away from work?
		Keep thinking about the positive things that happened at work even when you're away from work?
	Negative work rumination Preoccupation with, and repetitive thoughts focused on negative work experiences that may extend beyond the workday	*Replay negative work events in your mind even after you leave work?*
		Find yourself preoccupied with the negative aspects of your job even after you leave work?
		Think back to the bad things that happened at work even when you're away from work?
		Keep thinking about negative things that happened at work even when you're away from work?
Event Related Rumination Inventory (Cann et al., 2011)	**Intrusive rumination** Unsolicited invasions of one's cognitive world-thoughts about an experience that one does not choose to bring to mind.	*I thought about the event when I did not mean to.*
		Thoughts about the event came to mind and I could not stop thinking about them.
		I found myself automatically thinking about what

Measure	Conceptualization of Rumination	Sample Items
		happened.
	Deliberate rumination Voluntary, intentional thoughts often directed toward understanding events, their implications, problem solving, etc.	*I thought about whether I could find meaning from my experience.*
		I thought about whether I have learned anything as a result of my experience.
		I thought about the event and tried to understand what happened.

APPENDIX B
INTENTIONALITY AND VALENCE OF WORK-RELATED RUMINATIONS (IV-WRRQ)

Pre-Expert Ratings

Intrusive

1. I thought about the **positive** aspects of my job when I did not mean to.
2. I thought about the **negative** aspects of my job when I did not mean to.
3. **Positive** thoughts about my job came to mind and I could not stop thinking about them.
4. **Negative** thoughts about my job came to mind and I could not stop thinking about them.
5. **Positive** thoughts about my job distracted me or kept me from being able to concentrate.
6. **Negative** thoughts about my job distracted me or kept me from being able to concentrate.
7. I could not keep **positive** images or thoughts about my job from entering my mind.
8. I could not keep **negative** images or thoughts about my job from entering my mind.
9. **Positive** thoughts, memories, or images of my job came to mind even when I did not want them.
10. **Negative** thoughts, memories, or images of my job came to mind even when I did not want them.
11. **Positive** thoughts about my job caused me to relive my experience(s).
12. **Negative** thoughts about my job caused me to relive my experience(s).
13. Reminders of my job brought back **positive** thoughts about my experience(s).
14. Reminders of my job brought back **negative** thoughts about my experience(s).
15. I found myself automatically thinking about the **positive** aspects of my job.
16. I found myself automatically thinking about the **negative** aspects of my job.
17. Other things kept leading me to think about the **positive** aspects of my job.
18. Other things kept leading me to think about the **negative** aspects of my job.
19. I tried not to think about my job, but could not keep the **positive** thoughts from my mind.
20. I tried not to think about my job, but could not keep the **negative** thoughts from my mind.

Deliberate

21. I thought about whether I could find **positive** meaning from my job.
22. I thought about whether I found **negative** meaning from my job.
23. I thought about whether **positive** changes in my life have come from my job.
24. I thought about whether **negative** changes in my life have come from my job.
25. I forced myself to think **positively** about my job.
26. I forced myself to think **negatively** about my job.
27. I thought about whether I have learned anything **positive** as a result of my job.
28. I thought about whether I have learned anything **negative** as a result of my job.
29. I thought about whether my job has changed my beliefs about the world in a **positive** way.
30. I thought about whether my job has changed my beliefs about the world in a **negative** way.
31. I thought **positively** about what my job might mean for my future.
32. I thought **negatively** about what my job might mean for my future.
33. I thought about whether my relationships with others have changed **for the better** as a result of my job.
34. I thought about whether my relationships with others have changed **for the worse** as a result of my job.
35. I forced myself to think about my **positive** feelings about my job.
36. I forced myself to think about my **negative** feelings about my job.

37. I deliberately thought about how my job has **positively** affected me.
38. I deliberately thought about how my job has **negatively** affected me.
39. I thought **positively** about my job and tried to understand my experience(s).
40. I thought **negatively** about my job and tried to understand my experience(s).

Post-Expert Ratings (Revised Version Utilized for Study 1)

Study 1 Instructions: *Please read the following items carefully and respond with the frequency with which you have had the following thoughts about your job over the course of the past two weeks.*

Study 2 Instructions: *Please read the following items carefully and respond with the frequency with which you have had the following thoughts over the course of the past two weeks. If you have been furloughed/unemployed during the past two weeks, please respond according to the time you were most recently employed.*

Intrusive

1. I repeatedly thought about the **positive** aspects of my job when I did not mean to.
2. I repeatedly thought about the **negative** aspects of my job when I did not mean to.
3. **Positive** thoughts about my job came to mind and I could not stop thinking about them.
4. **Negative** thoughts about my job came to mind and I could not stop thinking about them.
5. **Positive** thoughts about my job kept me from being able to concentrate.
6. **Negative** thoughts about my job kept me from being able to concentrate.
7. I could not keep **positive** images or thoughts from entering my mind.
8. I could not keep **negative** images or thoughts form entering my mind.
9. **Positive** thoughts, memories, or images of my job came to mind even when I did not want them.
10. **Negative** thoughts, memories, or images of my job came to mind even when I did not want them.
11. Unsolicited, **positive** thoughts about my job caused me to relive my experience(s).
12. Unsolicited, **negative** thoughts about my job caused me to relive my experience(s).
13. Reminders of my job consistently brought back **positive** thoughts about my experience(s).
14. Reminders of my job consistently brough back **negative** thoughts about my experience(s).
15. I found myself automatically thinking about the **positive** aspects of my job.
16. I found myself automatically thinking about the **negative** aspects of my job.
17. Various things kept leading me to think about the **positive** aspects of my job.
18. Various things kept leading me to think about the **negative** aspects of my job.
19. Even though I tried not to think about my job, I could not keep the **positive** thoughts from my mind.
20. Even though I tried not to think about my job, I could not keep the **negative** thoughts from my mind.

Deliberate

21. I repeatedly thought about whether I could find **positive** meaning from my job.
22. I repeatedly thought about whether I found **negative** meaning from my job.
23. I took time to consider whether **positive** changes in my life have come from my job.

24. I took time to consider whether **negative** changes in my life have come from my job.
25. I consistently forced myself to think **positively** about my job.
26. I consistently forced myself to think **negatively** about my job.
27. I reflected on whether I have learned anything **positive** as a result of my job.
28. I reflected on whether I have learned anything **negative** as a result of my job.
29. I kept thinking about whether my job has changed my beliefs about the world in a **positive** way.
30. I kept thinking about whether my job has changed my beliefs about the world in a **negative** way.
31. I thought **positively** about what my job might mean for my future.
32. I thought **negatively** about what my job might mean for my future.
33. I regularly thought about whether my relationships with others have changed for the **better** as a result of my job.
34. I regularly thought about whether my relationships with others have changed for the **worse** as a result of my job.
35. I consistently forced myself to think about my **positive** feelings about my job.
36. I consistently forced myself to think about my **negative** feelings about my job.
37. I deliberately kept thinking about how my job has **positively** affected me.
38. I deliberately kept thinking about how my job has **negatively** affected me.
39. I thought **positively** about my job and tried to understand my experience(s).
40. I thought **negatively** about my job and tried to understand my experience(s).

Never = 0
Rarely = 1
Sometimes = 2
Often = 3

APPENDIX C
ADDITIONAL MEASURES

A. Event Related Rumination Inventory (Cann et al., 2011)

Please take the next few minutes to write about a recent, stressful experience you had pertaining to your job. Explain the nature of the event and the aspects you found to be the most stressful. Please keep this event in mind as you read and respond to the following items.

How long ago did this event occur? ____ (months) ____ (weeks) ____ (days)

After an experience like the one you reported, people sometimes, but not always, find themselves having thoughts about their experience even though they don't try to think about it. Indicate for the following items how often, if at all, you had the experiences described during the weeks immediately after the event (or in the last few weeks).

1. I thought about the event when I did not mean to.
2. Thoughts about the event came to mind and I could not stop thinking about them.
3. Thoughts about the event distracted me or kept me from being able to concentrate.
4. I could not keep images or thoughts about the event from entering my mind.
5. Thoughts, memories, or images of the event came to mind even when I did not want them.
6. Thoughts about the event caused me to relive my experience.
7. Reminders of the event brought back thoughts about my experience.
8. I found myself automatically thinking about what had happened.
9. Other things kept leading me to think about my experience.
10. I tried not to think about the event, but could not keep the thoughts from my mind.

After an experience like the one you reported, people sometimes, but not always, deliberately and intentionally spend time thinking about their experience. Indicate for the following items how often, if at all, you deliberately spent time thinking about the issues indicated during the weeks immediately after the event (or in the last few weeks).

1. I thought about whether I could find meaning from my experience.
2. I thought about whether changes in my life have come from dealing with my experience.
3. I forced myself to think about my feelings about my experience.
4. I thought about whether I have learned anything as a result of my experience.
5. I thought about whether the experience has changed my beliefs about the world.
6. I thought about what the experience might mean for my future.
7. I thought about whether my relationships with others have changed following my experience.
8. I forced myself to deal with my feelings about the event.
9. I deliberately thought about how the event had affected me.
10. I thought about the event and tried to understand what happened.

Not at all = 0
Rarely = 1
Sometimes = 2
Often = 3

B. Work Related Rumination Questionnaire (Cropley et al., 2012)

Study 1 Instructions: *Please read the following items carefully and respond with the frequency with which you have had the following thoughts over the course of the past two weeks. If you have been furloughed/unemployed during the past two weeks, please respond according to the time you were most recently employed.*

Study 2 Instructions: *Please read the following items carefully and respond with the frequency with which you have had the following thoughts over the course of the past two weeks.*

1. Do you become tense when you think about work-related issues during your free time?
2. Are you annoyed by thinking about work-related issues when not at work?
3. Are you irritated by work issues when not at work?
4. Do you become fatigued by thinking about work-related issues during your free time?
5. Are you troubled by work-related issues when not at work?
6. After work I tend to think about how I can improve my work-related performance.
7. In my free time I find myself re-evaluating something I have done at work.
8. Do you think about tasks that need to be done at work the next day?
9. I find thinking about work during my free time helps me to be creative.
10. I find solutions to work-related problems in my free time.
11. Do you feel unable to switch off from work?
12. I am able to stop thinking about work-related issues in my free time.
13. Do you find it easy to unwind after work?
14. I make myself switch off from work as soon as I leave.
15. Do you leave work issues behind when you leave work?

Never = 0
Rarely = 1
Sometimes = 2
Often = 3

C. Negative and Positive Work Rumination Scale (Frone, 2015)

Study 1 Instructions: *How often do you (or did you)…*

Study 2 Instructions: *How often do you…*

1. Find yourself preoccupied with positive aspects of your job even after you leave work?
2. Replay negative work events in your mind even after you leave work?
3. Think back to the good things that happened at work even when you're away from work?

4. Find yourself preoccupied with the negative aspects of your job even after you leave work?
5. Keep thinking about the positive things that happened at work even when you're away from work?
6. Think back to the bad things that happened at work even when you're away from work?
7. Replay positive work events in your mind even after you leave work?
8. Keep thinking about the negative things that happened at work even when you're away from work?

Never = 0
Rarely = 1
Sometimes = 2
Often = 3

D. Satisfaction with Life Scale (Diener et al., 1985)

Below are five statements that you may agree or disagree with. Using the scale below, indicate your agreement with each item. Please be open and honest in your responding.

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far, I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Strongly disagree = 1
Disagree = 2
Slightly disagree = 3
Neither agree nor disagree = 4
Slightly agree = 5
Agree = 6
Strongly agree = 7

E. Job Satisfaction – Michigan Organizational Assessment Questionnaire (Cammann et al. 1983)

Study 1 Instructions: *Think about your own feelings about your present, or more recent job. Use the following scale to rate the extent to which you agree or disagree with each statement.*

Study 2 Instructions: *Think about your own feelings about your present job. Use the following scale to rate the extent to which you agree or disagree with each statement.*

1. In general, I like my job.
2. In general, I like working here.
3. All in all, I am satisfied with my job.

Strongly disagree = 1

Disagree = 2
Neither agree nor disagree = 3
Agree = 4
Strongly agree = 5

F. Job Engagement Scale (Rich et al., 2010)

Study 1 Instructions: *Please read each statement carefully and choose the option that best describes your agreement according to your current or most recent job.*

Study 2 Instructions: *Please read each statement carefully and choose the option that best indicates your agreement.*

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.

Strongly disagree = 1
Disagree = 2
Neither agree nor disagree = 3
Agree = 4
Strongly agree = 5

G. Three-Dimensional Work Fatigue Inventory (Frone & Tidwell, 2015)

Study 1 Instructions: *During the past two weeks (or when you were working), how often did you…*

Study 2 Instructions: *During the past two weeks, how often did you…*

1. Feel physically exhausted at the end of the workday?

2. Have difficulty engaging in physical activity at the end of the workday?
3. Feel physically worn out at the end of the workday?
4. Want to physically shut down at the end of the workday?
5. Feel physically drained at the end of the workday?
6. Want to avoid anything that took too much physical energy at the end of the workday?
7. Feel mentally exhausted at the end of the workday?
8. Have difficulty thinking and concentrating at the end of the workday?
9. Feel mentally worn out at the end of the workday?
10. Want to mentally shut down at the end of the workday?
11. Feel mentally drained at the end of the workday?
12. Want to avoid anything that took too much mental energy at the end of the workday?
13. Feel emotionally exhausted at the end of the workday?
14. Have difficulty showing and dealing with emotions at the end of the workday?
15. Feel emotionally worn out at the end of the workday?
16. Want to emotionally shut down at the end of the workday?
17. Feel emotionally drained at the end of the workday?
18. Want to avoid anything that took too much emotional energy at the end of the workday?

Never = 0
Once or twice = 1
Once or twice per week = 2
Most days = 3
Everyday = 4

H. Copenhagen Burnout Inventory (Kristensen et al., 2005)

Study 1 Instructions: *Please read each statement carefully and respond in terms of frequency according to your current or more recent job.*

Study 2 Instructions: *Please read each statement carefully and respond in terms of frequency.*

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

Never = 0
Seldom = 1
Sometimes = 2
Often = 3
Always = 4

I. Sleep Quality Measure (Jenkins et al., 1988)

To what extent did you experience the following symptoms during the past two weeks?

1. Had trouble falling asleep?
2. Had trouble staying asleep?
3. Woke up several times throughout the night?
4. Woke up after your usual amount of sleep feeling tired and worn out?

0-2 days
3-5 days
6-8 days
9-11 days
12-14 days

J. Physical Symptoms Inventory (Spector & Jex, 1998)

Over the past two weeks, how often have you experienced each of the following symptoms?

1. An upset stomach or nausea
2. A backache
3. Headache
4. Acid indigestion or heartburn
5. Eye strain
6. Diarrhea
7. Stomach cramps (not menstrual)
8. Constipation
9. Ringing in the ears
10. Loss of appetite
11. Dizziness

Not at all = 0
Once or twice = 1
Once or twice per week = 2
Most days = 3
Every day = 4

K. Recovery Experiences Questionnaire (Sonnentag & Fritz, 2007).

Study 1 Instructions: *Please read each statement carefully and respond in terms of agreement according to your current or most recent job.*
Study 2 Instructions: *Please read each statement carefully and respond in terms of agreement.*

1. I forget about work.
2. I don't think about work at all.

3. I distance myself from my work.
4. I get a break from the demands of work.
5. I kick back and relax.
6. I do relaxing things.
7. I use the time to relax.
8. I take time for leisure.
9. I learn new things.
10. I seek out intellectual challenges.
11. I do things that challenge me.
12. I do something to broaden my horizons.
13. I feel like I can decide for myself what to do.
14. I decide my own schedule.
15. I determine for myself how I will spend my time.
16. I take care of things the way that I want them done.

Strongly disagree = 1
Disagree = 2
Neither agree nor disagree = 3
Agree = 4
Strongly agree = 5

L. Positive and Negative Affect Schedule (Watson & Clark, 1988).

This scale consists of a number of words that describe different feelings and emotions. Read each item then select the response that best describes you. Indicate to what extent you have experienced the following feeling/emotion within the past two weeks.

1. Interested
2. Distressed
3. Excited
4. Upset
5. Strong
6. Guilty
7. Scared
8. Hostile
9. Enthusiastic
10. Proud
11. Irritable
12. Alert
13. Ashamed
14. Inspired
15. Nervous
16. Determined
17. Attentive
18. Jittery

19. Active
20. Afraid

Very slightly or not at all = 1
A little = 2
Moderately = 3
Quite a bit = 4
Extremely = 5

APPENDIX D
EXPLORATORY FACTOR ANALYSIS: PATTERN MATRIX

Table 2

Summary of Exploratory Factor Analysis Results for the IV-WRRQ

Item	Factor Loading			
	1	2	3	4
Factor 1: Intrusive-Negative Rumination				
4. Negative thoughts about my job came to mind and I could not stop thinking about them.	**.911**	-.056	-.059	-.069
10. Negative thoughts, memories, or images of my job came to mind even when I did not want them.	**.898**	.021	-.053	-.009
20. Even though I tried not to think about my job, I could not keep the negative thoughts from entering my mind.	**.859**	.132	.035	.044
14. Reminders of my job consistently brought back negative thoughts about my experience(s).	**.843**	.061	.004	.047
16. I found myself automatically thinking about the negative aspects of my job.	**.832**	-.060	.014	-.003
12. Unsolicited, negative thoughts about my job caused me to relive my experience(s).	**.801**	.190	.060	.138
6. Negative thoughts about my job kept me from being able to concentrate.	**.765**	-.070	.127	-.122
18. Various things kept leading me to think about the negative aspects of my job.	**.746**	-.048	.193	-.004
8. I could not keep negative images or thoughts from entering my mind.	**.745**	.108	.074	-.035
2. I repeatedly thought about the negative aspects of my job when I did not mean to.	**.744**	-.166	-.050	-.089
30. I kept thinking about whether my job has changed my beliefs about the world in a negative way.	**.430**	.151	.295	.047
Factor 2: Intrusive-Positive Rumination				
3. Positive thoughts about my job came to mind and I could not stop thinking about them.	-.002	**.885**	.090	-.124
15. I found myself automatically thinking about the positive aspects of my job.	.079	**.871**	-.079	-.050
11. Unsolicited, positive thoughts about my job caused me to relive my experience(s).	.109	**.803**	-.124	-.093
13. Reminders of my job consistently brought back positive thoughts about my experiences.	.102	**.791**	-.132	-.078
1. I repeatedly thought about the positive aspects of my job when I did not mean to.	-.093	**.981**	.033	.025
19. Even though I tried not to think about my job, I could not keep the positive thoughts from my mind.	.066	**.735**	-.006	-.155
17. Various things kept leading me to think about the positive aspects of my job.	-.073	**.686**	.075	-.209
7. I could not keep positive images or thoughts from entering my mind.	.085	**.625**	.087	-.071

Item	Factor Loading			
	1	2	3	4
9. Positive thoughts, memories, or images of my job came to mind even when I did not want them.	.004	**.603**	.074	-.234
5. Positive thoughts about my job kept me from being able to concentrate.	-.162	**.404**	.177	-.271
31. I thought positively about what my job might mean for my future.	-.107	**.400**	.017	-.387
Factor 3: Deliberate-Negative Rumination				
36. I consistently forced myself to think about my negative feelings about my job.	-.102	.118	**.856**	.034
26. I consistently forced myself to think negatively about my job.	-.109	.026	**.853**	.066
38. I deliberately kept thinking about how my job has negatively affected me.	.176	-.044	**.636**	-.106
32. I thought negatively about what my job might mean for my future.	.213	-.140	**.595**	.054
22. I repeatedly thought about whether I found negative meaning from my job.	.279	-.063	**.592**	-.193
34. I regularly thought about whether my relationships with others have changed for the worse as a result of my job.	.163	-.036	**.516**	-.055
40. I thought negatively about my job and tried to understand my experiences.	.376	-.226	**.470**	-.176
24. I took time to consider whether negative changes in my life have come from my job.	.355	-.187	**.449**	-.223
28. I reflected on whether I have learned anything negative as a result of my job.	.326	.170	.384	-.097
Factor 4: Deliberate-Positive Rumination				
35. I consistently forced myself to think about my positive feelings about my job.	-.038	-.036	-.020	**-.867**
25. I consistently forced myself to think positively about my job.	.073	-.070	.004	**-.829**
27. I reflected on whether I have learned anything positive as a result of my job.	.091	.058	-.044	**-.721**
23. I took time to consider whether positive changes in my life have come from my job.	.008	.130	.026	**-.706**
37. I deliberately kept thinking about how my job has positively affected me.	-.083	.207	.022	**-.693**
21. I repeatedly thought about whether I could find positive meaning from my job.	.087	.015	.147	**-.679**
39. I thought positively about my job and tried to understand my experience(s).	-.035	.243	-.078	**-.650**
29. I kept thinking about whether my job has changed my beliefs about the world in a positive way.	.027	.339	-.014	**-.486**
33. I regularly thought about whether my relationships with others have changed for the better as a result of my job.	-.098	.289	.155	**-.483**

N = 151. The extraction method was principal axis factoring with oblique (direct oblimin) rotation.

Factor loadings above .4 are in bold.

APPENDIX E
EXPLORATORY FACTOR ANALYSIS: STRUCTURE MATRIX

Table 3

Summary of Exploratory Factor Analysis Results for the IV-WRRQ

Item	Factor Loading			
	1	2	3	4
Factor 1: Intrusive-Negative Rumination				
5. Negative thoughts about my job came to mind and I could not stop thinking about them.	-.037	**.612**	.227	**-.541**
11. Negative thoughts, memories, or images of my job came to mind even when I did not want them.	.030	**.846**	.013	**-.564**
20. Even though I tried not to think about my job, I could not keep the negative thoughts from entering my mind.	**.862**	.081	**.514**	-.216
14. Reminders of my job consistently brought back negative thoughts about my experience(s).	**.834**	.002	**.464**	-.157
16. I found myself automatically thinking about the negative aspects of my job.	**.846**	-.096	**.460**	-.131
12. Unsolicited, negative thoughts about my job caused me to relive my experience(s).	**.804**	.072	**.466**	-.145
6. Negative thoughts about my job kept me from being able to concentrate.	**.854**	.000	**.603**	-.272
18. Various things kept leading me to think about the negative aspects of my job.	**.857**	-.063	**.602**	-.171
8. I could not keep negative images or thoughts from entering my mind.	**.788**	.110	**.508**	-.268
2. I repeatedly thought about the negative aspects of my job when I did not mean to.	**.746**	-.157	.354	-.116
30. I kept thinking about whether my job has changed my beliefs about the world in a negative way.	**.570**	.146	**.561**	-.215
Factor 2: Intrusive-Positive Rumination				
3. Positive thoughts about my job came to mind and I could not stop thinking about them.	-.004	**.860**	.145	**-.489**
15. I found myself automatically thinking about the positive aspects of my job.	.019	**.881**	.017	**-.562**
11. Unsolicited, positive thoughts about my job caused me to relive my experience(s).	.030	**.846**	.013	**-.564**
13. Reminders of my job consistently brought back positive thoughts about my experiences.	.020	**.815**	-.018	**-.533**
1. I repeatedly thought about the positive aspects of my job when I did not mean to.	-.105	**.764**	.014	**-.430**
19. Even though I tried not to think about my job, I could not keep the positive thoughts from my mind.	.061	**.837**	.137	**-.614**
17. Various things kept leading me to think about the positive aspects of my job.	-.009	**.806**	.115	**-.620**
7. I could not keep positive images or thoughts from entering my mind.	.116	**.688**	.221	**-.494**

Item	Factor Loading			
	1	2	3	4
9. Positive thoughts, memories, or images of my job came to mind even when I did not want them.	.064	**.759**	.193	**-.621**
5. Positive thoughts about my job kept me from being able to concentrate.	-.037	**.612**	.227	**-.541**
31. I thought positively about what my job might mean for my future.	-.022	**.607**	.039	**-.596**
Factor 3: Deliberate-Negative Rumination				
36. I consistently forced myself to think about my negative feelings about my job.	.360	.163	**.808**	-.244
26. I consistently forced myself to think negatively about my job.	.352	.046	**.777**	-.152
38. I deliberately kept thinking about how my job has negatively affected me.	**.547**	.066	**.776**	-.287
32. I thought negatively about what my job might mean for my future.	**.545**	-.160	**.662**	-.050
22. I repeatedly thought about whether I found negative meaning from my job.	**.651**	.073	**.782**	-.361
34. I regularly thought about whether my relationships with others have changed for the worse as a result of my job.	**.460**	.028	**.623**	-.202
40. I thought negatively about my job and tried to understand my experiences.	**.686**	-.117	**.689**	-.231
24. I took time to consider whether negative changes in my life have come from my job.	**.653**	-.034	**.689**	-.300
28. I reflected on whether I have learned anything negative as a result of my job.	**.552**	.242	**.602**	-.364
Factor 4: Deliberate-Positive Rumination				
35. I consistently forced myself to think about my positive feelings about my job.	.111	**.512**	.225	**-.846**
25. I consistently forced myself to think positively about my job.	.237	**.438**	.275	**-.809**
27. I reflected on whether I have learned anything positive as a result of my job.	.213	**.470**	.178	**-.755**
23. I took time to consider whether positive changes in my life have come from my job.	.164	**.539**	.199	**-.784**
37. I deliberately kept thinking about how my job has positively affected me.	.055	**.634**	.182	**-.810**
21. I repeatedly thought about whether I could find positive meaning from my job.	.307	**.419**	.359	**-.739**
39. I thought positively about my job and tried to understand my experience(s).	.047	**.616**	.067	**-.762**
29. I kept thinking about whether my job has changed my beliefs about the world in a positive way.	.093	**.651**	.184	**-.702**
33. I regularly thought about whether my relationships with others have changed for the better as a result of my job.	.072	**.593**	.246	**-.678**

N = 151. The extraction method was principal axis factoring with oblique (direct oblimin) rotation.

Factor loadings above .4 are in bold.

APPENDIX F
IV-WRRQ FINAL VERSION POST ITEM REDUCTION

Intrusive-Negative Rumination

1. **Negative** thoughts, memories, or images of my job came to mind even when I did not want them.
2. Reminders of my job consistently brought back **negative** thoughts about my experience(s).
3. I found myself automatically thinking about the **negative** aspects of my job.
4. Various things kept leading me to think about the **negative** aspects of my job.
5. Even though I tried not to think about my job, I could not keep the **negative** thoughts from my mind.

Intrusive-Positive Rumination

6. I could not keep **positive** images or thoughts from entering my mind.
7. Reminders of my job consistently brought back **positive** thoughts about my experience(s).
8. I found myself automatically thinking about the **positive** aspects of my job.
9. Various things kept leading me to think about the **positive** aspects of my job.
10. Even though I tried not to think about my job, I could not keep the **positive** thoughts from my mind.

Deliberate-Negative Rumination

11. I consistently forced myself to think **negatively** about my job.
12. I thought **negatively** about what my job might mean for my future.
13. I regularly thought about whether my relationships with others have changed for the **worse** as a result of my job.
14. I consistently forced myself to think about my **negative** feelings about my job.
15. I deliberately kept thinking about how my job has **negatively** affected me.

Deliberate-Positive Rumination

16. I took time to consider whether **positive** changes in my life have come from my job.
17. I consistently forced myself to think **positively** about my job.
18. I reflected on whether I have learned anything **positive** as a result of my job.
19. I deliberately kept thinking about how my job has **positively** affected me.
20. I thought **positively** about my job and tried to understand my experience(s).

Never = 0
Rarely = 1
Sometimes = 2
Often = 3

APPENDIX G
SUMMARY OF CHANGES TO IV-WRRQ FROM EXPERT RATINGS TO ITEM REDUCTION

Table 4

Summary of Changes to IV-WRRQ from Expert Ratings to Item Reduction

Item	Pre-Expert Ratings	Post-Expert Ratings	Post-Item Reduction
1	I thought about the **positive** aspects of my job when I did not mean to.	I repeatedly thought about the **positive** aspects of my job when I did not mean to.	
2	I thought about the **negative** aspects of my job when I did not mean to.	I repeatedly thought about the **negative** aspects of my job when I did not mean to.	
3	**Positive** thoughts about my job came to mind and I could not stop thinking about them.	**Positive** thoughts about my job came to mind and I could not stop thinking about them.	
4	**Negative** thoughts about my job came to mind and I could not stop thinking about them.	**Negative** thoughts about my job came to mind and I could not stop thinking about them.	**Negative** thoughts about my job came to mind and I could not stop thinking about them.
5	**Positive** thoughts about my job distracted me or kept me from being able to concentrate.	**Positive** thoughts about my job kept me from being able to concentrate.	
6	**Negative** thoughts about my job distracted me or kept me from being able to concentrate.	**Negative** thoughts about my job kept me from being able to concentrate.	
7	I could not keep **positive** images or thoughts about my job from entering my mind.	I could not keep **positive** images or thoughts from entering my mind.	I could not keep **positive** images or thoughts from entering my mind.
8	I could not keep **negative** images or thoughts about my job from entering my mind.	I could not keep **negative** images or thoughts from entering my mind.	
9	**Positive** thoughts, memories, or images of my job came to mind even when I did not want them.	**Positive** thoughts, memories, or images of my job came to mind even when I did not want them.	
10	**Negative** thoughts, memories, or images	**Negative** thoughts, memories, or images	

Item	Pre-Expert Ratings	Post-Expert Ratings	Post-Item Reduction
	of my job came to mind even when I did not want them.	of my job came to mind even when I did not want them.	
11	**Positive** thoughts about my job caused me to relive my experience(s).	Unsolicited, **positive** thoughts about my job caused me to relive my experience(s).	
12	**Negative** thoughts about my job caused me to relive my experience(s).	Unsolicited, **negative** thoughts about my job caused me to relive my experience(s).	
13	Reminders of my job brought back **positive** thoughts about my experience(s).	Reminders of my job consistently brought back **positive** thoughts about my experience(s).	Reminders of my job consistently brought back **positive** thoughts about my experience(s).
14	Reminders of my job brought back **negative** thoughts about my experience(s).	Reminders of my job consistently brought back **negative** thoughts about my experience(s).	Reminders of my job consistently brough back **negative** thoughts about my experience(s).
15	I found myself automatically thinking about the **positive** aspects of my job.	I found myself automatically thinking about the **positive** aspects of my job.	I found myself automatically thinking about the **positive** aspects of my job.
16	I found myself automatically thinking about the **negative** aspects of my job.	I found myself automatically thinking about the **negative** aspects of my job.	I found myself automatically thinking about the **negative** aspects of my job.
17	Other things kept leading me to think about the **positive** aspects of my job.	Various things kept leading me to think about the **positive** aspects of my job.	Various things kept leading me to think about the **positive** aspects of my job.
18	Other things kept leading me to think about the **negative** aspects of my job.	Various things kept leading me to think about the **negative** aspects of my job.	Various things kept leading me to think about the **negative** aspects of my job.
19	I tried not to think about my job, but could not keep the **positive** thoughts from my mind.	Even though I tried not to think about my job, I could not keep the **positive** thoughts from my mind.	Even though I tried not to think about my job, I could not keep the **positive** thoughts from my mind.
20	I tried not to think about my job, but could not keep the **negative** thoughts from my mind.	Even though I tried not to think about my job, I could not keep the **negative** thoughts from my mind.	Even though I tried not to think about my job, I could not keep the **negative** thoughts from my mind.
21	I thought about whether I could find **positive** meaning from my job.	I repeatedly thought about whether I could find **positive** meaning from my job.	
22	I thought about whether I found **negative** meaning from my job.	I repeatedly thought about whether I found **negative** meaning from my job.	
23	I thought about whether **positive** changes	I took time to consider whether **positive**	I took time to consider whether **positive**

Item	Pre-Expert Ratings	Post-Expert Ratings	Post-Item Reduction
	in my life have come from my job.	changes in my life have come from my job.	changes in my life have come from my job.
24	I thought about whether **negative** changes in my life have come from my job.	I took time to consider whether **negative** changes in my life have come from my job.	
25	I forced myself to think **positively** about my job.	I consistently forced myself to think **positively** about my job.	I consistently forced myself to think **positively** about my job.
26	I forced myself to think **negatively** about my job.	I consistently forced myself to think **negatively** about my job.	I consistently forced myself to think **negatively** about my job.
27	I thought about whether I have learned anything **positive** as a result of my job.	I reflected on whether I have learned anything **positive** as a result of my job.	I reflected on whether I have learned anything **positive** as a result of my job.
28	I thought about whether I have learned anything **negative** as a result of my job.	I reflected on whether I have learned anything **negative** as a result of my job.	
29	I thought about whether my job has changed my beliefs about the world in a **positive** way.	I kept thinking about whether my job has changed my beliefs about the world in a **positive** way.	
30	I thought about whether my job has changed my beliefs about the world in a **negative** way.	I kept thinking about whether my job has changed my beliefs about the world in a **negative** way.	
31	I thought **positively** about what my job might mean for my future.	I thought **positively** about what my job might mean for my future.	
32	I thought **negatively** about what my job might mean for my future.	I thought **negatively** about what my job might mean for my future.	I thought **negatively** about what my job might mean for my future.
33	I thought about whether my relationships with others have changed **for the better** as a result of my job.	I regularly thought about whether my relationships with others have changed for the **better** as a result of my job.	
34	I thought about whether my relationships with others have changed **for the worse** as a result of my job.	I regularly thought about whether my relationships with others have changed for the **worse** as a result of my job.	I regularly thought about whether my relationships with others have changed for the **worse** as a result of my job.
35	I forced myself to think about my **positive** feelings about my job.	I consistently forced myself to think about my **positive** feelings about my job.	
36	I forced myself to think about my	I consistently forced myself to think	I consistently forced myself to think about

Item	Pre-Expert Ratings	Post-Expert Ratings	Post-Item Reduction
	negative feelings about my job.	about my **negative** feelings about my job.	my **negative** feelings about my job.
37	I deliberately thought about how my job has **positively** affected me.	I deliberately kept thinking about how my job has **positively** affected me.	I deliberately kept thinking about how my job has **positively** affected me.
38	I deliberately thought about how my job has **negatively** affected me.	I deliberately kept thinking about how my job has **negatively** affected me.	I deliberately kept thinking about how my job has **negatively** affected me.
39	I thought **positively** about my job and tried to understand my experience(s).	I thought **positively** about my job and tried to understand my experience(s).	I thought **positively** about my job and tried to understand my experience(s).
40	I thought **negatively** about my job and tried to understand my experience(s).	I thought **negatively** about my job and tried to understand my experience(s).	

APPENDIX H
STUDY 1 CORRELATIONS: CONVERGENT AND DIVERGENT VALIDITY, TIME 1

Table 5

Descriptive Statistics and Correlations for Study 1, Time 1

	Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Intrusive-Negative Rumination	151	5.01	4.03	-													
2.	Intrusive-Positive Rumination	151	4.56	3.93	.06	-												
3.	Deliberate-Positive Rumination	151	6.12	4.09	.17*	.69**	-											
4.	Deliberate-Negative Rumination	151	2.70	3.04	.59**	.06	.19*	-										
5.	Intrusive Rumination	151	11.69	7.91	.41**	.29**	.30**	.25**	-									
6.	Deliberate Rumination	151	10.85	7.58	.30**	.42**	.48**	.36**	.59**	-								
7.	Positive Work Rumination	151	5.37	3.40	-.02	.70**	.56**	-.07	.28**	.32**	-							
8.	Negative Work Rumination	151	5.17	3.21	.76**	.000	.10	.37**	.43**	.31**	.09	-						
9.	Affective Rumination	151	5.26	4.11	.70**	-.06	.12	.47**	.37**	.33**	-.02	.72**	-					
10.	Problem-Solving Pondering	151	6.49	3.91	.21**	.54**	.45**	.16*	.36**	.44**	.59**	.30**	.20*	-				

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
11. Detachment Rumination	151	9.67	2.58	-.07	-.15	-.14	-.13	-.11	-.12	-.12	-.18*	-.15	-.22**	-			
12. Psychological Detachment	151	11.95	4.75	-.35**	-.32**	-.28	-.20*	-.32**	-.33**	-.33**	-.45**	-.38**	-.44**	.40**	-		
13. Relaxation	151	15.64	3.80	-.39**	-.06	-.13	-.40**	-.14	-.22**	.04	-.40**	-.43**	-.18**	.35**	.52**	-	
14. Mastery	151	15.17	3.57	-.25**	.20*	.23**	-.21*	.08	.12	.26**	-.17*	-.27**	.19*	.06	.03	.19*	-
15. Control	151	15.75	4.03	-.43**	.13	.06	-.39**	-.18*	-.08	.21*	-.33**	-.39**	.06	.11	.23**	.53**	.35**

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

APPENDIX I
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIBLES PREDICTING LIFE SATISFACTION

Table 6

Summary of Hierarchical Regression Analysis for Variables Predicting Life Satisfaction

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	-.80	.16	-.42**	-.56	.23	-.29*
Problem-Solving Rumination	.50	.18	.23**	.43	.21	.20*
Detachment Rumination	.60	.30	.19**	.60	.26	.19*
Intrusive-Negative Rumination				-.22	.25	-.11
Intrusive-Positive Rumination				-.19	.25	-.09
Deliberate-Negative Rumination				-.39	.25	-.15
Deliberate-Positive Rumination				.47	.21	.24*
R^2	.23** (.21)			.29* (.25)		
R^2 *Change*	.23**			.06*		

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

APPENDIX J
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIABLES PREDICTING JOB SATISFACTION

Table 7

Summary of Hierarchical Regression Analysis for Variables Predicting Job Satisfaction

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	-.34	.06	-.44**	-.19	.09	-.25*
Problem-Solving Rumination	.34	.07	.40**	.32	.08	.38**
Detachment Rumination	.10	.10	.08	.09	.10	.07
Intrusive-Negative Rumination				-.08	.09	-.10
Intrusive-Positive Rumination				.04	.09	.05
Deliberate-Negative Rumination				-.26	.10	-.26**
Deliberate-Positive Rumination				.04	.08	.05
R^2	.29** (.27)			.36* (.32)		
R^2 *Change*	.29**			.07*		

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

APPENDIX K
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIABLES PREDICING JOB ENGAGEMENT

Table 8

Summary of Hierarchical Regression Analysis for Variables Predicting Physical Engagement

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.12	.11	.09	-.01	.16	-.01
Problem-Solving Rumination	-.50	.12	-.36**	-.58	.14	-.42**
Detachment Rumination	-.36	.18	-.18*	-.33	.18	-.16
Intrusive-Negative Rumination				.06	.17	.05
Intrusive-Positive Rumination				.19	.17	.14
Deliberate-Negative Rumination				.38	.18	.23*
Deliberate-Positive Rumination				-.11	.15	-.09
R^2	.14** (.12)			.19 (.14)		
R^2 *Change*	.14**			.06		

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

Table 9

Summary of Hierarchical Regression Analysis for Variables Predicting Emotional Engagement

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.63	.12	.41**	.42	.17	-.27*
Problem-Solving Rumination	-.91	.13	-.52**	-.85	.15	-.49**
Detachment Rumination	-.29	.19	-.11	-.28	.19	-.11
Intrusive-Negative Rumination				.17	.19	.11
Intrusive-Positive Rumination				-.003	.19	-.002
Deliberate-Negative Rumination				.29	.19	.14
Deliberate-Positive Rumination				-.18	.16	-.11
R^2	.36** (.34)			.39 (.35)		
R^2 *Change*	.36**			.04		

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

Table 10

Summary of Hierarchical Regression Analysis for Variables Predicting Cognitive Engagement

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.23	.11	.18*	.13	.16	.11
Problem-Solving Rumination	-.56	.12	-.40**	-.56	.14	-.39**
Detachment Rumination	-.41	.18	-.20*	-.38	.18	-.18*
Intrusive-Negative Rumination				-.07	.17	-.06
Intrusive-Positive Rumination				-.02	.17	-.02
Deliberate-Negative Rumination				.42	.18	.25*
Deliberate-Positive Rumination				-.004	.15	-.003
R^2	.18** (.16)			.22 (.18)		
R^2 *Change*	.18**			.04		

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

APPENDIX L
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIABLES PREDICING WORK FATIGUE

Table 11

Summary of Hierarchical Regression Analysis for Variables Predicting Emotional Fatigue

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.83	.15	.45**	.74	.22	.40**
Problem-Solving Rumination	-.19	.17	-.09	-.40	.20	-.19*
Detachment Rumination	-.27	.25	-.09	-.20	258	-.07
Intrusive-Negative Rumination				-.03	.24	-.02
Intrusive-Positive Rumination				.16	.24	.08
Deliberate-Negative Rumination				.44	.25	.18
Deliberate-Positive Rumination				.23	.21	.12
R^2	.21** (.19)			.27 (.22)		
R^2 *Change*	.21**			.06		

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

Table 12

Summary of Hierarchical Regression Analysis for Variables Predicting Cognitive Fatigue

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.97	.14	.55**	.82	.20	.47**
Problem-Solving Rumination	-.30	.16	-.15	-.42	.18	-.22*
Detachment Rumination	-.08	.23	-.03	-.06	.23	-.02
Intrusive-Negative Rumination				.12	.22	.07
Intrusive-Positive Rumination				.07	.22	.04
Deliberate-Negative Rumination				.24	.23	.10
Deliberate-Positive Rumination				.13	.19	.07
R^2		.30** (.28)			.32 (.28)	
R^2 *Change*		.30**			.02	

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

Table 13

Summary of Hierarchical Regression Analysis for Variables Predicting Physical Fatigue

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.74	.15	.41**	.92	.22	.51
Problem-Solving Rumination	-.22	.17	-.11	-.40	.20	-.20
Detachment Rumination	-.41	.25	-.14	-.35	.25	-.12
Intrusive-Negative Rumination				-.30	.25	-.16
Intrusive-Positive Rumination				.38	.25	.19
Deliberate-Negative Rumination				.30	.25	.13
Deliberate-Positive Rumination				-.06	.21	-.03
R^2		.19** (.17)			.22 (.17)	
R^2 *Change*		.19**			.03	

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

APPENDIX M
SUMMARY OF HIERARHCIAL REGRESSION ANALYSIS FOR VARIABLES PREDICTING BURNOUT

Table 14

Summary of Hierarchical Regression Analysis for Variables Predicting Burnout

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.82	.10	.62**	.59	.14	.45**
Problem-Solving Rumination	-.30	.11	-.20**	-.28	.13	-.19*
Detachment Rumination	.08	.16	.04*	.08	.16	.04
Intrusive-Negative Rumination				.22	.16	.16
Intrusive-Positive Rumination				-.06	.16	-.04
Deliberate-Negative Rumination				.22	.16	.12
Deliberate-Positive Rumination				-.03	.13	-.02
R^2		.38** (.36)			.41 (.38)	
R^2 *Change*		.38**			.04	

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

APPENDIX N
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIABLES PREDICTING SLEEP QUALITY

Table 15

Summary of Hierarchical Regression Analysis for Variables Predicting Sleep Quality

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.21	.09	.21*	.10	.13	.10
Problem-Solving Rumination	.15	.10	.13	.06	.12	.05
Detachment Rumination	-.33	.15	-.19*	-.30	.15	-.18*
Intrusive-Negative Rumination				.08	.15	.08
Intrusive-Positive Rumination				.07	.14	.07
Deliberate-Negative Rumination				.22	.15	.16
Deliberate-Positive Rumination				.07	.12	.07
R^2	.13** (.11)			.18 (.12)		
R^2 *Change*	.13**			.05		

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

APPENDIX O
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR VARIABLES PREDICTING PHYSICAL SYMPTOMS

Table 16

Summary of Hierarchical Regression Analysis for Variables Predicting Physical Symptoms

	Model 1			Model 2		
Variable	*b*	*SE*	*β*	*b*	*SE*	*β*
Affective Rumination	.30	.13	.22*	.19	.18	.13
Problem-Solving Rumination	.17	.14	.10	.07	.16	.04
Detachment Rumination	-.40	.21	-.17	-.35	.20	-.15
Intrusive-Negative Rumination				-.07	.20	-.05
Intrusive-Positive Rumination				.03	.20	.02
Deliberate-Negative Rumination				.52	.20	.28*
Deliberate-Positive Rumination				.14	.17	.10
R^2	.11** (.09)			.18* (.13)		
R^2 *Change*	.11**			.07*		

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

APPENDIX P
SUMMARY OF RESULTS PERTAINING OT PREDICTING VALIDITY OF DELIBERATE-POSTIIVE RUMINATION FACTOR

Table 17

Summary of Regression Analysis for Deliberate-Positive Rumination Predicting Life Satisfaction

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	21.40	1.30		16.46	<.001
Deliberate-Positive Rumination	.35	.18	.18	1.99	.049

Table 18

Summary of Regression Analysis for Deliberate-Positive Rumination Predicting Job Satisfaction

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	10.61	.52		20.43	<.001
Deliberate-Positive Rumination	.12	.07	.15	1.69	.093

Table 19

Summary of Regression Analysis for Deliberate-Positive Rumination Predicting Emotional Engagement

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	14.97	1.04		14.39	<.001
Deliberate-Positive Rumination	-.39	.14	-.24	-2.75	.007

Table 20

Summary of Regression Analysis for Deliberate-Positive Rumination Predicting Physical Engagement

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	11.22	.86		13.11	<.001
Deliberate-Positive Rumination	-.13	.12	-.10	-1.13	.260

Table 21

Summary of Regression Analysis for Deliberate-Positive Rumination Predicting Cognitive Engagement

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	10.99	.87		12.62	<.001
Deliberate-Positive Rumination	-.15	.12	-.11	-1.27	.208

Table 22

Summary of Regression Analysis for Deliberate-Positive Rumination Predicting Sleep Quality

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	5.81	.70		3.36	<.001
Deliberate-Positive Rumination	.21	.09	.20	2.25	.027

Table 23

Summary of Regression Analysis for Deliberate-Positive Rumination Predicting Positive Affect

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	29.98	1.45		20.75	<.001
Deliberate-Positive Rumination	.48	.19	.22	2.47	.015

APPENDIX Q
SUMMARY OF RESULTS PERTAINING TO PREDICTIVE VALIDITY OF INTRUSIVE-POSITIVE RUMINATION FACTOR

Table 24

Summary of Regression Analysis for Intrusive-Positive Rumination Predicting Life Satisfaction

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	21.96	1.12		19.57	<.001
Intrusive-Positive Rumination	.34	.19	.17	1.85	.066

Table 25

Summary of Regression Analysis for Intrusive-Positive Rumination Predicting Job Satisfaction

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	10.31	.44		23.66	<.001
Intrusive-Positive Rumination	.22	.07	.27	3.12	.002

Table 26

Summary of Regression Analysis for Intrusive-Positive Rumination Predicting Emotional Engagement

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	15.14	.87		17.34	<.001
Intrusive-Positive Rumination	-.55	.14	-.33	-3.82	<.001

Table 27

Summary of Regression Analysis for Intrusive-Positive Rumination Predicting Physical Engagement

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	11.35	.74		15.35	<.001
Intrusive-Positive Rumination	-.28	.12	-.20	-2.27	.025

Table 28

Summary of Regression Analysis for Intrusive-Positive Rumination Predicting Cognitive Engagement

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	10.99	.87		12.62	<.001
Intrusive-Positive Rumination	-.15	.12	-.11	-1.27	.208

Table 29

Summary of Regression Analysis for Intrusive-Positive Rumination Predicting Sleep Quality

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	6.27	.60		10.40	<.001
Intrusive-Positive Rumination	.18	.10	.16	1.82	.071

Table 30

Summary of Regression Analysis for Intrusive-Positive Rumination Predicting Positive Affect

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	30.13	1.23		24.48	<.001
Intrusive-Positive Rumination	.61	.20	.26	3.00	.003

APPENDIX R
SUMMARY OF RESULTS PERTAINING TO PREDICTIVE VALIDITY OF DELIBERATE-NEGATIVE RUMINATION FACTOR

Table 31

Summary of Regression Analysis for Deliberate-Negative Rumination Predicting Emotional Fatigue

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	7.49	.88		8.49	<.001
Deliberate-Negative Rumination	.86	.21	.35	4.15	<.001

Table 32

Summary of Regression Analysis for Deliberate-Negative Rumination Predicting Cognitive Fatigue

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	9.96	.85		11.72	<.001
Deliberate-Negative Rumination	.79	.20	.34	3.94	<.001

Table 33

Summary of Regression Analysis for Deliberate-Negative Rumination Predicting Physical Fatigue

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	9.13	.91		10.06	<.001
Deliberate-Negative Rumination	.59	.21	.24	2.75	.007

Table 34

Summary of Regression Analysis for Deliberate-Negative Rumination Predicting Burnout

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	9.58	.63		15.24	<.001
Deliberate-Negative Rumination	.67	.15	.38	4.56	<.001

Table 35

Summary of Regression Analysis of Deliberate-Negative Rumination Predicting Physical Symptoms

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	3.13	.68		4.59	<.001
Deliberate-Negative Rumination	.66	.16	.35	4.15	<.001

Table 36

Summary of Regression Analysis for Deliberate-Negative Rumination Predicting Negative Affect

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	13.77	.82		16.80	<.001
Deliberate-Negative Rumination	.67	.19	.30	3.45	<.001

APPENDIX S
SUMMARY OF RESULTS PERTAINING TO PREDICTIVE VALIDITY OF INTRUSIVE-NEGATIVE RUMINATION FACTOR

Table 37

Summary of Regression Analysis for Intrusive-Negative Rumination Predicting Emotional Fatigue

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	6.44	1.05		6.15	<.001
Intrusive-Negative Rumination	.68	.16	.36	4.27	<.001

Table 38

Summary of Regression Analysis for Intrusive-Negative Rumination Predicting Cognitive Fatigue

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	8.22	.97		8.47	<.001
Intrusive-Negative Rumination	.77	.15	.43	5.24	<.001

Table 39

Summary of Regression Analysis for Intrusive-Negative Rumination Predicting Physical Fatigue

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	8.44	1.08		7.82	<.001
Intrusive-Negative Rumination	.46	.16	.25	2.79	.006

Table 40

Summary of Regression Analysis for Intrusive-Negative Rumination Predicting Burnout

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	7.96	.70		11.39	<.001
Intrusive-Negative Rumination	.69	.11	.51	6.46	<.001

Table 41

Summary of Regression Analysis for Intrusive-Negative Rumination Predicting Physical Symptoms

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	3.15	.84		3.76	<.001
Intrusive-Negative Rumination	.36	.13	.25	2.83	.005

Table 42

Summary of Regression Analysis for Intrusive-Negative Rumination Predicting Negative Affect

Variable	*b*	*SE*	*β*	*t*	*p*
Constant	12.64	.96		13.15	<.001
Intrusive-Negative Rumination	.59	.15	.34	4.02	<.001

APPENDIX T
STUDY 2 CORRELATIONS: CONVERGENT AND DIVERGENT VALIDITY

Table 43

Descriptive Statistics and Correlations for Study 2

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
16. Intrusive-Negative Rumination	228	6.20	4.03	-													
17. Intrusive-Positive Rumination	228	5.98	3.95	.06	-												
18. Deliberate-Positive Rumination	228	7.72	3.60	.23**	.62**	-											
19. Deliberate-Negative Rumination	228	4.38	3.51	.58**	.21**	.28**	-										
20. Intrusive Rumination	224	11.17	8.67	.62**	.05	.22**	.52**	-									
21. Deliberate Rumination	225	11.33	8.43	.51**	.15*	.36**	.50**	.76**	-								
22. Positive Work Rumination	228	6.58	3.31	-.01	.60**	.47**	.04	.06	.14*	-							
23. Negative Work Rumination	228	6.26	3.48	.68**	.06	.23**	.47**	.61**	.51**	.28**	-						
24. Affective Rumination	227	6.86	4.43	.68**	-.05	.14*	.48**	.59**	.50**	-.04	.62**	-					
25. Problem-Solving Pondering	228	6.81	3.81	.29**	.44**	.42**	.34**	.42**	.48**	.47**	.44**	.38**	-				

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
26. Detachment Rumination	227	8.98	3.18	.01	.10	.11	-.02	-.02	-.05	.14*	.06	-.02	.08	-			
27. Psychological Detachment	224	11.20	3.76	-.24**	-.07	-.10	-.16*	-.32**	-.29**	-.10	-.28**	-.24**	-.36**	.07	-		
28. Relaxation	225	14.37	4.59	-.20**	.10	-.003	-.15*	-.31**	-.25**	-.01	-.26**	-.23**	-.22**	.13	.47**	-	
29. Mastery	224	14.75	3.82	-.12	.07	.11	-.07	-.09	-.01	.02	-.14*	-.06	.07	.15	.19**	.44**	-
30. Control	224	15.18	4.00	-.24**	.09	.08	-.14*	-.24**	-.14*	.12	-.23**	-.21**	-.09	.12	.31**	.56**	.49**

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

APPENDIX U
UCF IRB APPROVAL LETTERS

UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138, IRB00012110
Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

March 3, 2021

Dear Jenna Beltramo:

On 3/3/2021, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study, Category 2(i)
Title:	"A Penny for Your Thoughts?": Thinking Patterns Among Workers
Investigator:	Jenna Beltramo
IRB ID:	STUDY00002814
Funding:	None
Grant ID:	None
Documents Reviewed:	• Faculty Advisor Scholarly-Scientific Review, Category: Faculty Research Approval; • Consent Form, Category: Consent Form; • Protocol, Category: IRB Protocol; • Recruitment: MTurk HIT, Category: Recruitment Materials; • Survey 1, Category: Survey / Questionnaire; • Survey 2, Category: Survey / Questionnaire

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Katie Kilgore
Designated Reviewer

UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138, IRB00012110
Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

August 31, 2020

Dear Jenna Beltramo:

On 8/31/2020, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study
Title:	A Penny for Your Thoughts?: Development and Validation of a Revised Measure of Rumination
Investigator:	Jenna Beltramo
IRB ID:	STUDY00002157
Funding:	None
Grant ID:	None
Documents Reviewed:	• Faculty Advisor Scholarly-Scientific Review, Category: Faculty Research Approval; • Explanation of Research, Category: Consent Form; • HRP 255 Penny for Your Thoughts, Category: IRB Protocol; • Recruitment Announcement Post, Category: Recruitment Materials; • Survey Instrument, Category: Survey / Questionnaire;

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

Due to current COVID-19 restrictions, in-person research is not permitted to begin unless you are able to follow the COVID-19 Human Subject Research (HSR) Standard Safety Plan with permission from your Dean of Research or submitted your Study-Specific Safety Plan and received IRB and EH&S approval. Be sure to monitor correspondence from the Office of

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