ACTIVE OR PASSIVE? AN EXAMINATION OF THE RELATIONSHIP BETWEEN THE VALENCE OF WORK EXPERIENCES AND CHOICE OF RECOVERY STRATEGY

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ABSTRACT

Regular work days place a strain on employees, depleting precious psychological and social resources that must be recovered if an individual is to be able to respond to demands and other stressors in the future. Recovery of resources results from either passive or active activities, but with little research examining the effect of positive and negative experiences at work and their impact on recovery. The present study investigated how positive or negative experiences at work impact one's choice of recovery strategy outside of work. It was hypothesized that positive experiences at work are positively correlated with a person's likelihood of engaging in active recovery due to gained resources, and vice versa. The sample for this study consisted of full-time employees with a regular working schedule (N = 190 *). The results showed that regardless of experiences, employees in this sample chose active recovery over passive recovery activities. The literature did not support the findings, which leads to interesting conclusions. Although the hypotheses were not supported with statistically significant results, the findings from this study contribute to the developing literature on occupational stress and recovery, probing questions about how and why employees choose certain forms of recovery over others, and questioning commonly held beliefs without evidence.

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CHAPTER I

INTRODUCTION

Employees regularly experience emotions and incidents at work that can impact the rest of their day either positively or negatively. The U.S. Department of Labor estimates that the average American spends about 7.5 hours at work each day, while only five waking hours are spent at home, or engaging in leisure activities (2011). Some employees, even while "off work," either physically or psychologically participate in work activities, instead of what they should be doing: recovering from work. Even if employees participate in leisure activities outside of work, the question remains as to whether these activities generate adequate recovery. Another important issue to address is how work impacts need for recovery and the individual's actual choice of recovery activity or method. The present study adds to the existing literature by examining the relationship between the decision to engage in leisure activities, the type of leisure activity chosen, and the adequacy of the resultant recovery.

Draining and Replenishing Resources

To address gaps in the research, it is necessary to investigate how resource demands drain employee's psychological, social, and job-related resources throughout the day, leaving little left over for use in non-work domains. In a typical work environment, resource demands tend to be physical, psychological, or social. Resource demands can be fulfilled with the use of resources. Physical resources can be activities such as walking to the copier or lifting boxes onto a truck

(Rook & Zijlstra, 2006). Examples of psychological and social resource demand include experiencing frustration associated with a complex task or a difficult coworker, work-related planning, or coordinating several pieces of a project. These resource demands have a significant influence on workers' physical and psychological health (Rook & Zijlstra, 2006). As a result, much of the research on recovering from physical and psychological demands at work is focused on replenishing resources spent to meet such demands.

Sonnentag and Fritz (2015) define recovery as a process of replenishing resources expended during stressful experiences at work. Based on this perspective on recovery, most researchers reference either the Conservation of Resources theory (Hobfoll, 1989; Seery, Corrigall, & Harpel, 2008) and/or the Effort-Recovery model (Mijman & Mulder, 1998). According to both theories, individuals have a finite daily reservoir of available resources. Resources are "those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (Hobfoll, 1989). Existing research indicates that the workday consumes these resources, which only recovery can restore (Seery et al., 2008).

Restoring resources is crucial to overall wellbeing, but there is a lack of clear guidance from existing research regarding which recovery strategies and specific activities are likely to lead to the strongest recovery outcomes. Sonnentag, Arbeus, Mahn, and Fritz (2014) state that employees having an opportunity to recover from resource demands, either passively or actively, exhibit better overall health, well-being, and performance than those employees who do not. Sonnentag et al. (2014) also found that employees in high stress situations who did not participate in leisure activities (recovery experiences) suffered from fatigue due to insufficient recovery. Thus a recovery paradox is illustrated – employees who need recovery most may be the least

likely to have the resources necessary to effectively recover. These findings and findings from other studies also indicate that demanding jobs lead to an increased risk of fatigue due to loss of resources (Rook & Zijlstra, 2006).

Fatigue is characterized by low levels of energy, high levels of irritability, and decreased motivation (Gross et al., 2011). When fatigue and its symptoms are chronic and associated with efforts to manage high levels of work-related demands, it is possible to develop burnout. Burnout is a serious consequence of high stress and inadequate recovery, defined as a state of being overly extended and emotionally exhausted (Zijlstra, Cropley, & Rydstedt, 2014). To avoid burnout, new resources must be acquired to replenish resources lost during the workday. Replenished resources aid in achieving work goals, personal growth, and employee development (Yoo & Arnold, 2014). Two theoretical frameworks have guided the majority of recovery-related research: the Effort-Recovery (E-R) model (Mijman & Mulder, 1998), and the Conservation of Resources theory (Hobfoll, 1989).

The *E-R model* provides a framework to clearly define and conceptualize resource loss and recovery. Mijman and Mulder (1998) developed the E-R model, which became the foundation for the study of workload. This model proposes that too many work demands lead to resource depletion, negatively impacting an employee both physiologically and psychologically. This effect is reversible when no additional demands are placed on the system, or when recovery occurs. After the effects have been reversed, the system may then return to homeostasis, the body's resting state, forming an individual's resources baseline. The homeostatic state is not a constant; but is rather an in-between state, where resources fluctuate.

Sonnentag et al. (2014) found that achieving homeostasis through recovery is an important mechanism for maintaining employee energy, engagement, and health in the face of high job

demands. However, some employees cannot return to homeostasis because the demands for resources is greater than those recovered. This phenomenon is typically referred to in the literature as a "need for recovery," leading to fatigue and eventually burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

The *COR theory* (Hobfoll, 1989) suggests that employees attempt to avoid this need for recovery, and so they conserve whatever resources they have. This theory focuses on our innate drive to conserve resources by conserving and obtaining more resources than are lost. Hobfoll further suggests there is a natural cycle of resource depletion and restoration. According to Hobfoll and Lilly (1993), resource depletion has a greater impact on physiological and psychological well-being than resource gain, highlighting the importance of obtaining and conserving positive resources. When too many resources are lost, stress, fatigue, and resource depletion may occur (Zijlstra et al., 2014). When resource depletion becomes a chronic stressor it causes prolonged stress on the body, leading to long-term physical effects including: burnout, lack of energy, irritability, feelings of "overload", frustration, and potentially catatonic states of being (Gommans, Jansen, Stynen, de Grip, & Kant, 2015; van Hooff, Geurts, Beckers, & Kompier, 2011).

The quality of a person's resource recovery is impacted by several factors, one of which is detachment, which Sonnentag et al. (2014) defined as mentally disengaging from work while at work, either by avoiding work activities, or thinking of something else. Detachment can also be seen as the ability to separate any personal emotions about the job from the demands of the job (Lewig & Dollard, 2003). Physical detachment does not equal psychological detachment. For instance, physically leaving work does not mean that the employee is psychologically detached;

they could be thinking about what happened at work that day, or mentally preparing for the next day.

There are both short- and long-term negative effects of an employee's inability to psychologically detach from the workplace. Sonnentag and Jelden (2009) found that lack of psychological detachment from work was a strong predictor of emotional exhaustion one year later. Volman, Bakker, and Xanthopoulou (2013) found that psychological detachment from work is essential for the psychological recovery process. Failure to psychologically detach from the workplace increases strain while decreasing well-being (Sonnentag et al., 2014). When employees are unable to detach from work, this may result in fatigue, exhaustion, and eventually burnout. Emotional exhaustion has also been associated with potentially harmful situations for the organization, including decreased in-role performance, voluntary turnover, decreased organizational commitment, and decreased job satisfaction (Wagner, Barnes, & Scott, 2014).

Active versus Passive Recovery

While the E-R and COR theoretical perspectives help to explain the link between stress and recovery (i.e., a cycle of resource draining and replenishing), questions remain about the means or mechanisms through which workers should recover and replenish resources. Two general recovery methods have been proposed: active and passive (Sonnentag & Jelden, 2009). Limited research has examined these two forms of recovery activity, though the literature expresses that people are able to better replenish their spent resources through active versus passive means.

Active recovery includes almost everything that dramatically increases a person's rate of physiological arousal. Such activities (e.g., exercise or housework) raise the level of endorphins,

causing a higher body temperature and increased secretion of noradrenalin, serotonin, and dopamine. The hormones secreted during active recovery increase wellbeing and overall health, boosting mood and lowering stress (van Hooff et al., 2011).

In contrast, *passive recovery* is usually associated with activities requiring limited effort, such as watching television or napping. Passive recovery is generally the most immediately available form of recovery; when we are tired, we take breaks and rest (Demerouti et al., 2001). These activities require fewer resources to initiate and maintain than more active forms of recovery. Passive recovery is associated with lowered psychological and physiological activation due to reduced resource expenditure (Rook & Zijlstra, 2006). In this regard, passive recovery is similar to relaxation, resulting in the same physiological reactions: decreased heart rate, relaxed muscles, and slower breathing, also known as the "relaxation response" (Sonnentag & Jelden, 2009). Passive activities have a positive impact on recovery because they put few demands on physical or psychological states; an individual engaged in passive recovery can then return to homeostasis (van Hooff et al., 2011).

In one of the few studies in this area, Oerlemans, Bakker, and Demerouti (2014) conducted a diary study in which 287 participants recorded their vigor, daily activities, and fatigue levels for seven days. Their results indicated that employees who do not spend time after work on recovery instead of work-related activities are at a heightened risk of burnout. Employees who had low burnout levels were replenished by more social activities, and were also more detached from their work during this. Employees who had a high level of burnout, however, benefited much more from low-effort activities, or passive recovery. They also categorized recovery-related activities into active and passive forms. These authors have delved into a part of

the research not fully investigated by others. There are gaps in the literature, some of which are addressed by the present study.

The Present Study

Given the existing, but relatively untested distinction between active and passive forms of recovery, research has yet to fully identify the reasons an individual would choose active over passive forms of recovery. Some research suggests that, somewhat paradoxically, active recovery may yield greater resource replenishment than passive recovery. In their diary study, Rook and Zijlstra (2006) found that passive recovery had a limited positive relationship with recovery, but that active recovery (particularly exercise) was strongly associated with decreased fatigue and increased resources. These findings support the notion that active recovery may be more recovery-enhancing than passive recovery.

While there is reason to believe that not all recovery-related activities are likely to yield the same level of resource replenishment, the antecedents to a person's choice between active and passive forms of recovery remain unexplored. Unfortunately, and as noted earlier, engaging in active recovery requires up-front investment of certain resources, which otherwise drained or depleted workers may not possess after an especially difficult period of work (Volman et al., 2013). This finding suggests that workers experiencing significant resource drain at work may be less likely to choose active forms of recovery than workers who do not experience such significant resource drain. When a person's resource reserve is "full" of resources, the threat of potentially expending or losing some to initiate an active form of recovery is not as challenging as when a person's resource reserve is running low (Hobfoll, 1989).

Exploring the impact of work on a person's resource levels requires development of appropriate measures. From a cognitive appraisal perspective, Cunningham and Huskey (2015) recently explored a construct labeled the Resource Impact of the Job (RIJ), showing that characteristics of the work environment contribute to the stress experienced by workers. However, this effect is conditioned by the extent to which workers perceive their jobs to be more resource draining than resource replenishing (i.e., more negative than positive RIJ).

COR theory suggests that employees may avoid certain job characteristics viewed as more resource draining than resource replenishing (Lutgen-Sandvik, Riforgiate, & Fletcher, 2011). A fundamental aspect of COR theory is that resource loss is more influential (severe) than resource gain, and that an employee is forced to store as many resources as possible, either by conserving or retrieving resources. Combined with RIJ, it is likely that, if an employee encounters an experience at work that they know will drain their resources further, then they will avoid these interactions (either social interaction or extra work) unless the experience provides resource-related rewards (Cunningham & Huskey, 2015). Further, if job characteristics are severely resource draining, then employees may feel depleted at the end of the day, particularly with a more negative than positive RIJ (Cunningham & Huskey, 2015).

In the present study, then, work experiences in jobs that yield a more negative than positive RIJ may be expected to influence a workers' choice of active versus passive recovery. More specifically,

> *Hypothesis 1.* Workers reporting a negative RIJ (i.e., more resource draining than replenishing) are less likely to choose active and more likely to choose passive forms of recovery.

Positive and negative experiences are affective experiences associated with work and general personal resource/recovery needs. The broaden and build theory of positive emotions (Fredrickson, 2001) states that positive experiences breeding positive emotions may, "loosen the hold of a negative emotion on a persons' mind and body by undoing the preparation for a specific action" (Oerlemans et al., 2014 2014 p. 200). According to Oerlemans et al. (2014), a person cannot feel both negative and positive emotions at the same time. This means that an individual feeling emotionally positive, who encounters a negative experience, will change to a negative internal emotional state (and vice versa). This requires that negative and positive emotions cannot coincide; one form has to be suppressed by the other. If they cannot occur at the same time, then positive experience may "undo" the effects of negative state of emotions. These same positive emotions (or experiences) can create far more resources than might be encountered within a normal day. They may also last longer and even improve physiological health (Oerlemans et al., 2014). This leads to the possibility that more positive experiences at work may be associated with more resource gain than drain (positive RIJ).

Positive experiences prompting positive emotions that seem to be universal include sensing other's appreciation (i.e., feeling valued by others), whether it be a customer, coworker, or loved one. Simply receiving a "thank you" can be perceived as a positive experience, increasing resources. More significant positive experiences include awards and promotions. These positive experiences correlate with more positive feelings about the workplace, and increased resources (Sonnentag & Jelden, 2009). van Hooff et al. (2011) added further to these findings by showing that more positive experiences were associated with higher resource level and lower fatigue levels. Such positive emotions such as pleasure are associated with increases in certain hormones. Much like physical activity, stress is decreased as levels of serotonin and

dopamine are increased, leading to improved overall wellbeing and health. Overall, positive emotions are associated with "improved overall health and longevity, increased altruism, courtesy, and conscientiousness" (Lutgen-Sandvik et al., 2011 p. 3).

Negative experiences causing negative emotions are mainly prompted by workplace incivility, broadly defined as any negative actions or words in the workplace intended to harm the target (Andersson & Pearson, 1999). Examples of incivility include customers or coworkers saying demeaning, derogatory, or condescending remarks, and raising their voices (van Jaarsveld, Walker, & Skarlicki, 2010 2010). Other negative experiences include worrying about potential failure or ruminating about negative experiences (Gross et al., 2011). Actions or experiences like these increase job demands and stress, leading to a decrease in resources (van Jaarsveld et al., 2010). These findings were discovered while conducting a diary study of 76 employees chronicled over the course of a year and a half. Daily negative events were significantly and positively related to fatigue (Gross et al., 2011)

Similarly, Bakker, van Veldhoven, and Xanthopoulou (2010) found that the more stressors (negative experiences) an employee faces, the more likely an employee is to use their resources, regardless of resource level. This use of resources drains them, even when already at low levels, leading to severe resource depletion (Gross et al., 2011). An employee may do this via transfer of resources, or avoidance as previously discussed. The result is resource depletion at the end of the day. Given the preceding, it is hypothesized that:

> *Hypothesis 2.* Positive emotions toward work are (a) positively associated with workers' likelihood of engaging in active versus passive forms of recovery, and (b) this relationship is mediated by the perceived RIJ and workers' perceived need for recovery.

CHAPTER II

METHOD

Participants and Procedure

In the present study, participants were surveyed from a variety of jobs to make a diverse and representative sample with a variety of different workers in different occupations. Students and shift workers re excluded from the study. Responses were mainly collected from a local insurance company that the researcher had contacts within employing a snowball sampling technique; professionals were identified who were appropriate for the survey, and were asked to forward the survey along to relevant potential participants. Participants were instructed to contact the researcher directly to be involved in the study for timing purposes. Information about the survey was sent to a local Young Professionals group, was posted on a variety of LinkedIn groups, and forwarded electronically from acquaintances. The final sample consisted of mostly females (74%) and the mean age among participants was 30 years (SD = 10.97). The majority of the participants were Caucasian (93%), whose highest level of education was a Bachelor's degree (56%). Most were married (39%), and roughly 74% of participants claimed they were not responsible for dependents, and none had more than four (both children and elderly).

Participants completed an internet-based survey administered through the university's Qualtrics account. The survey included a consent form, as well as demographic information on participants to provide an informed description of the sample. The online survey was comprised

of measures of job experience and type of recovery. The consent form described the study, and provided information about participant rights and risks, along with contact information. These factors taken into account were: sex, age, dependents, and ethnicity. As a participant reward, there was a drawing for five $25 gift cards.

Measures

The survey for this study was composed of the following measures of the core study variables.

Quantitative workload - Quantitative workload, a common work-related stressor, was assessed with the Quantitative Workload Inventory (Spector & Jex, 1998), to demonstrate how much work participants usually have to accomplish. Internal reliability in this study for this measure was $\alpha = .84$.

Experiences at work - As a straightforward indication of the quality of the workday, participants were asked to rate the degree to which their day was good or bad, on a scale ranging from one to ten. Participants also reported their perceived positive and negative experiences during the workday on the items of the Scale of Positive and Negative Experiences by Diener et al. (2010). This scale includes six items addressing positive feelings, and six items for negative feelings experienced by workers within the last four weeks. Each item is scored on a scale ranging from 1 to 5; 1 being "very rarely or never" and 5 being "very often or always." They can either be scored together as one or separate from each other. For the purposes of this study, they were scored together for the purpose of either being more positive or more negative. The total scale ranges from 6 to 30. The negative and positive scales correlated in previous studies $r = -.60$ ($N = 682$, $p < .001$) with each other. Reliability in this study was good at $\alpha = .89$.

Need for recovery - Participants provided their perceived need for recovery by responding to the Need for Resource Recovery scale by Cunningham (2008). This scale involves 12 items measuring 1 (lack of attention/cognitive resources), and 2 (need for detachment). Reliability for this measure was α =.90

Resource impact of the job - Participants' perceived RIJ was measured using a scale developed and modified by Cunningham and Huskey (2015). This scale includes 36 questions on a 7-point scale, concentrating on what impact specific experiences or factors have on resource replenishment or depletion. The scale ranges from 1 (not at all) to 7 (completely), which are then consolidated into a single RIJ measurement. This scale was divided into positive and negative RIJ. Positive RIJ had an α=.97, while negative RIJ had an internal consistency of α=.97.

Likelihood of engaging in active versus passive recovery - Participants were asked to list up to five activities that they intended to participate in for recovery after work. They were also asked at T2 what activities they actually engaged in the previous night, for how long, and how draining or replenishing that they felt the activities had been. These activities were coded into active verses passive according to the appropriate literature definitions. Active activities were coded with the dummy coding variable of one, while passive activities were coed with the dummy coding variable of two. These variables were then consolidated into a likelihood of active recovery rating.

Positive and negative affect - Positive and negative experiences were measured using the Positive and Negative affectivity Scale (Watson, Clark, & Tellegan, 1988). Responses were measured on the degree to which statements applied to themselves, such as "nervous" or "joyful." These responses are on a scale from 1 (very slightly or not at all) to 5 (extremely). Internal consistency had an alpha of .91 for positive emotions, and for negative .85. The wording has

been slightly modified for understanding by test takers, considering it was translated into English from another language.

Demographics - Participants to provide basic demographic information to enable sample description and serve as covariates in the analyses. This information included: age, sex, race/ethnicity, level of education, state, region, marital status, and number of dependents.

CHAPTER III

RESULTS

Analysis Preparation

Participant survey records missing a significant amount of data (i.e., roughly 50% or more on critical study variables) from the dataset before analysis. There was a handful of missing responses that could be remedied with within-person and within-scale means imputation (i.e., accomplished by reverse coding any scaled responses where necessary, and averaging the rest of the responses).

The Scale of Positive and Negative Experiences (Diener et al., 2010) can be scored in a few different ways, either by separately scoring negative experiences against positive experiences, or by calculating an affect balance. For the purposes of this study, it was decided to calculate an affect balance score from these items. This is accomplished by subtracting the negative feelings score from the positive feelings score. The result can vary from -24 (unhappiest possible) to 24 (highest affect balance possible) so that a higher score indicates rare negative experiences, but a high level of positive experiences and emotions. This score was standardized and averaged with a participant's overall quality of today rating (from one to ten on how good of a day it was) to improve the comprehensiveness and reliability of this indicator of general quality of work experience.

Each participant's RIJ score was also calculated as a difference between the degree to which work was seen as resource depleting (negative) and replenishing (positive). Participants' two RIJ scores were standardized and a difference score was calculated from these standardized negative and positive RIJ scores. This difference score as a negative would be more resource depleting, while a positive score would be more resource replenishing.

Another recode that had to be accomplished was for active and passive activities. For solid definitions, the literature referred to above was most helpful; more specifically that anything that is physiologically arousing could be coded as an 'active' activity while anything that lowered physiological arousal could be considered a 'passive' activity. Active activities were coded with a "1" while passive activities were coded with a "2." Sleep was both included and excluded from the data points, but did not create a substantial difference. This will be further discussed within the discussion section, and was discussed in the materials section as well. Unfortunately traditional reliability estimates are not possible with the activities asked for, but when time one to time two values were compared, they were highly correlated.

The results were calculated both with covariates and without covariates, both of which are shown. With covariates, age seems to be a predictor. The model with covariates was chosen. None of the covariates explain the likelihood of choosing active versus passive recovery.

Descriptive Statistics

Descriptive statistics for all study variables are summarized in Tables 1 and 2. In these tables it is evident that no covariates had any impact. All effects reported are over and above the impact of the covariates previously listed.

Table 1. Descriptive Statistics for all Study Variables

	N	*M*	*Median*	*SD*	Minimum	Maximum
Positive Affect	171	3.05	3.10	0.87	1.30	5.00
Negative Affect	171	1.54	1.40	0.58	1.00	4.10
Sex	173	1.75	2.00	0.44	1	2
Age	173	30.83	26.00	10.98	20	67
Dependents	171	0.44	0.00	0.90	0	4
Work Affect	189	4.30	4.50	1.47	-0.33	7.00
Resource Impact of Job	189	0.00	-0.37	1.51	-4.63	3.53
Need for Resource Recovery	189	3.29	3.33	1.30	1.00	6.83
Intended Active Recovery Likelihood	169	0.68	0.60	0.17	0.00	1.00
Actual Active Recovery Likelihood	108	0.68	0.67	0.18	0.25	1.00

Table 2. Intercorrelations between all Study Variables

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Positive Affect									
2. Negative Affect	-.27 *								
3. Sex	-.15	.07							
4. Age	.28 *	-.15 *	-.04						
5. Dependents	.22 *	-.08	-.09	.36 *					
6. Work Affect	.60 *	-.63 *	-.09	.12	.16 *				
7. Resource Impact of the Job	.46 *	-.33 *	-.04	.01	.00	.52 *			
8. Need for Resource Recovery	-.28 *	.52 *	.09	-.10	.05	-.54 *	-.48 *		
9. Intended Active Recovery Likelihood	.10	.03	-.04	.14	.15	.03	-.07	.00	
10. Actual Active Recovery Likelihood	-.01	.12	.12	.22 *	.15	-.04	.02	.08	.53 *

Note. * $p < .05$, N = 164-173 for most correlations, except those involving #10, where N = 104-108.

Hypothesis Tests

Hypothesis 1 proposed that workers reporting a negative RIJ (i.e., more resource draining than replenishing) are less likely to choose active and more likely to choose passive forms of recovery. Reviewing the bivariate correlations in Table 2, there is no support for this hypothesis. As an alternative test, participants with a positive versus negative RIJ difference score were compared in terms of their intended and actual active recovery likelihoods; these differences were also nonsignificant. The average intended likelihood of active recovery among negative RIJ participants was .68 (*SD* = .17) versus .68 (*SD* = .16) for participants with a positive RIJ. In terms of actual likelihood of active recovery, those with a positive RIJ had average activity recovery likelihood .70 (*SD* = .20) while those with a negative RIJ had an average activity likelihood of .67 (*SD* = .16).

Hypothesis 2 was that positive emotions towards work are (a) positively associated with workers' likelihood of engaging in active versus passive forms of recovery, and (b) this relationship is mediated by the perceived RIJ and workers' perceived need for recovery. This hypothesis was tested using data gathered at the end of workday time point (T1) and the following morning (T2) using the PROCESS program for SPSS (Hayes, 2013). This program made it possible to test the models described in Hypothesis 2 and are summarized in Figures 1 and 2. For these analyses, the following covariates were included, given their influence on the core study variables in other stress and recovery related research: work affect, RIJ difference, likelihood of choosing active recovery, need for resource recovery, positive affect, negative affect, sex, age, and dependents. This hypothesis was also not supported.

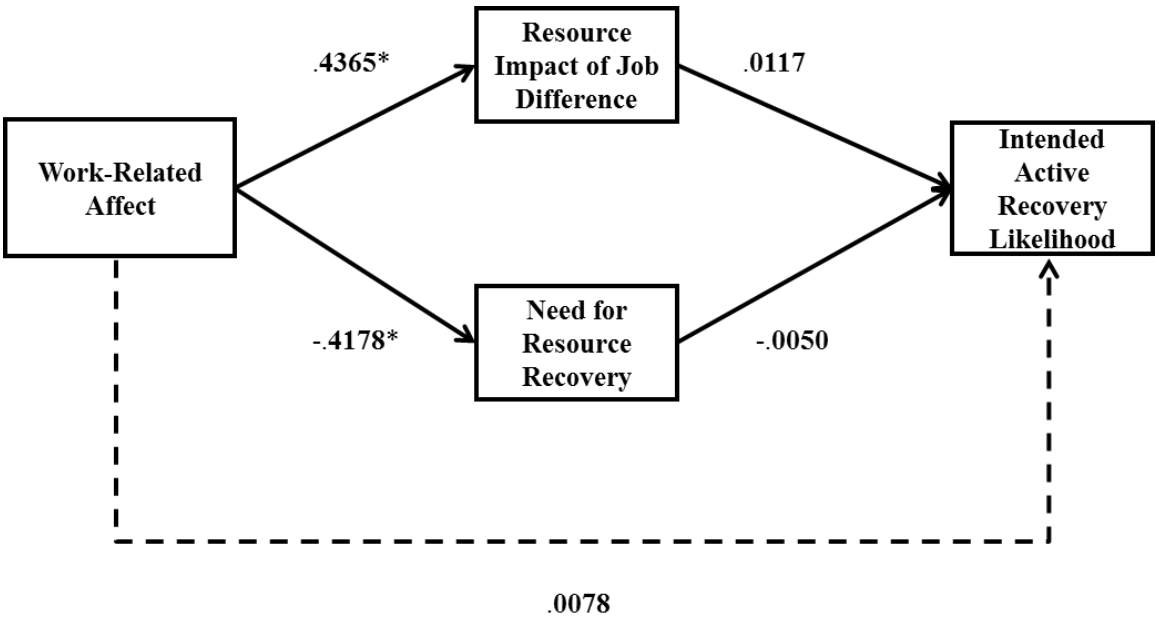

Figure 1. Intended Active Recovery Predicted by Work-Related Affect, Resource Impact of the Job, and Need for Resource Recovery

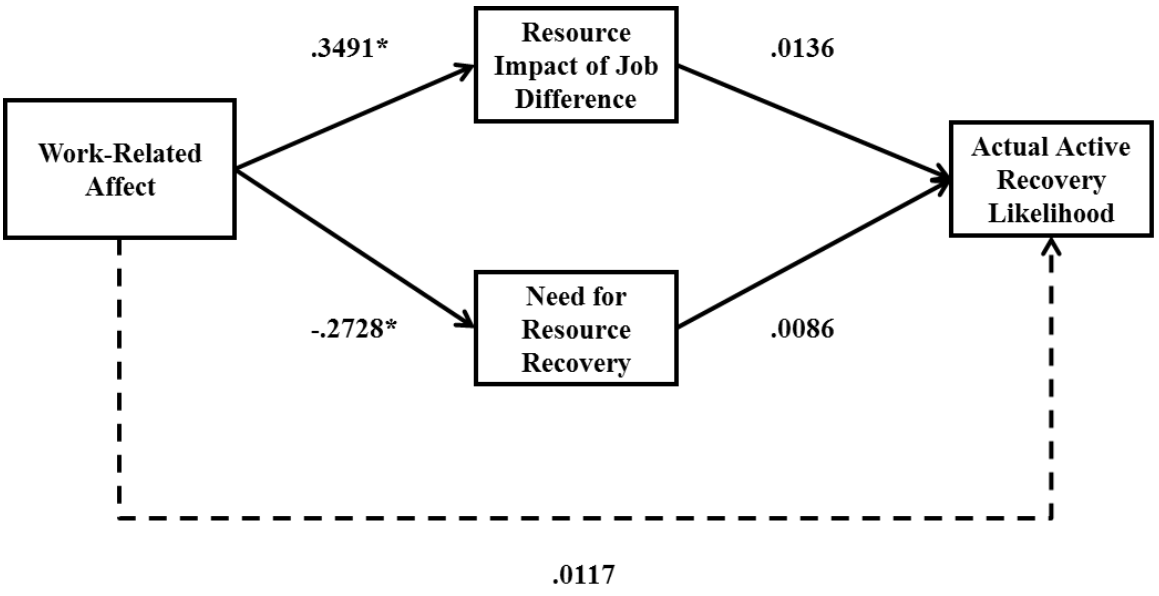

Figure 2. Actual Active Recovery Predicted by Work-Related Affect, Resource Impact of the Job, and Need for Resource Recovery

CHAPTER IV

DISCUSSION

In this study the influence of positive or negative experiences at work on an individual's choice of recovery form after work was investigated. Whether this relationship is conditioned by a person's perceived recovery needs and resource-related impact of one's job was also tested. Based on prior research, it was anticipated that positive experiences at work lead to increases in resources, and a higher likelihood of engaging in active forms of recovery. Based on the previous literature, it was expected that participants with a lower perceived need for recovery would be more likely to engage in active forms of recovery.

Although the data and results do not support these hypothesized effects (H1 or H2), our findings present several important implications for the developing stress and recovery field. In particular, the present findings contradict rather strongly the widely held belief that "bad" work days will lead to passive recovery and "good" work days might trigger more active recovery.

Much of the existing literature in this area suggests that active recovery is a risk for the employee, considering that it both depletes and replenishes resources. If an employee has encountered excessive resource depletion via negative experiences, then active recovery seems a less viable option (Demerouti et al., 2011). However, although we did not find direct evidence for this, it is important to realize that this may be because in this study, there was not a high stress population. Although the sample was representative or a variety of professions and organizations,

as well as location, it seems as if the participants were not in high stress positions. This is indicated by the results of the workload scale, as well as the overall negative affectivity scores.

While in this study passive and active recovery was operationally defined in keeping with the existing literature, fashioning a precise definition of "arousal" is challenging. For example, while a person may consider watching television to be indicative of decreased arousal; if that same person is watching a horror movie, their arousal may be increased, which is the objective of the film. Therefore, it is incredibly difficult to predict the likelihood of active recovery.

Limitations

There were several limitations to this study. One limitation has been previously discussed; that the sample may not have been representative of all levels of "stressful" jobs. To minimize the homogeneity among participants, collected data from a variety of different geographic areas, occupations, and age groups. However, considering that snowballing sampling procedure was used, this may have contributed to more homogeneity than previously anticipated. Future studies could benefit for having a more diverse sample, or for sampling a different kind of population. For instance, special populations could be studied, or populations in high-stress environments, such as the financial industry.

Self-report data is also inherently problematic, considering that the researchers could not know what activities nor the length of time that participants were involved in specific activities. Also, although the results were confidential, some participants may have concealed some of their activities. Future research may benefit from using observations, or a diary study to assess repetitive behaviors. Also, RIJ should be measured in relation to the present day, instead of over the course of several weeks.

Conclusion

Although the results were not statistically significant and directly supportive of the research hypotheses that this study was designed to test, the present findings have provided valuable information about employee behavior outside of work, and how this relates to the resource impact of their job. Most influential is it was not discovered that employees with a "bad" day at work chose passive activities, while employees who had a "good" day chose active activities, as is implied by the literature. Within this sample, the likelihood of choosing active over passive activities was 100 percent. Further research should be done in different populations to further the results, and the literature should not continue to assume that negative experiences lead to passive recovery, while positive experiences lead to active recovery.

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APPENDIX A

STUDY IRB DOCUMENTATION

THE UNIVERSITY of TENNESSEE CHATTANOOGA

Institutional Review Board
Dept. 4915
615 McCallie Avenue
Chattanooga, TN 37403-2598
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instrb@utc.edu
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MEMORANDUM

TO: Ashley Keating **IRB # 15-161**
Dr. Chris Cunningham

FROM: Lindsay Pardue, Director of Research Integrity
Dr. Amy Doolittle, IRB Committee Chair

DATE: 1-6-2016

SUBJECT: IRB #15-161: Active or Passive: An Examination of the Relationship between the Valence of Work Experiences and Choice of Recovery Strategy

The IRB Committee Chair has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

***The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project #* 15-161.**

Please remember that you must complete a Certification for Changes, Annual Review, or Project Termination/Completion Form when the project is completed or provide an annual report if the project takes over one year to complete. The IRB Committee will make every effort to remind you prior to your anniversary date; however, it is your responsibility to ensure that this additional step is satisfied.

Please remember to contact the IRB Committee immediately and submit a new project proposal for review if significant changes occur in your research design or in any instruments used in conducting the study. You should also contact the IRB Committee immediately if you encounter any adverse effects during your project that pose a risk to your subjects.

For any additional information, please consult our web page http://www.utc.edu/irb or email instrb@utc.edu

Best wishes for a successful research project.

APPENDIX B

CONSENT FORM

Informed Consent Form

Purpose of the Study:
This study is being conducted by Ashley Keating, a graduate student at The University of Tennessee at Chattanooga, under the supervision of Dr. Chris Cunningham. The purpose is to examine why employees may choose different forms of recovery.

What will be done:
If you agree to participate you will be asked to respond to questions in a brief internet-based survey (likely to take no longer than 30 minutes to complete). This survey includes questions about your typical experiences at work, as well as some questions about your activities outside of work. Some demographic questions are also included so that we can accurately describe the characteristics of the final group of participants. The data collection process is split into two brief surveys, one administered at the end of your work day and the other administered the next morning. Only participants who respond to the first survey will be invited to participate in the second survey.

Benefits of this Study:
You will be contributing to a growing base of knowledge regarding the research about recovery. Also, as a way of thanking you for your participation, respondents can earn entries into a drawing for one of four $25 Amazon gift cards. If you participate in the first survey, your name will be entered once. If you participate in both surveys, your name will be entered two additional times. Please note that you do not have to participate to have your name entered into this drawing (simply e-mail the primary researcher if you would like to be included).

What are the risks to me?
We anticipate that the risks of this study are limited to the potential inconvenience associated with completing the surveys. If you feel uncomfortable with a question in the surveys, you can skip that question or withdraw from the study altogether. Some questions for this study ask you about emotions and feelings. Although highly unlikely, if responding to such questions causes you to react strongly in some way, you are encouraged to seek assistance from available counseling resources in your community.

Confidentiality:
Your responses to the surveys for this study will be kept completely confidential. Only the researchers listed below will have access to your individual survey responses and these responses will be stored in secured computer files. Any results reported to or shared with others will be at a group or aggregate level and never associated with individual participants.

Decision to quit at any time:
Your participation in this research is voluntary; you are free to withdraw from this study at any time. You also may choose to skip any questions that you do not wish to answer. If you decide to quit at any time before you have finished either survey that is part of this study, however, your answers to that survey will NOT be recorded. We can only make use of fully complete surveys, so we greatly appreciate your full cooperation and participation.

How the findings will be used:
The results of this study will be used for research purposes only. Group-level (not personally identified)

How the findings will be used:
The results of this study will be used for research purposes only. Group-level (not personally identified) results from the study will be presented in educational settings and at professional conferences, and the results may be published in a professional journal in the field of psychology.

Contact information:
If you have concerns or questions about this study, please contact the chair of UTC's Institutional Review Board, Dr. Amy Doolittle at 423-425-5563, or the faculty supervisor for this study, Dr. Chris Cunningham at 423-425-4264. By completing and returning this survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

Thank you in advance for your assistance and participation.

Sincerely,

Ashley Keating
Chris Cunningham, Ph.D.
The University of Tennessee Chattanooga

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 15-161.

I have reviewed the information above and agree to participate in this research.

Yes	No
○	○

>>

APPENDIX C

QUANTITATIVE WORKLOAD INVENTORY

How accurate are each of the following statements at describing how you feel right now, at this moment?

	Less than once per month or never	Once or twice per month	Once or twice per week	Once or Twice per day	Several times per day
How often does your job require you to work very fast?	○	○	○	○	○
How often does your job require you to work very hard?	○	○	○	○	○
How often does your job leave you with little time to get things done?	○	○	○	○	○
How often is there a great deal to be done?	○	○	○	○	○
How often do you have more work than you can do well?	○	○	○	○	○

>>

APPENDIX D

INTERPERSONAL CONFLICT AT WORK SCALE

How accurate are each of the following statements?

	Never	Rarely	Sometimes	Quite Often	Very Often
How often do you get into arguments with others at work?	○	○	○	○	○
How often do other people yell at you at work?	○	○	○	○	○
How often are other people rude to you at work?	○	○	○	○	○
How often do other people do nasty things to you at work?	○	○	○	○	○

>>

APPENDIX E

TYPE OF DAY MEASURE

Using the scale below, where 1 = terrible and 10 = great, how has today been so far?

Terrible Great

0 1 2 3 4 5 6 7 8 9 10

Today has been...

Physical activities (e.g., exercising, cleaning) have a recovering effect for me.

Yes No

Low-effort activities (e.g., watching TV, reading, listening to music) have a recovering effect for me.

Yes No

>>

APPENDIX F

SCALE OF POSITIVE AND NEGATIVE EXPERIENCES

Please think about what you have been doing and experiencing at work today. Then report how much you experienced each of the following feelings, using the provided scale.

	Very Rarely or Never	Rarely	Sometimes	Often	Very Often or Always
Positive	○	○	○	○	○
Negative	○	○	○	○	○
Good	○	○	○	○	○
Bad	○	○	○	○	○
Pleasant	○	○	○	○	○
Unpleasant	○	○	○	○	○
Happy	○	○	○	○	○
Sad	○	○	○	○	○
Afraid	○	○	○	○	○
Joyful	○	○	○	○	○
Angry	○	○	○	○	○
Contented	○	○	○	○	○
	Very Rarely or Never	Rarely	Sometimes	Often	Very Often or Always

>>

APPENDIX G

NEED FOR RESOURCE RECOVERY SCALE

How *not* accurate (inaccurate) or accurate are each of the following statements at describing how you feel right now, at this moment?

	Completely inaccurate	Moderately inaccurate	Somewhat inaccurate	Neither inaccurate, nor accurate	Somewhat accurate	Moderately accurate	Completely accurate
I have been working so hard today that I am losing my ability to concentrate on what I'm doing	○	○	○	○	○	○	○
I have been so busy working today that I am beginning to feel I am losing control over all the work I have to do	○	○	○	○	○	○	○
If my work were finished for today, I would still have trouble concentrating on other things	○	○	○	○	○	○	○
I have worked so long and hard today that I do not have much attention left to give to my job tasks	○	○	○	○	○	○	○

	Completely inaccurate	Moderately inaccurate	Somewhat inaccurate	nor accurate	Somewhat accurate	Moderately accurate	Completely accurate
My work has taken so much effort today that I am having difficulty keeping my thoughts straight	○	○	○	○	○	○	○
Despite my work efforts so far today, I am thinking as clearly as I was when I started working today	○	○	○	○	○	○	○
It will be difficult for me to show interest in other people when I finish working today	○	○	○	○	○	○	○
When I stop my work for today I will need more than an hour to begin feeling recovered	○	○	○	○	○	○	○

	Completely inaccurate	Moderately inaccurate	Somewhat inaccurate	Neither inaccurate, nor accurate	Somewhat accurate	Moderately accurate	Completely accurate
When I stop my work for today, I hope other people will leave me alone for a little while	○	○	○	○	○	○	○

	Completely inaccurate	Moderately inaccurate	Somewhat inaccurate	Neither inaccurate, nor accurate	Somewhat accurate	Moderately accurate	Completely accurate
my work for today, I hope other people will leave me alone for a little while	○	○	○	○	○	○	○
After working today I will be too tired to start on other activities	○	○	○	○	○	○	○
I need to step away from my work very soon because a break would help me function better	○	○	○	○	○	○	○
When work is finished today I will need some time by myself to start recovering and restoring myself before starting something else	○	○	○	○	○	○	○

>>

APPENDIX H

RESOURCE IMPACT OF THE JOB

"Resources" are psychological or physical factors that allow us to respond to demands and changes in our daily lives. Some of our daily activities require more from us than they give back, which makes them draining activities. Other activities, however, give more back than they take from us, which helps us feel replenished.

Think back over the last 4 weeks. To what extent has participating in your work-related activities **DRAINED** you of each of the following resources?

	Not at all	To a small extent	To a moderate extent	To a large extent	Completely
Feeling that I am successful	○	○	○	○	○
Time for adequate sleep	○	○	○	○	○
Feeling valuable to others	○	○	○	○	○
Sense of pride in myself	○	○	○	○	○
"Free Time"	○	○	○	○	○
Time for work	○	○	○	○	○
Feeling that I am accomplishing my goals	○	○	○	○	○
Hope	○	○	○	○	○

	Not at all	To a small extent	To a moderate extent	To a large extent	Completely
Time with loved ones	○	○	○	○	○
Necessary tools for work	○	○	○	○	○
Stamina/endurance	○	○	○	○	○
Personal health	○	○	○	○	○

Feeling that my future success depends on me	○	○	○	○	○
A positively challenging rountine	○	○	○	○	○
Sense of optimism	○	○	○	○	○
Status/Senority at work	○	○	○	○	○

	Not at all	To a small extent	To a moderate extent	To a large extent	Completely
Stable employment	○	○	○	○	○
Feeling that I have control over my life	○	○	○	○	○
A role as a leader	○	○	○	○	○
Ability to communicate well	○	○	○	○	○
Feeling that my life is peaceful	○	○	○	○	○
Acknowledgement for accomplishment	○	○	○	○	○
Ability to organize tasks	○	○	○	○	○
Sense of commitment	○	○	○	○	○

	Not at all	To a small extent	To a moderate extent	To a large extent	Completely
Intimacy with at least one friend	○	○	○	○	○
Understanding from my employer/boss	○	○	○	○	○
Companionship	○	○	○	○	○
Motivation to get things done	○	○	○	○	○
Support from co-workers	○	○	○	○	○

	Not at all	To a small extent	moderate extent	To a large extent	Completely
Intimacy with at least one friend	○	○	○	○	○
Understanding from my employer/boss	○	○	○	○	○
Companionship	○	○	○	○	○
Motivation to get things done	○	○	○	○	○
Support from co-workers	○	○	○	○	○
Feeling independent	○	○	○	○	○
Affection from others	○	○	○	○	○
Feeling that my life has meaning or purpose	○	○	○	○	○

	Not at all	To a small extent	To a moderate extent	To a large extent	Completely
Positive feelings about myself	○	○	○	○	○
People I can learn from	○	○	○	○	○
Help with tasks at work	○	○	○	○	○
Loyalty of friends	○	○	○	○	○

	Not at all	To a small extent	To a moderate extent	To a large extent	Completely

>>

As in the preceding question, remember that "resources" are psychological or physical factors that allow us to respond to demands and changes in our daily lives. Some of our daily activities require more from us than they give back, which makes them draining activities. Other activities, however, give more back than they take from us, which helps us feel replenished.

Think back over the last 4 weeks. To what extent has participating in your work-related activities **REPLENISHED** you or restored each of the following resources?

	Not At All	To a small extent	To a moderate extent	To a large extent	Completely
Feeling that I am successful	○	○	○	○	○
Time for adequate sleep	○	○	○	○	○
Feeling valuable to others	○	○	○	○	○
Sense of pride in myself	○	○	○	○	○
"Free Time"	○	○	○	○	○
Time for work	○	○	○	○	○
Feeling that I am accomplishing my goals	○	○	○	○	○
Hope	○	○	○	○	○

	Not At All	To a small extent	To a moderate extent	To a large extent	Completely
Time with loved ones	○	○	○	○	○
Necessary tools for work	○	○	○	○	○
Stamina/endurance	○	○	○	○	○
Personal health	○	○	○	○	○

Feeling that my future success depends on me	○	○	○	○	○
A positively challenging rountine	○	○	○	○	○
Sense of optimism	○	○	○	○	○
Status/Senority at work	○	○	○	○	○

	Not At All	To a small extent	To a moderate extent	To a large extent	Completely
Stable employment	○	○	○	○	○
Feeling that I have control over my life	○	○	○	○	○
A role as a leader	○	○	○	○	○
Ability to communicate well	○	○	○	○	○
Feeling that my life is peaceful	○	○	○	○	○
Acknowledgement for accomplishment	○	○	○	○	○
Ability to organize tasks	○	○	○	○	○
Sense of commitment	○	○	○	○	○

	Not At All	To a small extent	To a moderate extent	To a large extent	Completely
Intimacy with at least one friend	○	○	○	○	○
Understanding from my employer/boss	○	○	○	○	○
Companionship	○	○	○	○	○
Motivation to get things done	○	○	○	○	○
Support from co-workers	○	○	○	○	○

	Not At All	To a small extent	moderate extent	To a large extent	Completely
Intimacy with at least one friend	○	○	○	○	○
Understanding from my employer/boss	○	○	○	○	○
Companionship	○	○	○	○	○
Motivation to get things done	○	○	○	○	○
Support from co-workers	○	○	○	○	○
Feeling independent	○	○	○	○	○
Affection from others	○	○	○	○	○
Feeling that my life has meaning or purpose	○	○	○	○	○

	Not At All	To a small extent	To a moderate extent	To a large extent	Completely
Positive feelings about myself	○	○	○	○	○
People I can learn from	○	○	○	○	○
Help with tasks at work	○	○	○	○	○
Loyalty of friends	○	○	○	○	○

	Not At All	To a small extent	To a moderate extent	To a large extent	Completely

>>

APPENDIX I

ANTICIPATED ACTIVITIES

Now think about what you are likely to be doing with the rest of your day, outside of work. In the table below, please provide the following information:

Column 1: Fill-in the blanks by briefly describing up to five (5) specific nonwork-related activities you think you will engage in outside of work today. Be as specific as possible and list only those activities on which you expect to spend some *measureable* amount of time (example: sleep, watching TV, running, cooking, etc.).

Column 2: Estimate how much time (in minutes, example: 45) you expect to spend on each of the main activities you list in Column 1.

Column 3: Rate the extent to which each of these activities is likely to **DRAIN** you of resources similar to those listed on the previous portion of this survey? *1=Not at all, 2=Somewhat, 3=Moderately, 4=Very, 5=Extremely*

Column 4: Rate the extent to which each of these activities is likely to **REPLENISH** your resources? *1=Not at all, 2=Somewhat, 3=Moderately, 4=Very, 5=Extremely*

	Description	Time	Likely to drain	Likely to replenish
Nonwork activity 1				
Nonwork activity 2				
Nonwork activity 3				
Nonwork activity 4				
Nonwork activity 5				

>>

APPENDIX J

POSITIVE AND NEGATIVE AFFECTIVITY SCALE

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to the word. Indicate to what extent you have felt this way today. Use the following scale to record your answers.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested	○	○	○	○	○
Afraid	○	○	○	○	○
Excited	○	○	○	○	○
Scared	○	○	○	○	○
Strong	○	○	○	○	○
Nervous	○	○	○	○	○
Enthusiastic	○	○	○	○	○

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Jittery	○	○	○	○	○
Proud	○	○	○	○	○
Irritable	○	○	○	○	○
Alert	○	○	○	○	○
Hostile	○	○	○	○	○
Inspired	○	○	○	○	○
Guilty	○	○	○	○	○

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Determined	○	○	○	○	○
Ashamed	○	○	○	○	○
Attentive	○	○	○	○	○
Upset	○	○	○	○	○
Active	○	○	○	○	○
Distressed	○	○	○	○	○

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

>>

APPENDIX K

DEMOGRAPHICS

I am a.....

Male ○ Female ○

Please enter your age:

Please select the ethnicity with which you most closely identify:

- ○ Hispanic/Latino
- ○ Non-Hispanic/Non-Latino

Please select the race with which you most closely identify:

- ○ American Indian or Alaskan
- ○ Black or African American
- ○ Asian
- ○ Native Hawaiian or Other Pacific Island
- ○ White
- ○ Spanish, Hispanic, or Latino

What is the highest education level you have achieved?

- ○ Some high school
- ○ Completed high school
- ○ Some college
- ○ Associate's degree
- ○ Bachelor's degree
- ○ Some graduate school
- ○ Masters
- ○ Doctorate

Please identify your marital status:

- ○ Single
- ○ Married
- ○ Divorced
- ○ Not married, but in a committed relationship

How many dependents do you support (children or elder adults)?
Please round to the nearest whole number.

- ○ Completed high school
- ○ Some college
- ○ Associate's degree
- ○ Bachelor's degree
- ○ Some graduate school
- ○ Masters
- ○ Doctorate

Please identify your marital status:

- ○ Single
- ○ Married
- ○ Divorced
- ○ Not married, but in a committed relationship

How many dependents do you support (children or elder adults)?
Please round to the nearest whole number.

What state do you currently reside in?

What kind of area do you currently reside in?

Urban	Suburban	Rural
○	○	○

To allow us to link your responses from this survey to a brief follow-up survey you will be asked to complete tomorrow morning, please provide the following information to create a unique identifier code:

1) Last 3 letters of your last name (example: ***ITH*** if your last name is Smith)
2) Day and Year of your birth (example: ***0475*** if born on the fourth of some month in 1975)
3) ***M*** if you are Male or ***F*** if you are Female

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VITA

Ashley Keating was born in Miami, FL, and was soon after adopted by Michael and Maureen Keating. She was the second child with an older brother Michael Keating. She graduated from Trinity Christian Academy, and continued to Transylvania University where she showed an interest in psychology. Ashley worked as a research assistant to Dr. Margaret Upchurch, and interned under Dr. Fred Kinnicutt, furthering her interest to pursue her masters. She completed a Bachelor of Arts degree in May 2014 in Writing, Rhetoric, and Communications, with a double minor in both psychology and music. After graduation, she was accepted at The University of Tennessee at Chattanooga for the Industrial and Organizational Psychology program and completed her Masters of Science degree in May of 2016.