THE DISTINCTIVESS OF ENGAGEMENT AND FLOW AT WORK

by

KYLE WILLIAM VAN ITTERSUM

B.A., Truman State University 2009
M.S., Kansas State University, 2013

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Psychological Sciences
College of Arts and Sciences

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2015

Abstract

Within the literature on engagement at work there has traditionally been a focus on overall work engagement. However, in recent years there has been increasing research on applying a specific form of task engagement, called flow, to the world of work. The current project details two studies that serve to differentiate and understand the relationship between overall work engagement and flow. The first study collected data on engagement and flow from several hundred working adults and used confirmatory factor analysis to explore the factor structure of the two concepts. Results indicated that flow and engagement are separate constructs, albeit related. The second study again collected data from working adults, however, the goal was to show the differential relationships both flow and engagement have with the work outcomes of job satisfaction, commitment, citizenship behaviors, and burnout. Results indicated that both flow and engagement were significant predictors of these outcomes with engagement being the stronger predictor of the two. Theoretical and practical implications of these findings are also discussed in full.

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Dedication

I would first like to dedicate this dissertation to my wife, Christina, for always being there and always helping in any way she can.

I would also like to dedicate this document to my parents who have been nothing but supportive of my educational pursuits.

Chapter 1 - General Introduction

Positive Psychology

Over the course of its history, the field of psychology has employed many different models, both general and specific, to guide its focus. Prior to WWII, psychology had several primary missions; to treat and/or cure mental illness, to make the lives of people more productive, and to identify and nurture talent and high-achievers (Seligman & Csikszentmihalyi, 2000). As such, there were numerous streams of research focused on positive human functioning to complement the research investigating mental illness and areas of deficiency. For example, Terman (1939) focused on giftedness in children and Jung (1933) sought to help individuals find meaning in life. Following WWII, however, there began a strong shift in psychology away from positive functioning and more towards a disease model wherein the field of psychology focused more on identification and treatment of illness instead of the identification and building of strengths. This was mainly a result of an economic push towards the study of mental illness that resulted from the creation of the Veterans Administration (now Veterans Affairs) and the National Institute of Mental Health (Seligman & Csikszentmihalyi, 2000). These organizations, and the large amounts of grant funding they were able to disperse, facilitated the study of numerous mental health issues (Seligman, 1994). However, the shift in focus resulted in the study of mental illness at the expense of fostering human strengths and growth (Seligman & Csikszentmihalyi, 2000). This disease model then persisted through the end of the 20th century and resulted in a wide variety of research programs focused on negative psychological variables and conditions (Seligman & Csikszentmihalyi, 2000). For instance, many studies can still be seen today examining the negative impacts of issues such as divorce (e.g., Amato, 2000), abuse (e.g., Hornor, 2010), addiction (e.g., Kovac, 2013), and racism (e.g., Bair & Steele, 2010).

Considering this broad focus on the negative side of human life and functioning, there was a call in 2000 (Seligman & Csikszentmihalyi, 2000) by the then APA President, Martin Seligman, for a more positive psychology. In his words "The aim of positive psychology is to catalyze a change in psychology from a preoccupation only with repairing the worst things in life to also building the best qualities in life." (Seligman, 2002: pp. 3). As a result, the first decade and a half of the 21st century have seen a revival and increased interest with the positive aspects of psychology.

Within organizational psychology, the increase in research examining positive organizational topics can be taken as evidence for the push towards a more positive psychology. However, it is of note that organizational psychology has not suffered as greatly from the disease model. Early work in the I/O field was concerned primarily with getting the most productivity and profit out of workers, however, this quickly evolved as organizations and researchers alike began to be more concerned with employees as human capital (Landy, 1997). Additionally, the early work on psychological testing, specifically the ARMY alpha and beta tests, had the goal of classifying the knowledge, skills, and abilities of individuals and subsequently using that information to maximize organizational functioning (Landy, 1997). In keeping with that tradition, the following studies will examine various forms of personal engagement, specifically overall work engagement and flow, with the goal of using the findings to improve the experience of work.

To begin, a PsycInfo search was conducted to quantify the increase in positive organizational articles since Seligman's call for a more positive psychology (Seligman & Csikszentmihalyi, 2000). Since 2000, the number of peer-reviewed articles on flow and/or engagement has dramatically increased which can be seen in Table 1.1. More specifically, Donaldson and Ko (2010) note that work in a new field generally involves extensive theory

building and as such a majority of the positive organizational psychology articles published between 2001-2007 were conceptual in nature. Within this conceptual literature, there are two broad research agendas aimed at increasing the study of positive constructs in organizational settings; Positive Organizational Scholarship (Cameron, Dutton, & Quinn, 2003) and Positive Organizational Behavior (Luthans, 2002a) which are the 6th and 4th most published topics within the field of positive organizational psychology (Donaldson & Ko, 2010).

Table 1.1 – Publication Frequency on Flow and Engagement

Number of articles published about Flow and Engagement 2000-Present

Year	Number of Articles
2000	318
2002	345
2004	406
2006	445
2008	582
2010	513
2012	588
2014	659

Positive Organizational Scholarship (POS), as detailed by Cameron, Dutton, and Quinn (2003) is an umbrella research term that covers anything that relates to positive states within an organizational setting. Example research interests include organizational development, citizenship behaviors, and corporate social responsibility (Cameron, Dutton, & Quinn, 2003).

Positive Organizational Behavior (POB), the second, and slightly more restrictive, positive research agenda was started by Fred Luthans and colleagues (Luthans, 2002a). Instead of being a broad catch-all similar to POS, POB focuses on "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement" (Luthans, 2002a, pp. 59).

The restrictions within the POB domain exist to focus research on state-based constructs that can be managed and developed within all employees or organizational members (Luthans, 2002a).

Considering the finding that a majority of positive organizational articles were conceptual in nature from 2001-2007 (Donaldson & Ko, 2010), it is of note that much of the early publications within POB and POS are primarily concerned with conceptual clarification and theory building (e.g.: Cameron & Caza, 2004; Cameron, Dutton, & Quinn, 2003; Luthans, 2002b; Nelson & Cooper, 2007; Ramlall, 2008). However, beginning in 2008, the number of empirical articles began to outnumber the conceptual ones (Donaldson & Ko, 2010). In keeping with this tradition, the following studies aimed to empirically examine conceptual claims about the positive states of engagement and flow at work and as such add to the growing body of positive organizational literature.

Specifically, the current studies sought to understand the dimensionality of both flow and engagement. Being that both concepts are forms of personal engagement, there is still confusion in the field as to whether or not flow and work engagement are a unitary construct (Macey & Schneider, 2008; May, Gilson, & Harter, 2004). The following studies examined flow and engagement to determine their dimensionality. In addition, relationships with other established constructs, such as commitment and job satisfaction, were examined to more fully understand the structure and functioning of flow and engagement. The following studies will aid in clarifying these related engagement constructs and, more broadly, will add to the empirical literature focused on a positive, strength based, approach to human functioning within organizations.

Engagement

Modern definitions of work engagement were born out of qualitative work investigating individuals who are fully involved and dedicated to their work. Kahn (1990) began researching

the premise that individuals can invest varying amounts of their selves physically, emotionally, or cognitively into their work roles and job tasks. This research built off existing literature and organizational concepts such as job involvement (Lawler & Hall, 1970; Lodahl & Kejner, 1965) and organizational commitment (Mowday, Porter, & Steers, 1982; Porter, Steers, Mowday, & Boulian, 1974). Although these concepts reference the relationship between a person and their work or workplace, engagement was originally differentiated from these by being more specific and context dependent. Kahn (1990) notes that both job involvement and commitment were measured either attitudinally or behaviorally but both methods focused on overall feelings about the individual's work and did not touch on the interplay between the individual and their specific task roles. Goffman (1961) demonstrates that people's attachment and detachment from their roles varies, in that at some times people embrace their roles, while at other times they may distance themselves from their roles. Kahn (1990) elaborates using the terms personal engagement and personal disengagement to relate Goffman's (1961) concepts to specific roles, namely the work roles an employee must engage in on the job. To quote "I defined personal engagement as the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (Kahn, 1990, p. 694).

Following the formulation of a basic definition and concept of personal engagement, Kahn (1990) then used a qualitative interview protocol to interview employees of a summer camp and an architecture firm to determine the conditions of what he called personal engagement. Following the analysis of his qualitative data, Kahn (1990) refined his personal engagement definition to the following:

"Personal engagement is the simultaneous employment and expression of a person's "preferred self" in task behaviors that promote connections to work and to others, personal presence (physical, cognitive and emotional), and active, full role performances. My premise is that people have dimensions of themselves that, given appropriate conditions, they prefer to use and express in the course of role performances." (Kahn, 1990, pp. 700)

As with modern research on work engagement, Kahn (1990) also describes conditions of disengagement. In conditions of personal disengagement, individuals withdraw and defend their preferred self and they may be physically, cognitively, or emotionally absent or passive in their role performances. This definition of disengagement is similar to that of the early definitions of burnout (Maslach, 1982), but the connections between engagement, disengagement, and burnout will be discussed later in full.

In addition to defining the phenomenon of personal engagement, Kahn (1990) elaborates by examining the conditions in which a person might experience personal engagement. One, the work must have meaningfulness, a feeling that the individual is receiving as much from the work as they are putting in (Kahn, 1990). It was also found that three factors influenced individual's experience of meaningfulness in their work; tasks characteristics, role characteristics, and work interactions. Task characteristics, which are based on Hackman and Oldham's (1980) Job Characteristics Model (JCM), include concepts such as skill and task variety, clear goals, and autonomy. Role characteristics are the characteristics of the job and job title itself which fit with a person's self-image of their status and influence (Kahn, 1990). Lastly, work interactions are the interpersonal relations individuals have in the work place and in the completion of their work roles which lead them to increase or decrease the amount of personal investment the individual

contributes (Kahn, 1990). Kahn & Fellows (2013) further note that meaningfulness is the most significant contributor to the experience of engagement for employees and safety and availability are necessary, but not sufficient, for engagement to occur.

Subsequent research and theory building has begun to show that there are ways in which an organization may create contexts which enhance the meaningfulness of work and subsequently increase the opportunities for engagement to occur. For instance, organizations may form structures and processes which link employee roles and job tasks to larger organizational missions and purposes (Bunderson & Thompson, 2009; Duffy & Sedlack, 2007; Emmons, 2003; Pratt & Ashforth, 2003). Organizations may also create fair and transparent reward systems (Blader & Tyler, 2009; Tyler & Blader, 2003) or invest in selecting, training, evaluating, and rewarding competent leaders and managers (Bass & Avolio, 1990; Segers, De Prins, & Brouwers, 2010). Through these and other positive organizational practices, organizations can help craft meaningfulness in their employee's jobs which in turn will make it more likely for employee's to invest their full selves into their work (Kahn & Fellows, 2013).

The second broad factor Kahn (1990) identified which contributed to the experience of personal engagement was that of safety. Kahn (1990) defined safety as a "Sense of being able to show and employ self without fear of negative consequences to self-image, status, or career" (p. 705). In other words, individuals will not fully engage their whole self in their task performance if they feel doing so will hurt them personally or professionally. These feelings can be influenced by interpersonal relationships and group dynamics, as well as by organizational norms, policies, and leadership or management styles (Kahn, 1990).

Lastly, availability is the final factor Kahn (1990) identifies which contributes to engagement. Availability simply refers to whether or not the individual believes they possess and

are able to use their physical, emotional, and cognitive resources for their role performance. Availability is subsequently influenced by the amount of physical and emotional energy the individual has to expend. According to Kahn (1990), when individuals were physically tired or exhausted they tended to disengage with their work. Additionally, individuals who were emotionally depleted also disengaged from their work (Kahn, 1990). As such, when an organizational member has taxing or tiring experiences, inside or outside of work, it leaves them with less energy and resources and therefore less able to fully engage in their work (Kahn, 1990).

Kahn & Fellows (2013) elaborate on these conditions of engagement by saying there is no guarantee any one individual will be engaged. They note some workers may never be fully engaged while others may engage with work easily and often (Kahn & Fellows, 2013). These individual differences in engagement are subsequently influenced by the wide variety of individual differences in employees. For instance, temperaments, life experiences, aptitudes, personality dimensions, and needs and desires for growth and development all may influence the form and/or duration of one's engagement (Hall & Schnieder, 1972; Macey & Schneider, 2008; Rabinowitz & Hall, 1977; Staw, Bell, & Clausen, 1986; Wildermuth, 2010)

To summarize, Kahn (1990) provides the first working definition of personal engagement as it specifically relates to role performance at work. Personal engagement is the investment of cognitive, physical, and emotional energies into expressing the ideal self in the context of role performance (Kahn, 1990; Kahn & Fellows, 2013). Personal engagement is subsequently influenced by the conditions of meaningfulness, safety, and availability and if those conditions are adequately met, it is more likely that individuals may be personally engaged in their work (Kahn 1990; Kahn & Fellows, 2013). Kahn (1990) elaborates by comparing personal engagement to other popular constructs at the time, such as job involvement, organizational

commitment, disengagement, and burnout. Following Kahn's (1990; 1992) original examinations of personal engagement, other empirical researchers further explored the concept of engagement at work and further refined the concept. One such researcher was Maslach (1976) whose theories on engagement was developed through her work on burnout which is viewed by many as a critical component of work engagement.

Burnout

Beginning in the 1970's, practitioners and organizational members began referring to a phenomenon called burnout wherein individuals retreated, either cognitively, emotionally, or physically, from their work (Maslach, Schaufeli, & Leiter, 2001). Specifically, individuals experiencing burnout feel exhausted, cynical, detached from their job, and ineffective at work (Maslach, Schaufeli, & Leiter, 2001). Similar to work on engagement, this construct was not initially supported by the research community due to its bottom-up construction, meaning its definition first came from real workers and not empirical research and theory building (Maslach, Schaufeli, & Leiter, 2001). Freudenberger (1975) was a psychiatrist working in an alternative health care agency, a field very susceptible to high emotional and interpersonal stress. His work provided examples of himself and others experiencing emotional depletion and a loss of motivation and commitment which he labeled burnout due to its similarity with the effects of chronic drug abuse. Maslach (1976) was a social psychologist interested in emotions at work within the human service industry and noticed some individuals had coping strategies which helped them better cope with the high stress of their jobs.

The developmental path of research on burnout mirrors Kahn's (1990) work on engagement in that it was qualitative in nature and stressed the interactions between an individual and their environment or workplace. Although many at the time considered burnout a

"pop" phenomenon, a common criticism of positive organizational constructs, research eventually moved from conceptual theory building to empirical studies aimed at construct definition, clarification, and measurement (e.g.: Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1996). Maslach and Jackson (1981) created the Maslach Burnout Inventory, who's most recent version is still widely used today (MBI: Maslach, Jackson, & Leiter, 1996). Due to the early focus on human service jobs, the early measure focused primarily on interpersonal relations on the job (Maslach & Jackson, 1981), however, the updated version defines the conditions of burnout more broadly to include more than just interpersonal aspects of the job while still defining burnout by its three dimensions: exhaustion, cynicism, and reduced personal or professional efficacy (Maslach, Jackson, & Leiter, 1996). As with most constructs, research moved beyond construct definition and measurement issues to examining the relation between burnout and other aspects of work. Research has shown that burnout has negative consequences at work, such as reduced job performance and increased absenteeism and turnover (Maslach, Schaufeli, & Leiter, 2001). Additionally, research has been conducted to understand which characteristics of the job, occupation, organization, or individual which may lead to an increased or decreased experience of burnout. For instance, having to engage in emotional labor can explain the variance in burnout above and beyond basic job stressors (Zapf, Seifert, Schmutte, & Mertini, 2001). Additionally, it has been found that a stress-prone personality profile comprised of low levels of hardiness, poor self-esteem, an external locus-of-control, and avoidant coping style is also associated with increased experiences of burnout (Maslach, Schaufeli, & Leiter, 2001; Semmer, 1996).

Beyond the similarity in the manner in which the early construct definition and empirical investigation was conducted, engagement and burnout are most related due to the fact that they

are proposed opposites of one another. Maslach and Leiter (1997) reframed burnout as a state that occurs when engagement erodes in that the energy, involvement, and efficacy of the job becomes, respectively, the exhaustion, cynicism, and ineffectiveness of burnout (Maslach, Schaufeli, & Leiter, 2001). In fact, opposite score profiles of burnout on the MBI (Maslach, Jackson, & Leiter, 1996) have been used to indicate engagement. Maslach and Leiter (1997) studied two hospital units where one unit had typical burnout profiles while the other had the opposite profile, one of engagement. It was further found that the unit that showed signs of burnout also showed unfavorable scores on work dimensions indicative of burnout, namely rewards and values. On the other hand, the engagement group had favorable scores on the work dimensions of workload control, fairness, and values, which are job characteristics discussed as being conducive to engagement in Kahn (1990).

Although this early work defined engagement as simply the opposite of burnout, Schaufeli and colleagues expanded on the burnout work of Maslach (Maslach & Leiter, 1997; Maslach, Schaufeli, & Leiter, 2001) and the engagement work of Kahn (1990; 1992) and defined engagement as a useful construct in its own right. Schaufeli broadened the scope of both engagement and burnout to incorporate a more comprehensive taxonomy grounded in mood and emotions. Watson and Tellegen (1985) describe how mood can be described by two primary dimensions, pleasure and activation. Using this framework, burnout is conceptualized as being low on both factors while engagement is characterized by being high on both (Maslach, Schaufeli, & Leiter, 2001). Schaufeli and colleagues (Maslach, Schaufeli, & Leiter, 2001; Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002) further elaborated by defining engagement as a "persistent, positive affective-motivational state of fulfillment in employees that is characterized by vigor, dedication, and absorption" (Maslach, Schaufeli, & Leiter, 2001; p.

417). In this context, vigor is comprised of high levels of energy and resilience or the ability to invest effort in one's job and persevere when faced with difficulty. Dedication refers to a strong involvement in ones work, similar to Kahn's (1990) notion of meaningfulness. Last, absorption refers to a pleasant state of immersion in one's job, very similar to the concept of flow (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). Although Schaufeli and colleagues (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002) agree that engagement is the positive antithesis of burnout, they argue that its structure differs and as such, they developed an engagement measure, the Utrecht Work Engagement Scale (UWES: Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002; Schaufeli, Bakker, & Salanova, 2006) which reflects the unique structure of engagement. As anticipated, the scale is negatively related to burnout scores, however, when factor analyzed the two scales do not perfectly match onto two distinct factors, presumably due to the inherent overlap between the two concepts (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002; Schaufeli, Bakker, & Salanova, 2006). Other studies (e.g., Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002) have shown similar results, namely that both engagement and burnout have a three factor structure and that the two concepts are negatively related, but moderately so indicating they are still distinct constructs.

Current state of engagement

Macey and Schneider (2008) provide a summary and clarification of engagement by first noting that "engagement is a concept with a sparse and diverse theoretical and empirically demonstrated nomological net" (p. 3). Although engagement is a relatively new construct with a small base of empirical and conceptual literature, the concept has resonated with applied practitioners and HR professionals. For instance, one HR consulting firm has stated they "have established a conclusive, compelling relationship between engagement and profitability through

higher productivity, sales, customer satisfaction, and employee retention" (Hewitt Associates LLC, 2005; as quoted in Macey & Schneider, 2008, p. 3). However, there has not been adequate empirical investigation of the engagement concept in order to justify such a strong statement. Additionally, these applied oriented definitions and assertions regarding job engagement lend themselves to the "Jangle fallacy" (Kelley, 1927), or the phenomenon of rebranding an older construct as a new one by name only. This is particularly common with poorly defined constructs that are primarily defined by their antecedents or outcomes. In the case of engagement, it is difficult to differentiate it from other job attitudes, such as motivation or job satisfaction, if it is purely defined as having a positive impact on performance or other job attitudes. As Macey and Schneider (2008) note, much of the work on engagement has revolved around linking a poorly defined construct to organizationally relevant outcomes instead of testing the theory underlying the concept. For instance, Harter, Schmidt, & Hayes (2002) meta-analyzed the relationships between employee satisfaction and engagement with the business unit level outcomes of customer satisfaction, productivity, profit, employee turnover, and accidents. However, their study measures engagement using a 12-item measure addressing employee's involvement, satisfaction, and enthusiasm for work (Harter, Schmidt, & Hayes, 2002), a distinct departure from Kahn's (1990) conceptualization of engagement. As such, more empirical investigation in to both the structure and function of engagement in relation to other related constructs, like flow, job satisfaction, or organizational commitment is needed and serves as the primary goal of the current study.

Although previous work on engagement has avoided theory building or testing, there are notable exceptions. May, Gilson, and Harter (2004) built off Kahn's (1990) work and studied how the three psychological conditions of engagement (meaningfulness, safety, and availability)

mediate the relation between various job characteristics and conditions and the subsequent experience of engagement. In their revised model it was found that all three psychological conditions were positively related to engagement and each condition was influenced by various work conditions, such as coworker and supervisor relations, work role fit, resources, and job enrichment (May, Gilson, & Harter, 2004). Salanova, Agut, and Peiro (2005) surveyed service industry employees to examine organizational resources, engagement, service climate, and customer loyalty. They found that engagement fully mediated the relationship between organizational resources and service climate (Salanova, Agut, & Peiro, 2005). Both of these studies show the importance of organizational resources and job characteristics to the experience of engagement while showing engagement's distinctiveness from job performance, satisfaction, or other job attitudes.

Macey and Schneider (2008) present a framework for untangling the various aspects of engagement which breaks engagement into three types: trait, state, and behavioral. First, engagement can be considered a dispositional, or trait construct. Under this view, engagement is a result of positive affect and various personality styles and dimensions. For instance, Staw (2004) notes that the positive PANAS items all have an active component to them, indicating something more than simple happiness or job satisfaction (Huelsman, Furr, & Nemanick, 2003). Beyond affect, work on positive personalities, such as the proactive personality (Crant, 2000) and the autotelic personality (Nakamura & Csikzentmihalyi, 2002), are related to similar behaviors as engagement, such as persistence and citizenship behaviors. Although engagement is less rarely conceptualized as a dispositional construct, there is evidence that certain types of individuals are more likely to be engaged, show signs of engagement, and seek or craft

environments wherein engagement can occur (Holland, 1997, Schneider, 1987, Schneider, Goldstein, & Smith, 1995).

Another conceptualization of engagement presented in Macey and Schneider (2008) is that of engagement as a behavior. In some literature, engagement is defined as using discretionary effort (Towers-Perrin, 2003) or giving your all (Bernthal, 2004). However, the concept of effort can be elusive where some (Campbell, 1990) consider effort as part of the taxonomy of performance encapsulating consistency of performance and maintaining work levels in difficult situations. Brown and Leigh (1996) show that measuring effort becomes even more difficult given its vague definition. According to Kahn (1990; 1992) and Macey and Schneider (2008), engagement cannot be fully defined as simply effort or extra effort at work. Therefore, engaged employees behave in ways that are fundamentally different than those of less engaged employees and are not simply putting in extra effort (Macey & Schneider, 2008).

The last, and most commonly studied, form of engagement is that of state engagement. This stream of engagement research builds on the related ideas of job satisfaction, commitment, work empowerment, and job involvement (Macey & Schneider, 2008) but incorporates more behavioral, affective, and experiential constructs. According to Erickson (2005; cited in Macey & Schneider, 2008) "Engagement is above and beyond simple satisfaction with the employment arrangement or basic loyalty to the company… Engagement, in contrast, is about passion and commitment – the willingness to invest oneself and expand one's discretionary effort to help the employer succeed" (p. 14). Previous measures of job satisfaction have included aspects of state engagement, such as items on Brayfield and Rothe's (1951) measure of job satisfaction which directly assesses employee enthusiasm. However, most common conceptualizations of engagement go above and beyond satisfaction, measured as positive affect, satiation, or

enthusiasm, to include other positive constructs. Most notable is the work of Schaufeli and

colleagues, whose measure of engagement, the UWES (Schaufeli, Salanova, Gonzalez-Roma, &

Bakker, 2002), classifies state engagement as being comprised of vigor, dedication, and

absorption. Under this classification, vigor is more than extra effort or enthusiasm at work,

dedication is more than basic organizational commitment, and absorption is more than job

involvement (Macey & Schneider, 2008). This discussion of engagement does not intend to

discount those constructs which have seen great utility in I/O research; however, it is done to

show that engagement may be grounded in concepts of satisfaction, commitment, and

involvement, but that the state of engagement provides something greater. In keeping with

Kahn's (1990) original definition, and building off the work of Schaufeli, engaged employees are

investing their full selves in their work and are not simply happy, dedicated workers (Macey &

Schneider, 2008) in the same way that burnt out workers are not simply disengaged workers

(Maslach, Schaufeli, & Leiter, 2001).

Measuring engagement

One of the most important components of a psychological construct is its ability to be

measured in a valid and reliable fashion. As discussed above, engagement is a multidimensional

construct rooted in some of the most measured concepts within I/O such as job satisfaction,

commitment, motivation, and citizenship or extra-role behaviors. However, work on the

measurement of engagement has effectively shown it to be a unique construct. Kahn (1990)

primarily measured engagement through qualitative interviews in order to begin to understand

the construct but a majority of the work on the quantitative measure of engagement emerged

from the previously discussed work on burnout. Maslach, Schaufeli, & Leiter (2001) describe

how originally engagement was measured by the opposite profile on the Maslach Burnout

Inventory (MBI: Maslach & Jackson, 1981). However, as Schaufeli and others made clear, engagement is a distinct construct that, although negatively related to burnout, requires unique measurement. Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002) detail the creation and validation of the Utrecht Work Engagement Scale (UWES). This scale did not show a clear two factor solution with engagement and burnout as entirely distinct constructs. Instead, there was one factor for the core of burnout (exhaustion and cynicism) with a second factor comprising all the engagement items plus the items related to efficacy (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). The two factors were still negatively related and shared between 22-38% of their variance indicating some overlap but not redundancy. Further studies (Schaufeli & Bakker, 2004) showed similar results with engagement and burnout still being negatively related while sharing 10-25% of their variance. Additionally, it was shown that burnout was mainly predicted by job demands and by a lack of job resources, engagement was solely predicted by the availability of job resources (Schaufeli & Bakker, 2004). Lastly, a study sampling employees in 10 countries demonstrated the reliability and validity of a short form version of the UWES which had a similar structure as the original, namely a burnout factor of exhaustion and cynicism with an engagement factor comprised of vigor, dedication, and absorption as well as the efficacy component of burnout (Schaufeli, Bakker, & Salanova, 2006). The psychometric work on engagement further supports the notion that engagement is a state, while negatively related to burnout is still functionally distinct. Macey and Schneider (2008) note that a majority of engagement research gets the concept of engagement correct, most studies fail to measure it adequately, with the exception of studies utilizing the UWES (e.g., Salanova, Agut, & Peiro, 2005; Schaufeli & Bakker, 2004; Schaufeli, Bakker, & Salanova, 2006).

Flow

Moving beyond the general concept of work engagement, the current study seeks to understand the uniqueness of work engagement and flow, a specialized form of task engagement. Beginning in the 1960's, Mihaly Csikszentmihalyi (1975) became interested in understanding why certain individuals persist wholeheartedly in tasks that offer little to no external rewards. To quote:

> In a world supposedly ruled by the pursuit of money, power, prestige, and pleasure, it is surprising to find certain people who sacrifice all those goals for no apparent reason: people who risk their lives climbing rocks, who devote their lives to art, who spend their energies playing chess. By finding out why they are willing to give up material rewards for the elusive experience of performing enjoyable acts, we hope to learn something that will allows us to make everyday life more meaningful. (Csikszentmihalyi, 1975, pp. 1)

Csikszentmihalyi (1975) then posits that these tasks have become intrinsically motivating for the performers, activities which Csikszentmihalyi terms *autotelic*, meaning an activity that is rewarding in and of itself (Nakamura & Csikszentmihalyi, 2002). Intrinsic motivation had been defined and researched at that time (Deci, 1975; See Deci & Ryan, 1985 for a review); however, Csikszentmihalyi (1975) was concerned less with the motivational concepts and more with the subjective phenomenology of the experience itself. After qualitatively studying individuals using a structured interview methodology in a variety of settings with a variety of tasks, mostly art, rock climbing, surgery, and chess, Csikszentmihalyi (1975) noticed common ground among the performers in that they cited enjoyment of the experience as the most common reason for engaging in the tasks. This, then, is the basis for Csikszentmihalyi's (1975, 1990) concept of *flow*, a term Csikszentmihalyi borrows from his early participants who used it when discussing

their experiences during their autotelic activities. From this, further work by Csikszentmihalyi and others has been conducted to better understand the flow experience.

First studied were the pre-conditions under which flow may be experienced with the most researched, and most critical, being a balance between the perceived challenge of the task and the perceived skill of the performer.

Figure 1.1 – Challenge/Skill Balance
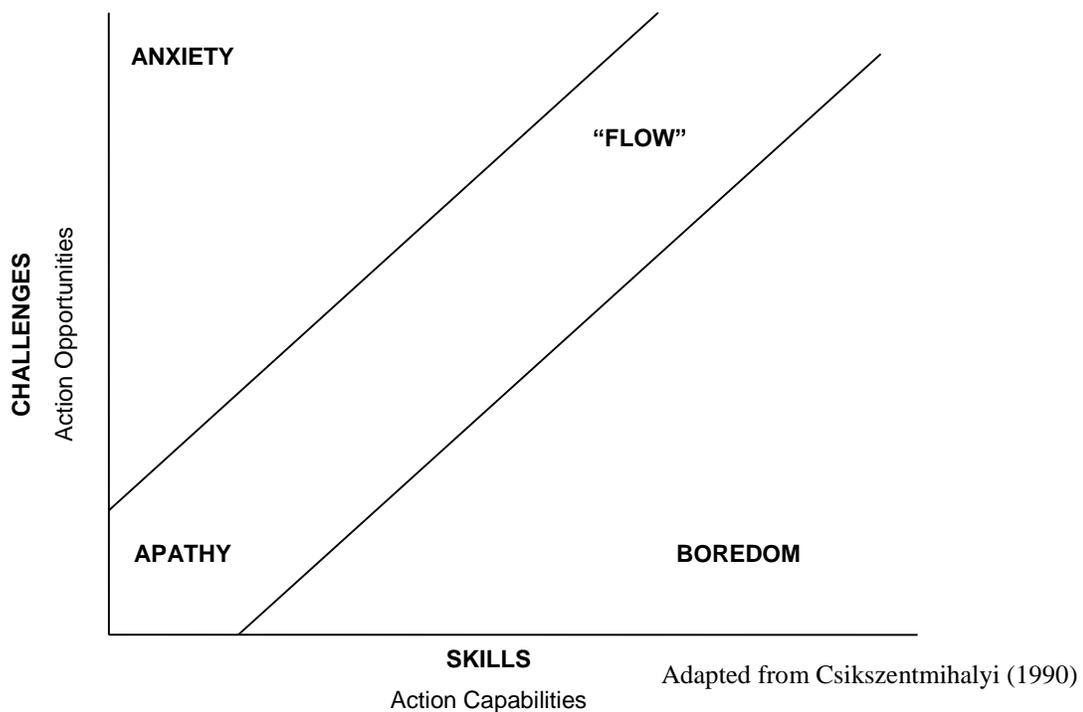
Figure 1.1 provides a graphic illustration of the challenge/skill balance pre-condition for flow which states that flow occurs when an individual feels their skill level equally matches the perceived challenge of the task thereby allowing the individual to fully engage in the task while being adequately, and not overly, challenged. Csikszentmihalyi (1975; 1990) notes that in situations where an individual does not have enough skills to overcome the challenges of the task, they will become anxious and frustrated making it difficult for an individual to become

intrinsically engaged in the task. On the other hand, if the individual has a large perceived skill set but the task does not require many of those skills, the individual will tend to become bored and again find it difficult to engage in the task (Csikszentmihalyi, 1975; 1990). Lastly, research has shown (Csikszentmihalyi, 1990; Csikszentmihalyi & LeFevre, 1989) that tasks in which the individual's perceptions of their skills and their perceptions of the task challenges are both below their desired level, the individual experiences apathy. A common example of an apathetic task is watching television, an activity that requires little skills and does not provide many challenges and as a result is not as engaging or rewarding as other autotelic activities.

Beyond the balance of challenge and skill, goals and feedback are the last components of a task that contribute to the likelihood of flow occurring (Nakamura & Csikszentmihalyi, 2002). At first glance, the presence of goals might be counterintuitive to autotelic activities, which by their definition are activities that have their performance as the sole goal. Csikszentmihalyi (1975) notes that artists may have a goal of a completed painting, or a rock climber may have the goal of scaling a certain wall, however "these goals lose their substance and reveal themselves as mere tokens that justify the activity by giving it direction and determining the rules of action" (pp. 37). To use the example of playing chess, there are clear rules to the game which outline the end goal and the players may also set proximal goals at various points throughout the game, however, these goals merely provide a common framework for both players to exist in and guide participant's behavior. Csikszentmihalyi (1990) notes that the goals of the task should be tied to the challenge/skill balance discussed above in that excessively easy or challenging goals are unlikely to elicit the inherent enjoyment of the flow task.

In addition to the need for goals, autotelic activities provide feedback to the participant regarding their advancement towards the goals or outcomes of the task (Csikszentmihalyi, 1975;

1990). Considering the task must have goals to provide a framework for the autotelic activity, the feedback inherent in the task then provides information as to how well the individual's performance is working within that framework. To use the chess example again, the position of the player's pieces provided clear and direct feedback as to how close to the end goal each participant is. Without a clear context for the task (goals) and clear feedback regarding that context, it is difficult if not impossible to become fully engaged in the activity. Taken in full, a balance between perceived challenge and skills, goals, and clear feedback are the conditions necessary for flow to occur (Csikszentmihalyi, 1990; Nakamura & Csikszentmihalyi, 2009).

Beyond the pre-conditions necessary for flow, Csikszentmihalyi (1975; 1990; Nakamura & Csikszentmihalyi, 2002; 2009) details six characteristics that describe the subjective experience of the flow state.

- Intense and focused concentration on what one is doing in the present moment

- Merging of action and awareness

- Loss of reflective self-consciousness

- A sense that one can control one's actions

- Distortion of the temporal experience

- Experience of the activity as autotelic or intrinsically rewarding

Based on the six characteristics of flow uncovered through Csikszentmihalyi's work (1975; 1990) there are several aspects of the flow experience to highlight. First, flow is an intense and engaged state. Individuals are focused solely on the task at hand and are not focused on the people or environment surrounding them. They feel a direct sense of control over their actions and those actions move seamlessly from thought to implementation. Lastly, at the root of the flow experience, the task becomes extremely rewarding to the individual through feelings of

enjoyment and pleasure with the process itself. Csikszentmihalyi (1975) provides a wonderful account from a rock-climber detailing the flow experience:

> The mystique of rock-climbing is climbing; you get to the top of a rock glad it's over but really wish it would go forever. The justification of climbing is climbing, like the justification of poetry is writing; you don't conquer anything except things in yourself… The act of writing justifies poetry. Climbing is the same: recognizing that you are a flow. The purpose of the flow is to keep on flowing, not looking for a peak or utopia but staying in the flow. It is not moving up but a continuous flowing; you move up only to keep the flow going. There is no possible reason for climbing except the climbing itself; it is a self-communication. (pp. 47-48)

Research on flow

Following Csikszentmihalyi's (1975) early work on defining flow, research began empirically investigating the construct to better understand its form and function. It began to be seen that the characteristics of the flow experience detailed by Csikszentmihalyi (1975, 1990) were consistent across various domains, cultures, genders, ages, and types of activity (Asakawa, 2004; Csikszentmihalyi, 1996; Csikszentmihalyi & Robinson, 1990; Della Fave & Massimini, 2004; Jackson, 1995; Jackson & Marsh, 1996; Perry, 1999).

Given that flow was originally studied in mostly artistic and athletic situations, Csikszentmihalyi and LeFevre, (1989) set out to examine whether flow occurred at work, and if so, how often. The results of their surveys show that flow, a majority of the time, happens in the workplace, regardless of the type of workplace (Csikszentmihalyi & LeFevre, 1989). Additionally, their study shows that the flow experience is still perceived as positive and

enjoyable regardless of the setting, adding further support to the robustness of the flow state (Csikszentmihalyi & LeFevre, 1989).

Much of Csikszentmihalyi's (1975; 1990; & LeFevre, 1989) early work on flow revolves around the presumption that flow is a positive state. The early qualitative work provides accounts of individuals talking positively about flow and discussing it as an enjoyable experience (Csikszentmihalyi, 1975). Subsequent research has then sought to verify the specifics by which flow is a positive state. Rogatko (2009) divided participants into two groups, a high flow induction group and a low flow induction group. High and low flow was then induced in the two groups, respectively, and results showed that positive affect was highest in the high flow group and that the amount of flow experienced, as measured by the FSS, mediated the relationship between the group and positive affect (Rogatko, 2009). This adds to the breadth of empirical literature demonstrating the positive relationship between flow and positive affect (e.g.: Csikszentmihalyi & LeFevre, 1989; Fullagar & Kelloway, 2009; Mundell, 2000; van Ittersum, 2013).

Beyond the robust relationship with positive affect, flow has been shown to function as a positive state in other ways as well. Specifically, flow has been shown to act in accordance with Fredrickson's (2001) Broaden-and-Build theory of positive emotions which states that positive states increase cognitive resources and buffer against future negative experiences. Flow has been shown to not only increase positive affect, but flow experiences buffer against negative affect experienced during challenging tasks (van Ittersum, 2013; van Ittersum, Fullagar, & Knight, under review). In other words, flow fits the upward spiral of the Broaden-and-Build theory (Fredrickson, 2001) in regards to positive affect, but it also provides resiliency which allows individuals to persist in difficult tasks.

In addition to the work linking flow to general outcomes, like positive affect and resilience, other work has examined the situational specific outcomes of flow. For instance, flow has been linked with commitment and achievement during high school (Carli, Della Fave, & Massimini, 1988; Mayers, 1978, Nakamura, 1988). In university level students, flow experiences predicted end of the semester performance (Engeser, Rheinberg, Vollmeyer, & Bischoff, 2005). In other educational environments, teacher's flow experiences have been linked to student's cognitive engagement (Basom & Frese, 2004) and to students' own experiences of flow (Bakker, 2005). Most notable, however, is that flow has been linked to improved performance in a variety of settings. Flow is predictive of progress in school (Csikszentmihalyi, Rathunde, & Whalen, 1993), success in sporting competitions (Jackson, Kimiecik, Ford, & Marsh, 1998), self- and coach-rated performance in sport (Bakker, Oerlemans, Demerouti, Slot, & Ali, 2011), and in-role and extra-role performance at work (Demerouti, 2006). Therefore, flow has consistently been shown to be a beneficial and positive state that can have positive influences on the mood and performance of those who engage in it.

Given that flow has been shown to be a positive state and has been linked to numerous positive outcomes, other research has focused on increasing flow experiences in a variety of settings, especially the workplace considering that is where flow is most likely to occur (Csikszentmihalyi & LeFevre, 1989). Demerouti (2006) notes that the pre-conditions of flow (balance, goals, and feedback) are very similar to some of the core motivating job characteristics in the Hackman and Oldham (1975) model. Within the job context, the pre-conditions to flow can be considered job resources in the same way Hackman and Oldham (1975) consider their motivating job characteristics as job resources. Bakker (2005) demonstrated that various job resources, such as autonomy and performance feedback, acted as antecedents to the flow

experience in their sample of music teachers and students. It has also been found that

organizational resources, including clear goals, can facilitate the experience of flow

longitudinally (Salanova, Bakker, & Llorens, 2006). Lastly, Demerouti (2006) directly examined

job characteristics and flow and found a positive relationship. Additionally, she also found a

positive relationship between flow experiences and job performance, but only for conscientious

individuals. Fullagar and Kelloway (2009) also examined job characteristics and flow and in

their study found that skill variety and autonomy were the strongest predictors of flow in

academic work.

Measuring flow

As with any psychological construct, especially those dealing with personal, subjective

experiences, measurement is a key issue that needs to be addressed. As detailed,

Csikszentmihalyi (1975) first studied flow through qualitative methods that allow for rich

descriptions that can form the basis for theory building (E.g.: Jackson, 1995; Neumann, 2006;

Perry, 1999; Reed, Schallert, & Deithloff, 2002). However, qualitative research is not conducive

to wide-scale, empirical and experimental studies. As such, research on flow then moved towards

the creation of paper and pencil measures to be used to assess flow. Csikszentmihalyi and

Csikszentmihalyi (1988) created a questionnaire that provided descriptions of the flow

experience and asked people to decide whether, how often, and in what activities they

experienced feelings similar to those described. Mayers (1978) created a 10-item measure to

crudely assess the frequency with which an individual experiences flow. Most promising is the

psychometric work by Jackson and colleagues (Jackson & Ecklund, 2002; 2004; Jackson &

Marsh, 1996) that resulted in the Flow State Scale (FSS) which was originally designed to assess

flow in sport activities but has successfully been used in a wide range of activities and task

domains. The FSS has subsequently been used with success in a variety of work and non-work settings (E.g.: Fullagar & Kelloway, 2009; Rogatko, 2009; van Ittersum, 2013).

Jackson and colleagues have also expanded their work on the measurement of flow by creating two short forms based on their original flow measure. Martin and Jackson (2008) detail the short and core flow measures, which are nine and ten items respectively. The short flow measure is based directly on the FSS (Jackson & Ecklund, 2002; Jackson & Marsh, 1996) but instead of four items per flow factor, they have reduced it to one item per factor. On the other hand, the core flow measure simply utilizes ten items which all address the holistic, core of the flow experience. For instance, example items read "I am 'in the zone'" and "I am 'tuned in' to what I am doing" (Martin & Jackson, 2008). Based on their preliminary analyses, both scales appear promising and were highly correlated indicating they are measuring highly related, or identical, constructs (Martin & Jackson, 2008).

Lastly, some research has sought to create flow measures for specific domains, such as the work place (Bakker, 2008). The WOrk-reLated Flow inventory (WOLF: Bakker, 2008) conceptualizes flow at work as revolving around three primary dimensions; absorption, work enjoyment, and intrinsic motivation which closely mirror the central components of Csikszentmihalyi's (1975; 1990) traditional conceptualizations of flow. However, Bakker's (2008) conceptualization of flow at work departs from most definitions of flow in two important ways. First and foremost, Bakker (2008) defines flow in relation to work as a whole and does not relate it to any specific task and as such it is more similar to measures of overall engagement than measures of flow. Csikszentmihalyi (1975; 1990) notes that flow is always discussed in relation to a specific task that has been supported through other experimental research (e.g.: Fullagar & Kelloway, 2009; Nielsen & Cleal, 2010; Rogatko, 2009). The WOLF (Bakker, 2008)

also differs from most flow research in that it classifies enjoyment as a main component of the flow experience itself instead of an outcome of the experience. Csikszentmihalyi (1975), in detailing the qualitative interviews that he used to develop the flow construct, notes that many of his subjects were focused so deeply on the task at hand they had little ability or desire to focus on their mood. Instead, individuals felt the most satisfaction when the task was completed which reinforced their intrinsic motivation to do the task in the first place (Csikszentmihalyi, 1975). Additionally, Fullagar and Kelloway (2009) conducted cross-lagged regressions on subjects and results indicated that flow predicted mood and that mood did not predict flow. Other research utilizing self-selected tasks (Rogatko, 2009) and assigned experimental tasks (van Ittersum, 2013) also showed similar results. Given these findings, measures of flow should not address enjoyment, as the WOLF does, considering enjoyment is an outcome of flow, not a component of the experience itself.

One final consideration in terms of flow measurement and research is the use of Experience Sampling Methodology. Csikszentmihalyi and Larson (1987) provide a full description of the methodology, but essentially the method revolves around participants being 'paged' or signaled to answer brief questions about their current experience. This is done to overcome the problem of making participants reflect on their past experiences, which was the basis of Csikszentmihalyi's and others qualitative work (Nakamura & Csikszentmihalyi, 2002). By using ESM, researchers can capture momentary experiences and feelings while being minimally intrusive. This method has allowed for more detailed study of the delicate conditions of flow, while also allowing for causal studies. For instance, Fullagar and Kelloway (2009) used an ESM approach to studying flow in upper level architecture students and were able to show

that flow is predictive of positive affect, and not vice versa, while also indicating that flow is primarily situational and not dispositional.

In sum, the evolution of flow measurement has moved from purely qualitative to now include a variety of qualitative and quantitative measures. This allows researchers a variety of techniques, each with their own strengths and limitations, to better understand the complex nature of flow and its relationship with antecedents and outcomes.

Flow and Engagement

As noted by Donaldson and Ko (2010), a majority of the research in positive organizational psychology over the past ten years has been conceptual in nature. As such, many of the constructs discussed primarily in conceptual terms now require empirical investigations to more fully understand their structure and functioning. Within the literature on engagement, several authors (e.g.: Kahn & Fellows, 2013) note that engagement is conceptually related to the flow construct, however, to date, there is no empirical study that directly examines the dimensionality of these two constructs. Given that flow is an older construct, Csikszentmihalyi's (1975; 1990) early work makes no mention of work engagement. However, Csikszentmihalyi (1990) discusses flow in the workplace and Csikszentmihalyi and LeFevre (1989) show that flow is more likely to occur at work than at leisure. In these discussions of flow at work there is clear mention that a worker in flow is fully invested and immersed in their work and that this is enjoyable to the individual. This is similar to Kahn's (1990) early work on engagement in which he defined the construct as an individual investing their whole self into their task behaviors. This is very reminiscent of flow in that both describe individuals fully investing in their work. Lastly, Macey and Schneider (2008) propose that flow is a facet of overall work engagement, a proposition that has yet to be empirically tested.

To conclude, the following studies aim to empirically examine the relationship between flow and engagement as well as their relationship with other outcomes. Study 1 seeks to determine the discriminant validity of flow and engagement through the use of factor analytic techniques while Study 2 does the same through the use of relative weights analysis. The results of the two studies will be used to clear confusion between the seemingly related engagement concepts. Specifically, these results will have implications for both research and practice. For instance, Study 2 will demonstrate which engagement concept is most predictive of various work outcomes. As such, practitioners will gain insight into ways in which they may enhance those outcomes through interventions aimed at either flow or overall engagement.

Chapter 2 - Study 1

Due to the confusion surrounding the relationship between flow and engagement, the goal of the first study was to understand the dimensionality of flow and engagement. As Kahn and Fellows (2013) as well as Macey and Schneider (2008) mention, flow is posited to be an aspect of overall work engagement, however, this has yet to be empirically tested. Flow and engagement have both been linked to positive work outcomes (e.g.: Fullagar & Kelloway, 2009; Christian, Garza, & Slaughter, 2011). This has only served to further add to the confounding of the two constructs.

Despite the overlap between the flow and engagement constructs, the theory behind the constructs indicates that they should each be separate, but related, constructs. First, flow has always (Bakker, 2008 being the most notable exception) been discussed, and measured, as a within-individual, task-specific cognitive state of engagement. Csikszentmihalyi's (1975; 1990) work on flow has always focused primarily on one individual engaging in one, specific, autotelic task. For instance, three of the nine components of flow are considered pre-conditions which are characteristics of the task itself (Csikzentmihalyi, 1975; Nakamura & Csikszentmihalyi, 2002). Additionally, the remaining six components of the flow state are still intimately tied to the task experience itself. For instance, intense and focused concentration on the task itself, a merging of action and awareness, and a sense that one can control one's own actions. All of these components refer to the specific interaction between the individual, their abilities, and the task at hand.

Moving beyond the theory underlying flow, research on flow has conceptualized and measured the construct as a within-individual, task specific behavior. In fact, Csikszentmihalyi and colleagues pioneered the Experience Sampling Methodology specifically to better study flow

states (Csikszentmihalyi & Larson, 1987). ESM allows for momentary assessments of flow while the individual engages in a task to better understand flow and its transient, task dependent nature. Furthermore, research using ESM has shown that flow is primarily situational, and not dispositional, in nature (Fullagar & Kelloway, 2009). ESM depicts flow as a complex and dynamic state. Nonetheless, flow has been assessed using traditional cross-sectional methods (E.g.: Martin & Jackson, 2008; Rogatko, 2009). The present study used a cross-sectional approach but assessed flow as a state-dependent construct by asking participants to refer to a specific task as a frame of reference when completing the flow measure.

On the other hand, the theory and research on engagement conceptualizes it as a more dispositional state that focuses on work in general and not a specific task. Macey and Schneider (2008) discuss how engagement has been specifically conceptualized as both a trait, a state, and a behavior. Additionally, they assert that engagement is a multidimensional construct that is "not only a set of constructs, but also a tightly integrated set, interrelated in known ways, comprising clearly identifiable constructs with relationships to a common outcome" (Macey & Schneider, 2008; 24). As such, engagement is a broad term that incorporates aspects of task engagement (i.e. flow), while also incorporating dispositional and behavioral components. This is also consistent with the ways in which engagement has been measured and studied. For some, (e.g.: Maslach, Schaufeli, & Leiter, 2001) engagement is simply the opposite profile of burnout on the Maslach Burnout Inventory (Maslach & Jackson, 1981). This conceptualization is primarily dispositional in that it is an individual's specific response to their work and the work environment. Building off the work of Maslach and others, Schaufeli et. al. (2002) developed the UWES which has become the most common engagement instrument and is both situational and dispositional. It includes items that relate to the characteristics of individuals at work, such as

"At my job I feel strong and vigorous" and "When I am working, I forget everything else around me" (Schaufeli, et. al., 2002). Kahn and Fellows (2013) further elaborate on the situational and dispositional aspects of engagement by detailing two types of interventions that can be implemented in workplaces to enhance employee engagement. The first family of interventions, Creating Contexts, are focused on the work context and as such address the situational components of engagement such as creating clear expectations for employees and creating transparent and fair processes (Kahn & Fellows, 2013). The second intervention method, Ennobling Workers, focuses on the dispositional characteristics of engagement and focuses on enhancing feelings of vigor and involvement through organizational practices like job crafting and developmental assessment (Kahn & Fellows, 2013).

Lastly, the measurement instruments for both engagement and flow further demonstrate their dispositional and/or situational focus. The UWES uses the job as a whole as a reference point and its items reflect the dual nature of the engagement construct. For instance, items such as "To me, my job is challenging" and "At my work, I feel bursting with energy" incorporate both situational and dispositional aspects (Schaufeli, et. al., 2002). On the other hand, the FSS is focused solely on the task and the individual's experiences with that task. In addressing the nine components of flow, the FSS has items that assess the task in and of itself, such as "My goals were clearly defined", in addition to items which relate to the individual's experience with that task, such as "I had total concentration" (Jackson & Marsh, 1996). Finally, a majority of engagement research (E.g.: Rich, Lepine, & Crawford, 2010; Salanova, Agut, Peiro, 2005) has been cross-sectional in nature and utilizes between-individual comparisons whereas as flow research frequently utilizes longitudinal and within-individual analysis (e.g.: Fullagar & Kelloway, 2009; van Ittersum, 2013).

Given the above, the first study sought to understand the statistical uniqueness, or discriminant validity, of flow and engagement. Considering engagement theory asserts that flow is an aspect of overall job engagement, it was hypothesized that flow and engagement would be related (Macey & Schneider, 2008; Schaufeli, et. al., 2002). However, given the intense, task specific nature of flow, it was also posited that flow would form a distinct, but related, factor from engagement. Figure 2.1 visualizes the hypothesized relationship between flow and engagement. That model was then compared to Figure 2.2, a unidimensional model that represents the argument that flow and engagement are simply the same construct with different names. Additionally, research on engagement has conceptualized it as both a single-factor and a multi-factor construct. Specifically, some studies have demonstrated that engagement, when measured with the UWES, best fits a three-factor structure comprised of vigor, dedication, and absorption (Bakker & Demerouti, 2008; Mills, Culbertson, & Fullagar, 2011; Schaufeli, Bakker, & Salanova, 2006; Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). In a similar fashion, although not seen as frequently in empirical research, flow can be thought of as having two distinct factors; pre-conditions to the flow experience and characteristics of the experience itself (Csikszentmihalyi, 1975, 1990; Nakamura & Csikszentmihalyi, 2002). As a result, a five-factor model (Figure 2.3) was also developed which was comprised of the three factors for engagement and the two factors for flow.

As Farrell (2010) describes, discriminant validity is the extent to which a latent variable, in this case flow, discriminates from other latent variables, in this case overall work engagement. As Anderson and Gerbing (1988) describe, there are numerous approaches to conducting discriminant validity analyses, but many of which revolve around the use of Structural Equation Modeling (SEM) or Confirmatory Factor Analysis (CFA) techniques and as such the current

study will utilize those techniques. Specifically, the three proposed models (Figure 2.1, 2.2 & 2.3) were assessed for fit with the data in order to see if flow forms a separate, unique latent factor from that of engagement. This method is consistent with methodological research on theory building and testing (E.g.: Anderson & Gerbing, 1988; Farrell & Rudd, 2009; Farrell, 2010). Considering this was a specific case of finding discriminant validity, there are numerous methods discussed within the literature. Campbell and Fiske (1959) provide one of the earliest techniques, referred as the multitrait-multimethod (MTMM) matrix which analyzes convergent or discriminant validity by measuring multiple constructs through multiple measurement techniques and then analyzing the patterns of correlations. However, more recent statistical techniques allow for more precise examination of the relationships between constructs. Specifically, the use of Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA) allows one to model the proposed relationships and then examine that model's fit to the data. For example, Carless (1998) used CFA to gauge the discriminant validity of the MLQ, a popular measure of transformational leadership. Additionally, Farrell (2010) details how the MTMM approach is no longer acceptable in and of itself to determine discriminant validity. In their paper they explain that one should always use CFA techniques to determine discriminant validity, especially because CFA and SEM techniques provide correlations and modification indices which can guide the researcher in understanding the true nature of the relationships between constructs. Considering there are no widely accepted, valid, and/or reliable measure of flow and engagement that do not rely on self-report, the use of a MTMM matrix is not feasible. However, the differential relationships flow and engagement have with relevant outcomes will be addressed in Study 2. Given this information, a CFA approach to understanding the relationship between flow and engagement is most applicable.

Hypothesis 1: Flow and engagement are distinct, but related, constructs.

Figure 2.1- Hypothesized Two-Factor Model of Flow and Engagement
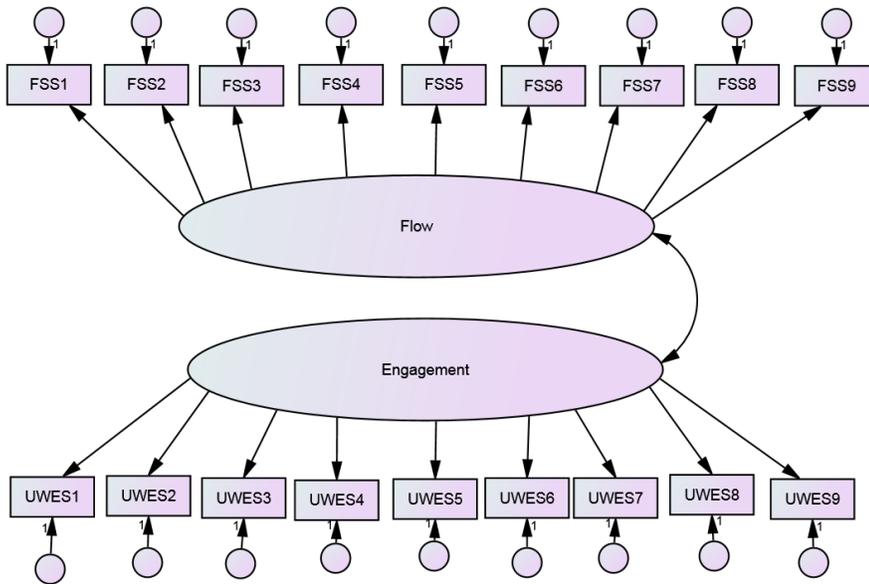
Figure 2.2- Hypothesized One-Factor Model of Overall Engagement
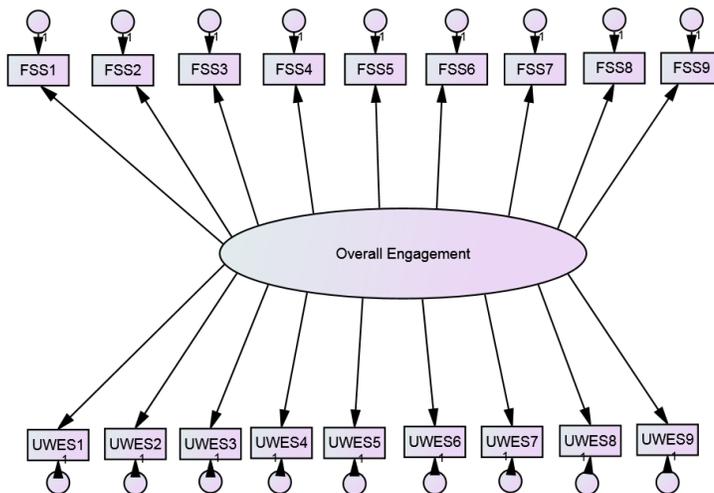
Figure 2.3 - Hypothesized Five-Factor Model of Engagement and Flow
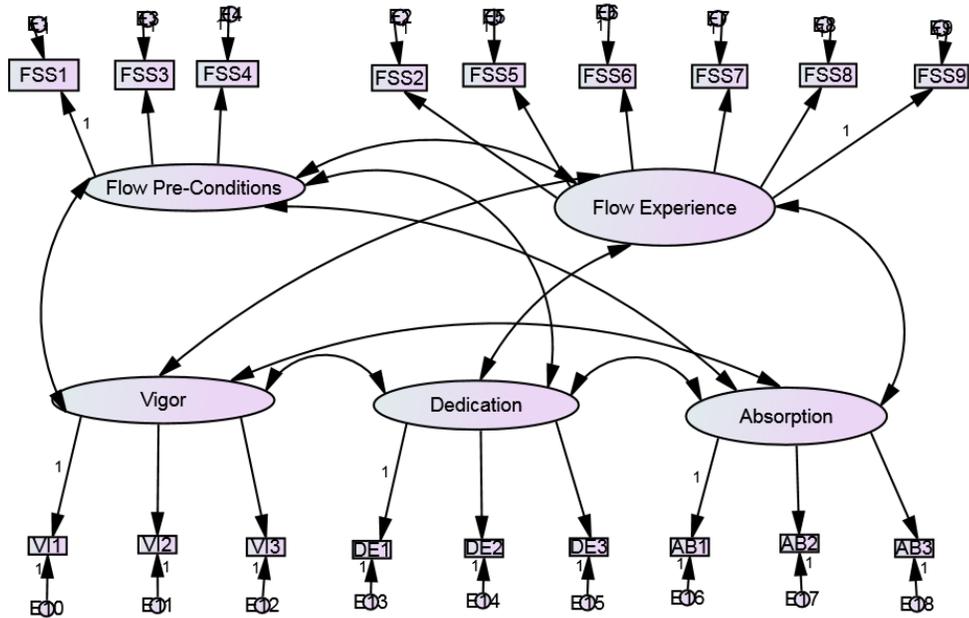
See Appendix B and C for the specific items that correspond to the figures.

Method

Participants

The first study utilized working adult participants recruited through the online service mTurk. This service, which is run by Amazon.com, allows individuals to post tasks which require human participation or interaction. Posters set a price per task based on length and difficulty and then participants, if eligible, are able to complete the tasks to receive payment. In the current study, participants were paid $.25 for completing the measures of interest. A total of 862 participant responses were collected. The surveys were completed online using Qualtrics and were presented as follows. First, participants were given informed consent that described the

nature of the study and what they were to expect. If they declined informed consent, the survey closed immediately. If they granted consent, they were given the demographics measure followed by either the flow or engagement scale that were presented in full, in a random order. Following the measures, they were shown debriefing information and given a random code to enter into mTurk that allowed them to receive their payment.

Measures

Demographics

The surveys for study 1 included the demographic items of age, gender, race, job title, job tenure, and average hours worked per week. The sample had a mean age of almost 31, a median age of 28, a minimum age of 18 and a maximum age of 71. Overall, the sample was 57.7% male and 68.9% White or Caucasian, 16.8% Asian, 5.3% Hispanic or Latino, 4.3% Black or African American, and below 3% for all other races. The most common occupations for the sample were cashiers (roughly 2.5%), IT workers (roughly 2%), and sales associates (roughly 2%). In the sample, a full range of retail, professional, academic, and service industry jobs were represented. Nearly 50% of participants reported working between 30 and 40 hours a week. Lastly, 31% of participants had been in there job for 2-5 years, 28% 6 months to 2 years, and 28% 5 or more years. Based on this demographic information, this sample appears to be a diverse and representative working adult sample.

Flow

For study 1, flow was assessed using the Short Flow Scale (Martin & Jackson, 2008). This measure is comprised of 9 items with one item for each facet of flow. As discussed previously, three of the facets of flow (challenge/skill balance, clear goals, and feedback) are considered pre-conditions so with this scale one is able to differentiate between the measurement

of the pre-conditions and the measurement of the experience. Example items include "I feel I am competent enough to meet the high demands of the situation" and "I have a strong sense of what I want to do". Each item is answered using a typical 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree". This scale is the result of shortening the original Flow State Scale (Jackson & Marsh, 1996), which has been used extensively in flow research (e.g.: Fullagar & Kelloway, 2009; Rogatko, 2009; van Ittersum, 2013). Specifically, the items which had the highest loadings on each flow factor and were therefore most representative of that factor were used to create the short form version (Martin & Jackson, 2008). In the current study, alpha for the short flow scale was found to be .76 which is generally considered acceptable (Nunnally & Bernstein, 1994; Schmitt, 1996).

Engagement

Engagement was measured in study 1 using a short form the Utrecht Work Engagement Scale (UWES: Schaufeli & Bakker, 2004; Schaufeli, Bakker & Salanova, 2006). In keeping consistent with engagement theory, specifically the work of Schaufelli and colleagues, the scale is broken into three factors; vigor, dedication, and absorption (Schaufelli, et. al., 2002). Cronbach's alpha for the whole scale was found to range from .85 to .92 in a validation study across 10 countries (Schaufeli, Bakker & Salanova, 2006). In the current study, alpha was found to be .93 for the overall scale. Although this alpha value is slightly high, Cortina (1993) describes how alpha is generally increased due to high inter-item correlations, which are present in the UWES data. Therefore, an alpha of .93 is considered acceptable (Cortina, 1993; Nunnally & Bernstein, 1994; Schmitt, 1996) given the item and factor correlations for the scale.

The shortened form of the UWES is being used both for convenience reasons and because some (Mills, Culbertson & Fullagar, 2011) have found it to better represent the three-

factor structure of engagement than the original. Specifically, Mills, Culbertson, and Fullagar (2011) examined the construct validity and factor structure of engagement as measured by the UWES-17 and UWES-9 in several samples and found that both versions of the UWES fit a 3-factor structure more than a single factor structure. However, in several samples the 9-item version had a more clear and consistent 3-factor structure and therefore should be equally, if not more, beneficial to the measurement of work engagement (Mills, Culbertson, & Fullagar, 2011).

Results

Prior to conducting the SEM analyses with the data from Study 1 it was screened for missing data and adherence to assumptions, namely normality and freedom from outliers, missing data, or impossible data points. The original sample consisted of 862 participants, however, any cases in which there were missing values in either measure of interest were removed. This resulted in an overall sample of 776. Next, the data were screened for outliers using a method detailed by Tabachnick & Fidell (2007). Any variable with a Z-Score above 3.29 was considered an outlier and discarded, however, there were no outliers using that criteria. Next, histograms were examined to determine the shape of the distributions for both scales and both approximate normal. Skewness and Kurtosis statistics were examined as well, with both scales generating skewness values less than +/-1 which would indicate no concern (Tabachnick & Fidell, 2007). Lastly, a scatterplot was generated between scores on both measures to check for linearity which appeared acceptable.

Following screening of the data, bivariate correlations for the scales and sub-scales were examined. See Table 2.1 for all correlations. Overall, the complete flow and engagement scales were moderately correlated ($r=.521$, $p<.01$). In addition, the experience of flow sub-scale had a higher correlation with engagement ($r=.523$, $p<.01$) than did the pre-conditions to flow ($r=.348$,

p<.01). Correlations between the sub-scales of engagement and overall flow were also in the moderate range (Vigor: *r=.502, p<.01*; Dedication: *r=.483, p<.01*; Absorption: *r=.458, p<.01*). Given the size of the overall sample (N=776), the moderate size of the correlations lends preliminary evidence to the notion that flow and engagement are related, yet distinct.

Table 2.1- Overall Correlations

	1	2	3	4	5	6	7
1. Overall Flow	(.76)						
2. Flow Pre-Conditions	.83**	(.77)					
3. Flow Experience	.91**	.59**	(.63)				
4. Overall Engagement	.52**	.35**	.52**	(.93)			
5. Vigor	.50**	.32**	.52**	.93**	(.84)		
6. Dedication	.48**	.34**	.47**	.94**	.82**	(.89)	
7. Absorption	.46**	.30**	.46**	.91**	.74**	.77**	(.82)

**=Significant at *p<.01*. Alpha scale reliabilities are given in parentheses on the diagonal.

Prior to examining the hypothesized models, a purely exploratory factor analysis was conducted to help explore the factor structure without using any constraints. Therefore, a Principle Components Analysis was conducted using direct oblimin rotation to allow for correlated factors. The scree plot from this analysis plateaued at 3 factors, indicating there was evidence that the data did not fit a one factor solution. Examination of the pattern matrix indicated two strong factors, closely corresponding to the flow and engagement items. All nine engagement items and one flow item, "The experience is extremely rewarding", loaded above .7 on the first engagement factor. Next, five flow items loaded between .59 and .81 on the second factor. Last, two flow items ("The way time passes seems to be different than normal" and "I do things spontaneously without having to think") loaded on a third factor at .80 and .64 respectively. Therefore, results of this exploratory analysis support the notion that there are at least two distinct flow and engagement factors, however, this was further examined using SEM.

Following the preliminary analyses, a random sample of 200 participants was pulled from the overall data to form a hold-out sample. This resulted in a large sample of 576 participants with no missing data. This data was then fit to the competing, hypothesized models. First, the one-factor model was analyzed (Figure 2.2) which resulted in relatively poor fit (χ^2(135)=1487.075, p<.001, GFI=.721, PGFI=.569, CFI=.765, RMSEA=.132). Although there are a variety of fit indices one can use in evaluating the adequacy of a model, some are more commonly reported than others. The χ^2 statistic is generally always reported, however, due to the large sample nature of SEM analyses, χ^2 is overly sensitive and does not provide a clear indication of fit. Therefore, other fit indices must also be reported. The Goodness of Fit Index (GFI) and Parsimonious Goodness of Fit index (PGFI) are two of the most commonly reported. The GFI is presented as a proportion of variance in the sample that can be explained by the estimated population covariance matrix and the PGFI is a variation of the GFI which accounts for the degree of parsimony in the model (Byrne, 2001; Tabachnick & Fidell, 2007). Both indices range from 0 to 1, with values close to 1 indicating better fit. Next, the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) compare the specified model's fit to that of other models, namely the null model with the CFI and a fully saturated model with the RMSEA. Both indices range from 0 to 1, with values closer to 1 indicating better fit for the CFI and values closer to 0 indicating better fit with the RMSEA (Byrne, 2001; Tabachnick & Fidell, 2007).

Following analysis of the one-factor model, the five-factor model (Figure 2.3) was examined. This model fit the data better than the single-factor model (χ^2(125)=943.847, p<.001, GFI=.835, PGFI=.611, CFI=.858, RMSEA=.107). Next, the two-factor model (Figure 2.1) was analyzed and resulted in better fit than the one-factor but was not better than the five-factor

($\chi^2(134)=1139.169$, $p<.001$, GFI=.813, PGFI=.637, CFI=.825, RMSEA=.114). A chi-square

difference test was also performed comparing the two-factor to the single-factor model resulting

in $\chi^2_{diff}(1)=347.906$, $p<.001$ which would indicate that engagement and flow data do not form a

single-factor.

Table 2.2 - Overall Fit Indices

Model	χ^2	df	GFI	PGFI	CFI	RMSEA
			Fit Indices			
One Factor	1487.08	135	.721	.569	.765	.132
Two Factor	1139.17	134	.813	.637	.825	.114
Five Factor	943.85	125	.835	.611	.858	.107
Two Factor Modified	856.58	134	.851	.667	.875	.097

Following examination of the three hypothesized models, modification indices were

examined to help guide adjustments to the models in order to improve fit. Table 2.3 presents the

modification indices from the hypothesized two-factor model.

Based on the modification indices, results of the EFA, and theoretical considerations, a

modified two factor model was developed (Figure 2.4). This model was identical to the

hypothesized two factor model in all but two ways. First, this model added the enjoyment flow

item ("The experience is extremely rewarding") to the prediction of the engagement factor in

addition to its loading on the flow factor. It is of note that this change was done for both

empirical and theoretical reasons. As some note (E.g.: Byrne, 2001; Tabachnick & Fidell, 2007),

modification indices should guide the researcher about ways in which the model may be

improved, although the indices provided are purely empirical and as a result many of them may

not make theoretical sense. However, in the current study this modification does fit with

engagement theory. Specifically, as Macey and Schneider (2008) note, engagement has been

conceptualized as a state, trait, and behavior and the UWES incorporates situational and

dispositional aspects to the measurement of engagement. Therefore, it should fit that one of the most dispositional items from the FSS, one that directly assesses the enjoyment with the task, would also predict the overall experience of engagement. In other words, if individuals enjoy their work tasks, specifically primary work tasks that allow for flow, then this should also predict their dispositional experience of engagement.

Table 2.3 - Modification Indices for Two-Factor Model

Path	Modification Index	Parameter Change
AB3 <-- FLOW	5.964	-.221
DE3 <-- FLOW	10.563	.242
DE2 <-- FLOW	5.578	-.164
VI2 <-- FLOW	6.388	.175
FSS9 <-- ENG	142.464	.701
FSS9 <-- AB3	6.034	.030
FSS9 <-- VI1	6.007	.031
FSS9 <-- AB2	5.205	.025
FSS9 <-- AB1	6.408	.028
FSS9 <-- DE3	6.092	.026
FSS9 <-- DE2	22.904	.057
FSS9 <-- DE1	12.447	.040
FSS9 <-- VI3	15.199	.050
FSS9 <-- VI2	4.737	.026
FSS4 <-- ENG	13.060	-.120
FSS2 <-- ENG	6.630	-.154
FSS1 <-- ENG	9.758	-.104

Note: Modification Index shows how much the χ^2 value would decrease if the path were freely estimated. Parameter change provides the expected change and direction for each fixed parameter.

In addition to the added link between the enjoyment flow item and engagement, the time distortion flow item ("The way time passes seems to be different than normal") was excluded altogether. This decision was based on both the EFA results and prior work on flow. In several studies (e.g.: van Ittersum, 2013) the time distortion item(s) has had the weakest relationship with the overall flow construct. Additionally, as Csikszentmihalyi (1990) notes, some individuals

in flow report time speeding up while some believe that time slows down. This discrepancy has yet to be directly addressed within flow research and as a result the time distortion items generally provide the weakest factor loadings on the overall flow construct (Jackson & Marsh, 1996). Therefore, the loadings for the time distortion item were not included for flow. The resulting model (Figure 2.4) subsequently fit the data best ($\chi^2(134)=856.584$, $p<.001$, GFI=.851, PGFI=.667, CFI=.875, RMSEA=.097).

Figure 2.4 - Two Factor Modified Model
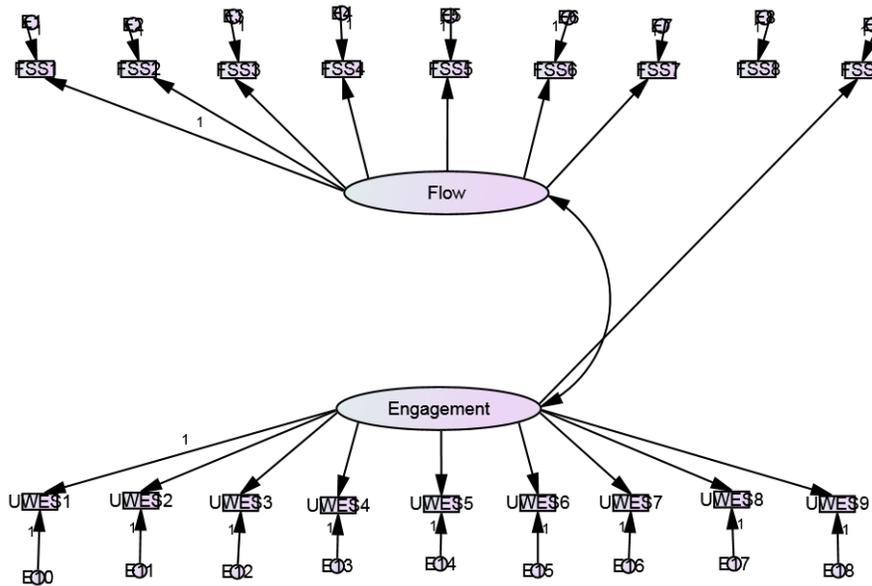
After conducting the initial model tests, the modified two-factor model was tested again using the holdout sample. As stated earlier, the holdout sample consisted of 200 random participants pulled from the overall sample, after it had been screened and cleaned of missing data. Results of the analysis using the holdout sample are as follows; $\chi^2(135)=472.432$, $p<.001$, GFI=.789, PGFI=.623, CFI=.840, RMSEA=.112. In examining the fit using the holdout sample,

the model does not fit as well, however, the fit is expected to be slightly worse considering the holdout sample is significantly smaller. The biggest difference between fit indices is between the two GFI indices. However, the GFI has been shown to be moderately influenced by sample size (Byrne, 2001; Tabachnick & Fidell, 2007).

Discussion

The goal of Study 1 was to determine the structure and discriminant validity of flow and engagement through the use of CFA techniques. Specifically, it was hypothesized that flow and engagement would form separate, albeit related, factors. Overall, results of the study supported this hypothesis and more so, the single factor solution provided the worst fit to the data. Implications for these findings will be discussed in turn.

Before fully discussing the results of Study 1, there are some limitations that should be mentioned. First, the study relied on cross-sectional, self-report survey data that has some drawbacks. For one, cross-sectional data does not allow for causal statements so it is unknown whether engagement leads to flow or flow leads to engagement. However, the goal of Study 1 was to determine first if flow and engagement are statistically unique so future research should investigate the causal direction now that data supports their independence. Additionally, self-report data should not drastically impact the results of Study 1 primarily because both flow and engagement are intensely personal experiences. No research to date has used other-report data to assess employee's engagement or flow experiences nor would it make theoretical sense to do so. Using cross-sectional self-report data does have the issue of mono-method bias, however, there are currently no known measures of engagement or flow that use methods other than self-report, such as behavioral or biological assessments. As such, although limitations are present in Study 1, they should not severely detract from interpretation of the results.

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Overall, the results have several implications. First, these results provide empirical evidence in support of the notion that flow and engagement are not suffering from the "Jangle Fallacy". In other words, flow and engagement are related constructs, but in the experience of working adults, they are unique. More specifically, the results of Study 1 complement the underlying theory behind both flow and engagement. First, flow is thought to be a uni-dimensional (Nakamura & Csikszentmihalyi, 2002), situationally focused experience (Csikszentmihalyi, 1990) and this was again supported by the results of Study 1.

The results of Study 1 also significantly contribute to engagement scholarship. Research has shown that engagement data has indicated both single-factor (Bakker & Demerouti, 2008; Macey & Schneider, 2008) and three-factor (Mills, Culbertson, & Fullagar, 2011; Schaufeli, Bakker, & Salanova, 2006; Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002) structures so Study 1 adds to the evidence for a uni-dimensional structure to engagement. There was still some evidence that engagement was comprised of three factors, however, those three factors were highly correlated and therefore the data seemed to fit the one factor solution better.

Lastly, the cross-loading of the flow enjoyment item ("The experience is extremely rewarding") further demonstrates that engagement is a positive, enjoyable experience as well. Currently, even the full 17-item UWES only briefly touches on the enjoyable or rewarding aspects of engagement with one item "I feel happy when I am working intensely". However, this again fits with most research on engagement that conceptualizes it as a dispositional variable determined by the sum of ones experiences at work, unlike flow which is dependent on the specific tasks the employee is engaging in. Future research should examine the ways in which flow activities and/or generally enjoyable work activities may influence an employee's overall

feelings of engagement with their job. Results of Study 1 would suggest that engaging in rewarding job tasks (i.e.: tasks where one might experience flow) also contributes to overall feelings of engagement. However, this cannot be fully determined without a longitudinal study that would allow for stronger causal inferences.

By demonstrating the relative independence of flow and engagement, researchers and practitioners should include both constructs in studies examining either task or work engagement in organizational settings. Additional research is still needed to more fully understand the differential validity of engagement and flow, however, Study 2 will begin to address those issues.

Chapter 3 - Study 2

In order to build off the results of the first study and more fully understand the differential validity of flow and engagement, a second study was conducted. The goal of the study was to understand the differential prediction of flow and engagement by linking them both to relevant and important outcomes, namely job satisfaction, organizational commitment, burnout, and organizational citizenship behaviors (OCB's). This is important for one primary reason; the practical distinction between flow and engagement is more valuable to organizations than their statistical distinction. Even though flow and engagement demonstrated discriminant validity in a strictly statistical sense in Study 1, data regarding their differential relationships with relevant outcomes will provide more information to organizational stakeholders regarding the use of flow and/or engagement in the workplace. Specifically, the goal of Study 2 is to determine whether flow or engagement is more predictive of the various outcomes that will be assessed.

First, both flow and engagement have been linked to job satisfaction. Overall, flow has repeatedly been shown to predict positive affect in a variety of settings (E.g.: Csikszentmihalyi & LeFevre, 1989; Fullagar & Kelloway, 2009; Mundell, 2000; Rogatko, 2009; van Ittersum, 2013). On the other hand, the relationship between engagement and positive affect or job satisfaction is more complicated. As Macey & Schneider (2008) note, there have been a number of studies that simply conceptualize engagement as job satisfaction. Harter et. al. (2002), the creators of the Gallup Work Place Audit, define engagement as an individual's involvement, satisfaction, and enthusiasm for work. Others (E.g.: Buckingham & Coffman, 1999; Burke, 2005; Towers-Perrin, 2003) simply assess engagement as the satisfaction with ones work and work environment. In those instances, engagement is indistinguishable from job satisfaction so the relationship

between the two is unable to be examined. However, there are a small number of studies that have shown a positive relationship between engagement, as measured by the UWES, and job satisfaction (Mills, Culbertson, & Fullagar, 2012; Wefald, Mills, Smith, & Downey, 2012). Additionally, Wefald and others (2012) demonstrated that the Schaufeli conceptualization of engagement (UWES) was distinct from job satisfaction and was the most predictive of job satisfaction when compared with Shirom's (2005) and Britt et. al.'s (2006) conceptualizations and measures.

As with job satisfaction, engagement has also been defined using aspects of organizational commitment. Wellins and Concelman (2005b) mention that in order to be engaged an individual must be fully committed to the organization. In the most common measures of commitment (Meyer & Allen, 1997; Mowday, Porter, & Steers, 1982), organizational commitment is measured as a psychological state in the same vein as the measures of engagement. In other words, measurement of engagement and organizational commitment involve assessing the extent to which an individual is experiencing a psychological state and not the conditions under which that state exists. Additionally, organizational commitment is linked to work engagement in that one facet of engagement is dedication which encompasses the idea that an individual feels a connection with and commitment to their job and the organization (Macey & Schneider, 2008). Although engagement and commitment are closely related, Halberg and Schaufeli (2006) examined job involvement, organizational commitment, and work engagement and found that all three constructs were related, but unique. Lastly, further research (e.g.: Poon, 2013; Scrima, Lorito, Parry & Falgares, 2014) has shown that engagement and commitment are positively related. Unlike engagement, the relationship between flow and commitment has not been extensively explored. The only study to date linking flow and commitment demonstrated

that flow moderated the effect of authentic leadership on job satisfaction and organizational commitment but bivariate correlations provided showed a significant positive relationship between flow and commitment (Smith, Bryan & Vodanovich, 2012).

Among the literature on burnout, there has been a consistent and clear negative relationship between engagement and burnout. As detailed previously, early conceptualizations of engagement asserted that engagement was simply the opposite of burnout (Maslach & Jackson, 1981). However, further work has shown that engagement and burnout are independent, but still negatively related constructs (Maslach, Schaufeli & Leiter, 2001; Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002). However, as with commitment, there is little to no work directly examining the relationship between flow and burnout. Lavigne, Forest, Crevier-Braud (2012) demonstrated that a "harmonious passion for work" facilitated low levels of burnout by facilitating more frequent flow experiences. To date, no other studies could be found which directly assessed flow and burnout, however, given the nature of flow and it's positive impact on satisfaction and performance (Fullagar & Kelloway, 2009; Nakamura & Csikszentmihalyi, 2002) it is presumed that flow and burnout would be incompatible. According to Maslach, Schaufeli, and Leiter (2001) burnout is associated with strong feelings of anxiety. However, Fullagar, Knight and Sovern (2013) found that flow was negatively related to task specific performance anxiety. More specifically, their findings demonstrated that when flow was highest, anxiety was lowest and vice versa. This would indicate that flow and burnout are opposite and incompatible processes. As such, flow and burnout should have a negative relationship similar to the relationship between engagement and burnout.

Lastly, work engagement and Organizational Citizenship Behaviors (OCB) have been shown to be positively related. Choi (2013) demonstrated that job resources lead to engagement

that led to increased OCB's. Sulea, Virga, Maricutoiu, Schaufeli, Dumitru, and Sava (2012) similarly demonstrated that engagement mediated the relationship between job characteristics and extra role behaviors or OCB's. Babcock-Roberson and Strickland (2010) were able to show that engagement mediated the relationship between leadership and OCB's. Finally, others (Christian, Garza & Slaughter, 2011; Dalal, Baysinger, Brummel & LeBreton, 2012) have concluded that employee engagement is the most important affective, attitudinal predictor of OCB's. Specifically, meta-analytic data indicated that engagement predicted task performance and OCB's after controlling for job satisfaction, organizational commitment, and job involvement (Christian, Garza & Slaughter, 2011). Although there are numerous studies showing the importance of engagement in predicting OCB's, there are no studies to date that directly assess both flow and OCB's.

To further elaborate on the evidence gathered in Study 1, Study 2 examined the incremental validity of flow on important outcomes while controlling for engagement. Considering engagement has been more widely studied in applied settings and therefore has a larger research base linking it to organizational outcomes Study 2 sought to ascertain if flow adds to that prediction in any way. In other words, if flow is distinct from engagement then what does flow incrementally add to the variance explained in organizational outcomes, over and above engagement?

Hypothesis 1a: Flow will positively predict job satisfaction after controlling for engagement.

Hypothesis 1b: Flow will positively predict organizational commitment after controlling for engagement.

Hypothesis 1c: Flow will negatively predict burnout after controlling for engagement.

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Hypothesis 1d: Flow will positively predict OCB's after controlling for engagement.

Method

Once the distinctiveness of flow and engagement had been investigated, a second study was conducted which examined the incremental validity of the two constructs by examining their relationships with other relevant concepts. Study 2 again used a cross-sectional survey methodology as most research involving engagement has been cross-sectional and previous cross-sectional flow research has shown positive results as well. Participants were again gathered through the mTurk service and surveys were completed online using Qualtrics. As with Study 1, informed consent was first presented to participants and the surveys were only presented if the participant granted consent to participate. Following informed consent, the demographic questions were presented followed by all the relevant surveys that were presented in a random order. Following the completion of all surveys, participants were given debriefing information and a random code to enter in mTurk granting them credit.

Participants

Participants for the second study were again a convenience sample recruited through mTurk. Participants were instructed not to participate in Study 2 if they had participated in Study 1. The worker requirements were also different from those in Study 1 to help ensure that participants from Study 1 were not present in Study 2.

Measures

Demographics

The same demographic variables (age, gender, race, job title, job tenure, and average hours worked) from the first study were collected in the second study (See Appendix A). The

sample for Study 2 had an average age of 33 with participants ranging in age from 18 to 74. Similar to Study 1, the sample was 61% male, 73.6% white or Caucasian, 13% Asian, and nearly 6% Black or African American. Additionally, a wide range of jobs were represented, with the most common being IT work, sales, or manager. 35.7% of participants had been in there job 2-5 years, 25.7% had been in their job 6 months to 2 years and only 5% had been in there job less than 6 months. Last, nearly half (42.9%) of participants stated they worked an average of 40 hours a week.

Flow

Flow was again assessed using the short-form FSS (Martin & Jackson, 2008). This scale has shown evidence of its validity and reliability in both prior research (Martin & Jackson, 2008) and functioned as expected in Study 1. The reliability of the whole scale in Study 2 was found to be .75 which is generally considered acceptable (Tabachnick & Fidell, 2007). The full scale is presented in Appendix B.

Engagement

Engagement was again assessed using the UWES-9 (Schaufeli & Bakker, 2004; Schaufeli, Bakker & Salanova, 2006). This scale is a shortened version of the original UWES-17 and is comprised of three items per factor. In the current study, correlations between engagement and the other variables were all in the directions anticipated and reliability for the whole scale was found to be .95, whereas the factors of vigor, dedication, and absorption were found to be .88, .91, and .87 respectively. The full scale is presented in Appendix C.

Job Satisfaction

Job satisfaction was measured using the Brief Index of Affective Job Satisfaction (BIAJS: Thompson & Phua, 2012). The scale consists of four items that measure job satisfaction,

such as "I find real enjoyment in my job" and "I like my job better than the average person".

Additionally, the scale has three distractor items (e.g. "My job is time consuming") inserted

between the satisfaction items. In the validation study for this scale, alpha was found to be

between .81 and .83 across several samples and has shown strong positive correlations with other

known measures of job satisfaction. In the current study, alpha was found to be higher at .93.

This is slightly high, but not overly concerning considering the strong, uni-dimensional nature of

job satisfaction (Cortina, 1993; Nunnally & Bernstein, 1994; Schmitt, 1996). For all items, see

Appendix D.

Organizational Commitment

Commitment was measured using Allen & Meyer's (1990) 3-factor measure of

commitment. This scale breaks commitment into three factors (affective, normative, and

continuance) with each factor being assessed by four items. Alpha values for the three sub-

factors were found to be .91, .81, and .86 respectively. Overall, the entire measure had an alpha

value of .77 so all are within the acceptable range (Nunnally & Bernstein, 1994). Sample items

include "Right now, staying with the organization is a matter of necessity as much as desire" and

"I feel a strong sense of belonging to the organization". All items were rated on a 7-point Likert

ranging from "Strongly Disagree" to "Strongly Agree". The full scale is presented in Appendix

E.

OCB's

Organizational Citizenship Behaviors were assessed using a measure from Lee and Allen

(2002). This measure had participants rate the frequency with which the engage in OCB's and is

broken into two factors; individual directed behaviors and organizationally directed behaviors

with eight items assessing each factor. Alpha values for the whole scale, the individual factor,

and the organizational factor were .93, .93, and .88 respectively. These values also fit into the moderate to high range for acceptable reliability values (Nunnally & Bernstein, 1994). For all items, see Appendix F.

Burnout

Burnout in the second study was assessed using the short-form of the Burnout Measure Short (BMS: Malach-Pines, 2005). This is a ten-item measure which asks participants to rate the frequency they experience the negative feelings or effects of burnout at work from 1=Never to 7=Always. Example feelings include "Tired", "Trapped", and "Difficulties Sleeping". Preliminary validation of the scale demonstrated lower alpha internal consistency coefficients all exceeding .85. The scale had the anticipated relationships with other variables, such as a negative correlation with job satisfaction and positive correlation with work stress. In the current study, burnout had an alpha value of .93 and was negatively correlated with all other variables except continuance commitment. Given that continuance commitment is commitment to an organization due to feelings of being trapped and/or unable to secure another job, it would fit that burnt out employees may feel committed to the organization only through these feelings. All items are presented in Appendix G.

Results

As with Study 1, prior to analyzing the data, it was screened for any measurement issues and adherence to assumptions, such as normality. A total of 417 subjects completed the entire survey protocol, however, 16 were immediately removed due to their failure on a manipulation check. Within the organizational commitment measure, a dummy item was added which read "For this item, please mark Strongly Disagree". Once the data had been collected, any participant who did not mark "Strongly Disagree" on that item was removed resulting in a sample size of

401. This was done to ensure participants were reading the survey items, understanding them, and not simply using a patterned response set. Oppenheimer, Meyvis, and Davidenko (2009) demonstrated that using a manipulation check, such as this, is an effective technique for screening out unreliable data from online sources.

Next, all scale and sub-scale scores were analyzed for outliers, again using the Z-score above 3.29 criterion (Tabachnick & Fidell, 2007) that resulted in one outlier in the Flow sub-scale of pre-conditions. Given that the pre-conditions of flow were not the most critical factor in the subsequent analyses and the fact that with larger samples, some outliers are expected (Tabachnick & Fidell, 2007), that case was left in the data set. As with Study 1, skewness and kurtosis statistics were also examined with all scales generating skewness and kurtosis values within an acceptable range (i.e., between -1 and +1, Tabachnick & Fidell, 2007).

Following a basic examination of the general assumptions of normality, bivariate correlations were generated for all scales and sub-scales. Results are provided in Table 3.1. It is of note that nearly all of the correlations are significant indicating possible multi-collinearity. This would prove problematic for traditional, linear regression approaches, however, the current study utilizes a multivariate, relative weights approach (RWA) which is not influenced by multicollinearity among variables (LeBreton & Tonidandel, 2008). As a whole, relative weights procedures function by transforming the existing predictors into new, orthogonal variables that are maximally related to the original predictors (Tonidandel, LeBreton, & Johnson, 2009). From there, the procedure allows one to predict a single or even multiple correlated criteria while getting results which show the relative importance of each predictor in terms or relative effect sizes (LeBreton & Tonidandel, 2008). Given that the approach is based in regression methods, and will generate nearly identical results in cases where multicollinearity

Table 3.1 - Overall Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.Flow	(.75)															
2.Flow PC	.77**	(.80)														
3.Flow EX	.96**	.55**	(.63)													
4.Eng.	.54**	.34**	.56**	(.95)												
5.Vigor	.51**	.30**	.53**	.94**	(.88)											
6.Ded	.51**	.34**	.51**	.95**	.86**	(.91)										
7.Abs	.51**	.32**	.53**	.93**	.80**	.83**	(.87)									
8.Job Sat.	.50**	.31**	.52*	.86**	.79**	.88**	.75**	(.93)								
9.AC	.47**	.31**	.48**	.71**	.66**	.75**	.59**	.73**	(.91)							
10.NC	.25**	.05	.30**	.45**	.46**	.46**	.35**	.44**	.53**	(.81)						
11.CC	-.07	-.02	-.08	-.24**	-.23**	-.25**	-.19**	-.22**	-.26**	.01	(.86)					
12.Comm.	.36**	.20**	.38**	.51**	.49**	.53**	.42**	.53**	.71**	.80**	.37**	(.77)				
13.OCBI	.40**	.31**	.39**	.45**	.43**	.45**	.40**	.38**	.40**	.33**	-.09	.35**	(.88)			
14.OCBO	.47**	.34**	.46**	.69**	.64**	.70**	.61**	.65**	.69**	.53**	-.14**	.59**	.65**	(.93)		
15.OCB	.49**	.36**	.47**	.64**	.60**	.65**	.57**	.58**	.62**	.48**	-.13*	.53**	.89**	.93**	(.93)	
16.Burnout	-.44**	-.32**	-.43**	-.64**	-.59**	-.64**	-.56**	-.67**	-.59**	-.17**	.35**	-.24**	-.28**	-.46**	-.42**	(.94)

Note: Flow=Overall Flow, Flow PC=Flow Pre-Conditions, Flow EX=Flow Experience, Eng=Overall Engagement, Ded=Dedication, Abs=Absorption, AC=Affective Commitment, NC=Normative Commitment, CC=Continuance Commitment, Comm=Overall Commitment, OCBI=OCB Individual, OCBO=OCB Organizational, OCB=Overall OCB's; **=$p<.01$, *=$p<.05$. Alpha reliability values are given in parentheses on the diagonal.

exists, one must only address the general assumptions of normality, such as outliers, skewness, and kurtosis.

Following an examination of the descriptive statistics, correlations, and adherence to assumptions, the data was subjected to the relative weights analysis. The data were input into the RWA web based tool (Tonidandel & LeBreton, 2014) that allows one to conduct Relative Weights Analyses without knowledge of R syntax. The tool allows users to upload a data set in either raw or correlation matrix form and then specify their predictor and criterion variables as well as listwise or pairwise deletion. The current study utilized pairwise deletion to allow for maximum data points for each variable. Results of the analysis are present in Table 3.2.

Table 3.2 – Multivariate RWA Results

Criterion: Job Satisfaction, Organizational Commitment, OCB's, and Burnout				
Predictor	RW	CI-L	CI-U	RS-RW
Flow	.0470*	.0333	.0582	22.98%
Engagement	.1578*	.1444	.1707	77.02%
Vigor	.0536*	.0432	.0590	23.96%
Dedication	.0815*	.0710	.0897	36.43%
Absorption	.0471*	.0359	.0540	21.05%
Flow Pre-Cond.	.0157*	.0034	.0245	7.00%
Flow Exp.	.0259*	.0147	.0338	11.57%

Note: RW=raw relative weight (summing raw weights, within rounding error, will equal multivariate R^2); CI-L=lower bound of confidence interval used to test the statistical significance of raw weights; CI-U=upper bound of confidence interval used to test the statistical significance of raw weights; RS-RW=relative weight rescaled as a percentage of predicted variance in the multivariate criterion space (within rounding error it will sum to 100%); *=$p<.05$

In interpreting the results of the RWA, there are several things to note. First, the raw relative weight is a measure of the importance of the variable using relative effect size as the metric (LeBreton et al., 2007). In other words, Flow predicts around 5% of the variance in the multivariate combination of criterion variables, whereas Engagement predicts close to 16%. Together, almost 20% of the variance in the combination of criterion can be explained by variations in flow and engagement. On the other hand, the rescaled relative weights are found by

dividing the raw weights by the multivariate R^2 to provide a percentage of the total variance

explained which can be attributed to each predictor. In other words, of all the variance explained

by both predictors, engagement accounts for a little over three quarters of that variance. The

confidence intervals provide a test of significance for each predictor and are determined by

comparing the weight of each predictor to that of a completely random variable. The 95% (for an

alpha level of .05) confidence intervals use a bootstrapping approach with 10,000 permutations,

as recommended by Tonidandel et al., (2009). If these confidence intervals contain 0, then one

would conclude that the predictor is not functioning better than a random variable, however,

neither significance confidence interval contained 0 in the current study so both predictors are

believed to significantly predict variance in the multivariate criterion (Tonidandel & LeBreton,

2014).

Table 3.2 also displays results using the sub-factors from both the flow and engagement

scales to predict the same criterion variables; job satisfaction, organizational commitment,

OCB's, and burnout. Results of this analysis indicated that dedication was the strongest predictor

of the multivariate criterion, with vigor and absorption being a close second. Of the sub-facets of

flow, the experience of flow was more predictive of the outcomes measured than the pre-

conditions.

Table 3.3 displays the results of 4 separate multiple regression relative weights analyses,

each one using a single criterion. This was done to further explore the data and see the relative

importance of each predictor in predicting each individual outcome considering the previous

analyses only provide results for the prediction of a single, multivariate criterion. Results of the

univariate RWA's mirror the results of the multivariate, in that engagement was always the

strongest predictor of the outcome variable. Additionally, as in the multivariate analysis, flow

was always a significant predictor, generally around 20%, however, engagement was always stronger.

Discussion

Before fully discussing the results of Study 2, a brief discussion of the limitations of the current study is in order. As with Study 1, Study 2 utilized a cross-sectional survey methodology so true causal statements cannot be made. Future research should further examine the temporal progression of the variables present in the current study. For instance, job satisfaction could contribute to feelings of engagement, however, engaged employees may become satisfied with their job through their engagement in it.

Second, this study relied on self-report data and as such may suffer from self-enhancement or mono-method bias. Considering the data was collected online, through an anonymous survey system, and was distributed through a third party that was not the participant's employer, there should be little concern that participants lied. Additionally, the surveys did not ask about deviant behaviors for which individual's would be more motivated to conceal. As for the concern with self-report data, Spector (1994) provides a reasonable account of why individuals are the most knowledgeable about their thoughts and feelings at work. Additionally, he argues that as long as cross-sectional, self-report data is used properly (i.e. not making causal inferences), then it provides as robust results as other methodologies.

Results of Study 2 fully support all four parts of Hypothesis 2, namely that flow still predicts variance in the outcomes of interest even after accounting for the variance attributed to engagement. As is shown in Table 3.2 and 3.3, of all the variance explained by flow and engagement, flow generally account for around 25% of that variance. In terms of all the variance present in the outcomes, flow and engagement together can account for close to 20% of the total

Table 3.3 - Individual Multiple Regression RWA

	Job Satisfaction				Organizational Commitment				Overall OCB's				Burnout			
												Criterion				
Predictor	RW	CI-L	CI-U	RS-RW	RW	CI-L	CI-U	RS-RW	RW	CI-L	CI-U	RS-RW	RW	CI-L	CI-U	RS-RW
Flow	.1261*	.0890	.1648	17.12%	.0684*	.0277	.1123	25.36%	.1316*	.0828	.1870	29.79%	.1035*	.06513	.1476	24.86%
Engagement	.6105*	.5575	.6636	82.88%	.2012*	.1277	.2709	74.64%	.3103*	.2383	.3786	70.21%	.3129*	.2389	.3860	75.14%

Note: RW=raw relative weight (summing raw weights, within rounding error, will equal R^2); CI-L=lower bound of confidence interval used to test the statistical significance of raw weights; CI-U=upper bound of confidence interval used to test the statistical significance of raw weights; RS-RW=relative weight rescaled as a percentage of predicted variance in the criterion (within rounding error it will sum to 100%); *=p<.05

variance. Although flow did not account for more variance in any of the outcomes, this still fits with the theory guiding Study 2. Research on engagement (Kahn & Fellows, 2013; Macey & Schnieder, 2008) argues that engagement is a holistic, dispositional reaction to the overall activities an individual engages in at work. On the other hand, flow is thought, and conceptualized as, an intense, task-specific feeling comprised of intrinsic motivation (Nakamura & Csikszentmihalyi, 2002). Therefore, it would fit that engagement is more predictive of general work outcomes, such as satisfaction and commitment. On the other hand, as has been shown previously, flow is related to momentary task performance and affect (Fullagar & Kelloway, 2009; van Ittersum, 2013). Although the current study was unable to assess momentary performance or affect, future research could further elaborate on these results. Therefore, Study 2 further strengthens the literature on both constructs by demonstrating that engagement is most strongly tied to overall work outcomes.

Furthermore, results of Study 2 should prove useful to practitioners given the strength of the relationships between both predictors and the criterion variables. As Macey & Schneider (2008) note, organizations are becoming more concerned with engagement and related constructs due to their relationship with other positive outcomes, such as satisfaction and commitment. Results of Study 2, for instance, showed that nearly 75% of the variance in job satisfaction could be explained by individual's flow and engagement experiences. Kahn and Fellows (2013) note that there are several successful training programs or interventions which have been shown to increase engagement in employees while research on flow has shown that through restructuring tasks or redesigning job characteristics, flow experiences can be increased or enhanced (Debus, Sonnentag, Deutsch, Nussbeck, 2014; Demerouti, 2006; Nielson & Cleal, 2010). Therefore,

results of Study 2 would suggest that these programs would also serve to enhance job

satisfaction, commitment, OCB's, and reduce burnout.

Chapter 4 - General Discussion

To summarize, the overall goal of both studies was to better understand the discriminant validity of two engagement constructs, work engagement and flow. In Study 1, the goal was to determine the statistical uniqueness of flow and engagement. Specifically, the data was fit to several competing models to see if that data supported a one or multi-factor solutions. In Study 2, this examination was expanded by looking at discriminant validity through the lens of differential prediction. In this case, data were collected regarding flow and engagement, as well as job satisfaction, commitment, citizenship behaviors, and burnout. Specifically, it was hypothesized that engagement would predict these outcomes, but that flow would add to the prediction by explaining variance not attributed to engagement. Overall, the goal of these studies was to clear the confusion in the field regarding the relationship between engagement and flow. As some have noted (Kahn & Fellows, 2013; Macey & Schneider, 2008), flow has been posited mostly as a component of engagement, and sometimes as the same construct as engagement. Therefore, the two studies discussed aimed to clear that confusion and empirically examine the relationships between the two.

Before fully discussing the results of both studies, there are some overall limitations inherent in both studies which should be addressed. First and foremost, within the field there have been claims that the use of convenience samples are inappropriate, especially ones pulled from online sources such as mTurk. However, research has shown that these types of convenience samples are not drastically different from samples collected through more traditional means. For instance, Casler, Bickel, and Hackett (2013) compared traditionally collected sampled with mTurk samples and found no significant differences except in the case of sample diversity with the mTurk sample being much more diverse than traditional samples.

Some argue that mTurk samples are less accurate or representative. For instance, Kraut, Patterson, Lundmark, Kiesler, Mukphadhyay, & Scherlis (1998) argued that internet participants were more depressed and maladjusted than traditional samples, however, this was thoroughly refuted by Gosling, Vazire, Srivastava, and John (2004). Gosling et al. (2004) also found that internet convenience samples were no less motivated to complete the measures than traditionally collect samples. Study 2 also utilized a simple manipulation check which has been shown to be an effective technique for enhancing data integrity. In the case of the current studies, participants ranged from 18 to over 70 years old and worked in over 100 different jobs from a variety of organizations and locations. This type of diversity is unlikely to be seen in a traditional undergraduate or workplace convenience sample.

Another potential limitation present in both studies is the use of self-report, cross-sectional data. However, this limitation is found in numerous applied psychology studies. Additionally, to date there are no behavioral or biological measures of flow and engagement. Also, although the characteristics of the experiences are robust and function similarly across individuals, the experiences themselves are intensely personal and therefore the individual should have the most knowledge regarding their engagement or flow experiences. Therefore, although there are some potential limitations to both studies, they should not significantly detract from the interpretation of the results.

Taken in sum, the data and analyses for Study 1 and Study 2 supported the hypotheses of those studies. For instance, in Study 1 the multi-factor models fit the data best, with the modified two-factor model providing the best fit. Also of importance was the fact that the hypothesized one-factor model had the poorest fit to the data. In the case of Study 2, it was found that both flow and engagement were significant predictors of job satisfaction, organizational commitment,

OCB's, and burnout. Engagement was always able to explain more variance in those outcomes, however, flow was still a significant predictor in all cases. These results, as well as their implications and limitations, will now be discussed in full.

First and foremost, results of both studies indicate that flow and engagement are distinct constructs. Study 1 showed that a one-factor model of flow and engagement fit the data worst. Study 2 then showed that both flow and engagement are able to significantly predict organizationally relevant outcomes. Specifically, flow is still able to predict unique variance in those outcomes even after controlling for engagement. As such, both studies provide strong evidence for the independence of flow and engagement. This finding significantly adds to the literature on both flow and engagement. As Macey and Schneider (2008) among others note, flow has been discussed as either an aspect of overall work engagement or the same construct as engagement. The studies detailed above provide the first evidence to date that flow and engagement are unique constructs that, although related, operate in such a way as to predict unique variance in outcomes. As stated previously, future research should further examine the relationship between flow and engagement, specifically their causal directions.

The results of both studies, but more specifically Study 2, have other important contributions and implications. Prediction of organizationally relevant outcomes is one of the prime concerns for both I/O researchers and practitioners with the goal being the best prediction possible. For instance, one of the most discussed relationship is that between job satisfaction and job performance, however, a meta-analysis (Judge, Thoresen, Bono, & Patton, 2001) found the population correlation between the two to be .30, meaning that less than 10% of the variance in one variable can be explained by the other. A more significant and stronger relationship frequently discussed is that of the role General Mental Ability (GMA) has in prediction of job

performance. Schmidt and Hunter (2004) detail the research on this relationship and note that

GMA relates to job performance around a .50 level, with one of the next most significant

predictors being the Big 5 variable conscientiousness, which relates between .30-.40. GMA is

generally considered the best overall predictor of job performance, regardless of occupation type

or setting, and it is able to predict around 25% of the variance in performance. In Study 2, flow

and engagement were able to predict around 20% of the variance in job satisfaction, OCB's,

commitment, and burnout. Although performance was not able to be measured, given the

structure of Study 2, this relationship is quite strong. Cohen and Cohen (1983) even note that

correlations above .50 are considered large in the social sciences so the relationships found in

Study 2 are significant both practically and statistically.

Along these lines, the results of both studies have numerous practical, applied

implications as well. First, by showing the independence between flow and engagement,

organizations and managers should focus independently on flow and engagement. Since the

causal relationship between flow and engagement has not been empirically determined, it cannot

be said which experience leads to the other. As such, organizations must focus on the

interventions which have been tied to each construct. For instance, Macey and Schneider (2008)

note several interventions that have been developed which can function to increase engagement,

such as creating context and ennobling workers. On the other hand, research on flow has also

shown ways in which organizations may encourage or facilitate their employee's flow

experiences. For instance, both Demerouti (2006) and Fullagar and Kelloway (2009) have linked

job and task characteristics to flow experiences. Specifically, both showed that autonomy is one

of the greatest predictors of flow, which fits with Csikszentmihalyi's (1975) original writings on

flow. Namely, that flow is a personal experience and that it is ones perceived skill that interacts

with the perceived challenge of a task to facilitate an autotelic experience. Given the types of interventions which lead to flow and engagement, organizations would be best suited to structure tasks in such a way that employees feel autonomous and empowered to do meaningful work. Additionally, if an organization were only able to focus on one intervention, results of Study 2 would suggest that focusing on employee engagement would better predict the outcomes and should therefore provide a better return on investment.

Another, more broad, practical implication is showing the general usefulness of positive constructs in the workplace. As mentioned above, the relationship between the predictors and the outcomes of satisfaction, commitment, burnout, and citizenship is quite strong. As such, the results of these studies should be taken as further evidence for the importance of positive psychology and positive constructs in the workplace. Although organizational researchers have long recognized the importance of positive, strength-based, constructs in the workplace, some modern organizations still refuse to acknowledge their importance. As such, researchers must continue linking these constructs to relevant outcomes, especially those that impact the bottom line.

The overall results of both studies will also help guide future research. For one, future research would benefit from a longitudinal examination of flow and engagement. Given the cross-sectional nature of the previous studies, causal relationships are unable to be examined. Kahn and Fellows (2013) posit that flow is an aspect of engagement, however, it could reasonably be theorized that engaged employees are better able to experience flow in the workplace. Another avenue for future investigation is to determine the influence of both flow and engagement on performance. Both engagement and flow have been linked to performance (Macey & Schneider, 2008; Nakamura & Csikszentmihalyi, 2002), however, relative weights

analyses could further demonstrate which form of engagement is most critical to various measures of job performance. Last, the field would still benefit from further examinations of the predictors and/or pre-conditions to both flow and work engagement. Considering the positive influence of both constructs, research should investigate ways in which organizations may enhance or increase those experiences.

In conclusion, the studies presented above found that flow and engagement are unique constructs. First, data from Study 1 indicated that there was discriminant validity between flow and engagement. Using several hundred participants, a single-factor model of flow and engagement fit the data worst. Second, Study 2 showed that both flow and engagement predicted unique variance in job satisfaction, citizenship behaviors, commitment, and burnout. Taken together, this is strong indication that flow and engagement are unique and should be treated as such. These results have numerous implications, the most important of which is showing that organizations could clearly benefit from focusing on both the work engagement and task engagement of their members.

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Appendix A - Demographics

Age:

Gender: Male or Female

Race: White

      Black or African American

      Hispanic or Latino

      Asian

      Pacific Islander or Native Hawaiian

      American Indian or Alaskan Native

      Mixed Race

      Other

Job Title:

Job Tenure: 0-6 Months

           6 months – 2 years

           2-5 years

           5-10 years

           10+ years

Average Hours worked per week:

Appendix B - Short Flow Measure

Please think of an activity or task that you engage in frequently at work. If possible, this should be one of your primary job responsibilities in that it takes your concentration and a moderate amount of your time. Please complete the following scale with that task in mind. (All answers utilize a 7-point Likert scale ranging from 1=Strongly Disagree to 7=Strongly Agree)

FSS 1.   I feel I am competent enough to meet the high demands of the situation.

FSS 2.   I do things spontaneously and automatically without having to think.

FSS 3.   I have a strong sense of what I want to do.

FSS 4.   I have a good idea while I am performing about how well I am doing.

FSS 5.   I am completely focused on the task at hand.

FSS 6.   I have a feeling of total control.

FSS 7.   I am not worried about what others may be thinking of me.

FSS 8.   The way time passes seems to be different from normal.

FSS 9.   The experience is extremely rewarding.

(Martin & Jackson, 2008)

Appendix C - UWES-9

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the "0" (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way. (All answers utilize a 7-point Likert ranging from 0=never, 3=sometimes, 6=always)

UWES 1. At my work, I feel bursting with energy. (VI 1)

UWES 2. At my job, I feel strong and vigorous. (VI 2)

UWES 3. I am enthusiastic about my job. (DE 1)

UWES 4. My job inspires me. (DE 2)

UWES 5. When I get up in the morning, I feel like going to work. (VI 3)

UWES 6. I feel happy when I am working intensely. (AB 1)

UWES 7. I am proud of the work that I do. (DE 3)

UWES 8. I am immersed in my work. (AB 2)

UWES 9. I get carried away when I am working. (AB 3)

VI=Vigor, DE=Dedication, AB=Absorption

(Schaufeli & Bakker, 2003)

Appendix D - Job Satisfaction

The Brief Index of Affective Job Satisfaction

"Thinking specifically about your current job, do you agree with the following?"

1. I find real enjoyment in my job.
2. My job is unusual*
3. I like my job better than the average person.
4. My job needs me to be fit*
5. Most days I am enthusiastic about my job.
6. My job is time consuming*
7. I feel fairly well satisfied with my job.

All responses use a 5-point Likert scale ranging from 1=strongly disagree to 5=strongly agree.

*These items are used as distractors and are not included in analyses

(Thompson & Phua, 2012)

Appendix E - Organizational Commitment

"Please think about the organization you work for and rate your agreement with the following statements. "

All responses utilize a 7-point Likert Scale ranging from Strongly Disagree to Strongly Agree

ACS1. I do <u>not</u> feel like 'part of the family' at the organization.*

ACS2. The organization has a great deal of Personal meaning for me.

ACS3. I do <u>not</u> feel 'emotionally attached' to the organization.*

ACS4. I feel a strong sense of belonging to the organization.

NCS1. I think that people these days move from organization to organization too much.

NCS2. Jumping from organization to organization does <u>not</u> seem at all unethical to me.*

NCS3. One of the major reasons I continue to work for the organization is that I believe that loyalty is important and therefore I feel a sense of moral obligation to remain.

NCS4. Things were better in the days when people stayed with one organization for most of their careers.

CCS1. Right now, staying with the organization is a matter of necessity as much as desire.

CCS2. I feel that I have too few options to consider leaving the organization.

CCS3. One of the few serious consequences of leaving the organization would be the scarcity of available alternatives.

CCS4. It would be very hard for me to leave the organization right now, even if I wanted to.

*Reverse coded items

AC = Affective Commitment

NC = Normative Commitment

CC = Continuance Commitment

(Allen & Meyer, 1990)

Appendix F - Organizational Citizenship Behavior

Please rate how often you engage in the following behaviors (Ratings use a 7-point Likert ranging from 1=never to 7=always)

OCB-Individual

1. Help others who have been absent.
2. Willingly give your time to help others who have work-related problems.
3. Adjust your work schedule to accommodate other employees' requests for time off.
4. Go out of the way to make newer employees feel welcome in the work group.
5. Show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.
6. Give up time to help others who have work or nonwork problems.
7. Assist others with their duties.
8. Share personal property with other to help their work.

OCB-Organizational

1. Attend functions that are not required but that help the organizational image.
2. Keep up with developments in the organization.
3. Defend the organization when other employees criticize it.
4. Show pride when representing the organization in public.
5. Offer ideas to improve the functioning of the organization.
6. Express loyalty toward the organization.
7. Take action to protect the organization from potential problems.
8. Demonstrate concern about the image of the organization.

(Lee & Allen, 2002)

Appendix G - Burnout

Burnout Measure: Short Version

Please use the following scale to answer the question: When you think about your work overall, how often do you feel the following?

(Responses utilize a 7-point Likert ranging from 1=never to 7=always)

1. Tired
2. Disappointed with people
3. Hopeless
4. Trapped
5. Helpless
6. Depressed
7. Physically weak/Sickly
8. Worthless/Like a failure
9. Difficulties sleeping
10. "I've had it"

(Malach-Pines, 2005)