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**FUELING THE FIRE:
APPLYING SELF-EXPANSION THEORY TO WORK PASSION**

A Dissertation in
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by
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ABSTRACT

Work passion is a commonly discussed yet poorly understood construct among organizational researchers and practitioners. The present study sought to provide clarity to the construct and its significance to the workplace by providing the first theoretically derived definition and model of work passion. This was accomplished by applying the self-expansion model from the romantic relationships literature to the work domain. Then, using this model and conceptualizing work as the target of a relationship, a longitudinal model of work passion was proposed in which newcomer passion facilitates work engagement, and this engagement then fuels long-term passion when self-expansion opportunities are present. In addition, self-expansion opportunities were proposed to moderate the reciprocal relationship between long-term passion and long-term engagement. To test the paper's hypotheses, three studies were conducted. In Studies 1 and 2, the measurement of work passion as a higher-order construct and its relation with key engagement behaviors were examined using upper-level college students with work experience ($n = 306$) and faculty and staff from a small private liberal arts college ($n = 161$). In Study 3, the conditions under which work passion is sustained over time were examined using a two-wave cross-lagged design with job newcomers recruited through Mechanical Turk ($n = 165$). Results provided some support for the proposed work passion model, and self-expansion opportunities were identified as a crucial driver of both work passion as well as work engagement. The implications of the study and directions for future research are discussed.

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Chapter 1

INTRODUCTION

“I would rather die of passion than of boredom.” – Vincent van Gogh

“Find something you’re passionate about and keep tremendously interested in it” – Julia Child

“The only way to do great work is to love what you do.” – Steve Jobs

One of the most common pieces of career advice is to “follow your passion.” This passion mantra is based on the assumption that everyone has discovered the *one thing* they are truly passionate about, and therefore their best option is to turn that passion into a career path. In addition, not only do people yearn to find careers they can be passionate about, but organizations also assert passion as a guiding principle. For example, one of Zappos’ core values is “Be passionate and determined” and Microsoft’s logo is “Your potential. Our passion.” Blue Origin, a small aerospace company, requires that all applicants and current employees have a “genuine passion” for space; if they do not, they are encouraged to find easier work elsewhere. To help employees find and pursue their passion, a number of popular press books are available, including *Passion at Work: How to Find Work You Love and Live the Time of Your Life* (Kang & Albion, 2005) and *Work With Passion: How to Do What You Love for a Living* (Anderson, 2004). Undoubtedly, passion for work has taken root as a highly desirable and sought-after employee attribute.

Yet despite the widespread popularity of passion for work, we do not know much about the topic at all. Overall, the work passion construct remains in a “nascent stage of development”

and “we know virtually nothing about it” (Perrewé, Hochwarter, Ferris, McAllister, & Harris, 2014, p. 145). What does it mean to be passionate about work? How can one sustain passion over time? Initial research on work passion suggests that passion is related to but distinct from other motivation-based or work-related constructs, including intrinsic motivation (Perrewé et al., 2014), flow, job identification (Ho, Wong, & Lee, 2011), work satisfaction (Houlihan, Philippe, Vallerand, & Ménard, 2014), work engagement (Trépanier, Fernet, Austin, Forest, & Vallerand, 2014), and affective commitment (Forest, Mageau, Sarrazin, & Morin, 2011). However, there are a number of limitations to this research. First, research on work passion has been largely atheoretical to date. Specifically, definitions of work passion have been vague or contaminated with other constructs, and there are no theoretically driven models of work passion to guide this growing body of research.

Second, research on work passion tends to be cross-sectional in nature (with a few cross-lagged designs; e.g., Lavigne, Forest, & Crevier-Braud, 2012). Without longitudinal models to examine the development of passion over time, it is unclear whether there are long-term benefits – or costs – associated with sustaining work passion. Third and finally, the majority of work passion research has appeared in the study of entrepreneurs (e.g., Baum & Locke, 2004; Chen, Yao, & Kotha, 2009), thereby limiting the ability to generalize findings to other employees and occupations where workplace conditions and employee traits may differ. This body of research has also struggled to arrive at a precise definition of passion and has reported mixed findings regarding the benefits of work passion (e.g., Chen et al., 2009; De Clercq, Honig, & Martin, 2013).

In light of these limitations, the purpose of the present study is to provide the first theoretically driven definition and model of work passion by conceptualizing work as the target

of a relationship. Like romantic relationships, work is often a meaningful element of our lives, one in which we seek fulfillment and invest a great amount of time and energy. Though many models exist regarding relationship development and passion, one well-established theory is particularly fruitful for work. Specifically, the self-expansion model of love (Aron & Aron, 1986) explains why people seek out romantic relationships initially, and what happens to romantic passion over time. When a concept (e.g., passion) is expected to function similarly across contexts, borrowing theories from other disciplines and applying them to organizational contexts can be a useful approach to understanding organizational phenomena (Whetten, Felin, & King, 2009). Thus, this model provides a framework for understanding why work passion may be beneficial for choosing a job or career initially, but over time may no longer facilitate work-related outcomes (Aron & Aron, 1986). That is, the organization may need to “fuel the fire” of the employee’s passion; otherwise it may diminish and burn out over time. The self-expansion model suggests how this may be achieved through certain experiences with the “partner,” such that continued self-expansion opportunities at work sustain employees’ passion. The full study model is depicted in **Figure 1**.

Passion for Work

Today, there is a popular belief that the best way to have a fulfilling and successful career is to do work that you are truly passionate about. When considering career options, young people are often told to “follow their passion” and, for many, work does in fact become one of our first loves. For example, within the United States, people are delaying getting married and having children, choosing instead to prioritize work and careers over starting a family (Pew Research Center, 2014). Essentially, our first serious relationship – the place we put our energy and derive satisfaction and meaning – is likely to be with our work. For this reason, it makes sense that

people continually laud the importance of pursuing a meaningful and fulfilling career. Yet despite the popularity and regarded significance of this pursuit, it is not always clear what is meant by work passion. Without a well-defined understanding of work passion and how it facilitates work-related outcomes, we will make little progress in understanding the true nature of work passion, let alone how to maintain it over time.

The role of passion in the workplace has been discussed in the context of other concepts related to motivation, including intrinsic motivation (Rubino, Luksyte, Perry, & Volpone, 2009), engagement (Macey & Schneider, 2008), entrepreneurship (Baum & Locke, 2004) and grit (Duckworth, Peterson, Matthews, & Kelly, 2007), yet research focusing primarily on work passion as a unique construct has been largely atheoretical to date. This raises concerns about construct proliferation or putting “old wine in a new bottle,” such that work passion may be empirically redundant with related, well-established concepts (Le, Schmidt, Harter, & Lauver, 2010). Research on work passion – as a distinct construct in its own right – first emerged in the early 2000s when two social psychologists, studying passion for activities, argued that ‘work’ could be considered synonymous with ‘activities’ (e.g., cycling, gambling) (Vallerand & Houliort, 2003). These psychologists defined passion for an activity as “a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy” (p. 757), and suggested that this definition applies to passion for work as well. However, no theoretical rationale was provided for why activities and work should be treated as interchangeable. This is problematic given the differences between the two in terms of scope (e.g., playing basketball vs. teaching middle schoolers), time commitment (e.g., 2 hours a day vs. 8-10 hours a day), and need fulfillment (e.g., entertainment vs. financial stability).

Although this initial step toward defining and conceptualizing work passion lacked a strong theoretical grounding, Vallerand and Houliort's (2003) chapter on the applicability of passion to the workplace was instrumental in sparking the scientific community's interest in the work passion construct. In the years following, a handful of academics and consultants offered their own definitions for "employee work passion" (Zigarmi, Nimon, Houson, Witt, & Diehl, 2009), "passion for work" (De Clercq et al., 2013), and "job passion" (Ho et al., 2011). Unfortunately, these new definitions (a sample of which is presented in **Table 1**) have been vague or contaminated with other constructs, and there is not, to date, a single universally accepted definition of work passion. For example, some of the definitions are so broad as to seemingly apply to virtually any job or work attitude (e.g., Ho et al., 2011; Perrewé et al., 2014). Other definitions appear to be contaminated with either individual antecedents or behavioral outcomes of work passion, by virtue of including phrases such as "state of well-being *stemming from*", "appraisals of...situations that *results in*", and "a state of desire *on the basis of*" (Perrewé et al., 2014; Zigarmi et al., 2009). Still others are not conceptually distinct from other work-related constructs, such as intrinsic motivation or work engagement (e.g., De Clercq et al., 2013).

The fact that existing definitions of work passion are not distinct from definitions of other well-established, work-related constructs raises the question of whether work passion offers anything new or unique to the study of motivation. For example, De Clercq et al. (2013) defines passion as "the extent to which people experience feelings of pleasantness and joy when engaging in intensive work-related activities" (p. 656). Comparably, intrinsic motivation is also defined in terms of expending effort at work based on enjoyment of the work (Ryan & Deci, 2000), and flow refers to a positive mental state that occurs when one is immersed in challenging work activities (Csikszentmihalyi, 1990). If work passion is truly a unique and important

predictor of work-related outcomes, then it needs to be defined in a way that is distinguishable from other motivation-based constructs.

In addition to the lack of theory and a precise definition for work passion, the majority of research on work passion has been cross-sectional in nature, with a few cross-lagged designs (e.g., Houliort et al., 2014; Lavigne et al., 2012; Lavigne, Forest, Fernet, & Crevier-Braud, 2014). However, passion is often compared to an “inner fire” that must be fueled or rekindled lest it burn out. This metaphor suggests that the short-term and long-term effects of passion may vary depending on employees’ work experiences, yet the cross-sectional studies to date do not address such changes over time. If work passion does fade over time – but can be “fueled” and “rekindled” via certain experiences – then this has important implications for employees and organizations desiring to harness passion in the workplace.

Taken together, these limitations suggest that we need a new way of thinking about and defining work passion. As a first step to accomplishing this, it is useful to consider how people describe passion for someone (or something) in general. For example, the word ‘passion’ is often used to denote an emotion (in that it describes something we feel toward a person, object, or activity; Frijda, 2005), as well as a sense that the object of our passion is deeply and personally meaningful to us. When we think about someone who is truly passionate about a cause, we tend to picture someone who is fully dedicated, “all in,” and strongly affected by both successes and setbacks. Furthermore, the passion object seems to be incorporated into the sense of self, such that a romantic couple “becomes one” or the activity becomes “part of who we are.” This depiction of passion seemingly applies to both romantic love (e.g., passion for the partner) as well as work passion, suggesting that although the object of passion may vary, the nature of passion itself may be fairly consistent across contexts. In fact, it has been argued that passion is a

“domain-specific motivational construct” (Chen et al., 2009, p. 200), such that passion may exist in any domain, but must have a specific target within that domain (e.g., an activity, a person).

Given that passion is not confined to romantic relationships, it is surprising that discussions of work passion have not drawn on years of passion research found in the interpersonal relationships literature. If passion is truly expected to operate similarly across contexts, then existing theories regarding the role of passion in relationships should explain how passion functions in the workplace as well. More specifically, in order for a theory of romantic passion to apply to the workplace, it must meet a number of requirements. First, the theory must explain how passion for work influences one’s self-concept. Employees who self-describe as passionate about work also often describe their work as part of “who they are” and are quick to define themselves according to their work role (e.g., “I am a teacher” vs. “I teach students”). This suggests that the work has become an important, meaningful element of how a person perceives the self, and therefore the theory must address the implications of this shift in self-concept.

Second, the theory must explain how – and why – passion motivates behavior. Work passion is most often discussed within the context of other motivation-based constructs (e.g., intrinsic motivation; Rubino et al., 2009), and has been described as a “motivational force” that leads to increased work investment (Houlihan et al., 2014). Thus, it is important that the theory addresses not only *how* passion serves as a motivational force, but also how this form of motivation is distinct from other related and well-established constructs in the literature. Third, the theory must address the stability and outcomes of passion over time. If passion, like a fire, can either be fueled or burn out, then static theories and/or typologies are not sufficient for understanding how passion is experienced over time.

A theory in the romantic relationships literature that meets all of the above requirements is the self-expansion model of love (Aron & Aron, 1986). The self-expansion model explains how and why love motivates us to seek out relationships, and what happens to that love over time as people extend their self-concept to include aspects of the romantic partner. Although the self-expansion model has been traditionally applied to romantic relationships, it has also been successfully applied to other, non-romantic relationships and contexts as well. In fact, counseling psychologists proposed that “investigating self-expansion in contexts outside the romantic relationship, particularly in work life, could prove to be fruitful” (Graham, 2008, p. 692). Providing initial support for a broader application of this theory, the model was recently applied to leadership research in order to explain the process by which the follower incorporates the leader into his or her self-concept (Dansereau, Seitz, Chiu, Shaughnessy, & Yammarino, 2013). I propose the ideas of self-expansion theory are also valuable in understanding the concept of work passion and how it develops over time.

The Self-Expansion Model of Love

Aron and Aron (1986) developed the self-expansion model of love (originally called the self-expansion model of motivation and cognition in close relationships) to provide a framework for understanding why people enter into and maintain close relationships. The model is based on years of studying Eastern philosophy in particular and love and motivation in general, which led to the conclusion that “all motivation boiled down to love,” and “love was something about passion, excitement, and a hunger to ‘lose the self’ or ‘achieve union’” (Aron & Aron, 1996, p. 45). More specifically, the model is organized around two key components: the motivation for self-expansion, and the principle that people achieve self-expansion by including another into their self-concept.

The first key component, the self-expansion motivation, is based on the belief that people seek to expand the self in a number of ways (e.g., socially, cognitively) out of a desire to increase the “physical and social resources, perspectives, and identities that facilitate achievement of any goal that might arise” (Aron, Norman, & Aron, 1998, p. 2). Said in other words, self-expansion allows one to grow, have new experiences, and enhance one’s self-efficacy. Although the self-expansion model was originally proposed in terms of romantic love (i.e., a desire to expand via a romantic relationship), the authors noted that self-expansion may be achieved through virtually any human activity or experience, including learning, career, and platonic relationships (Aron & Aron, 1996). In fact, the notion that one can expand one’s attention and energy is also a key principle of the enrichment argument in work-family research (Marks, 1977; Rothbard, 2001). According to this argument, engaging in one role (e.g., work) allows one to accrue benefits, skills, and positive experiences, which then facilitate engagement and performance in the other role (e.g., family).

The second key component of the self-expansion model is that people attempt to achieve self-expansion by including another into the self through a close relationship (Aron & Aron, 1986). Specifically, the model states that what we call “love” is actually this desire to include the other into the self. Although love is typically defined as an emotion, proponents of the self-expansion model emphasize that “love is fundamentally motivational” and “at bottom love is a desire, a motivation for a particular relationship” (Aron & Aron, 1996, p. 48). Thus, love is a motivating force pushing us to develop and maintain closeness with someone – or something – that is meaningful to us. This relationship then allows us to expand the self as we are exposed to and absorb the qualities and characteristics of the other. This integration of the self with the other may explain why losing a romantic relationship can be so painful; in essence, we feel as if we

have lost a core part of who we are (Lewandowski, Aron, Bassis, & Kunak, 2006).

The self-expansion model also provides an explanation for why romantic passion (i.e., love) may fade over time (Tucker & Aron, 1993). According to the model, love for the other grows as the self expands (e.g., through developing new perspectives, gaining resources, having novel experiences) (Aron & Aron, 1986). However, as the other becomes fully included in the self, opportunities for self-expansion diminish. As opportunities for self-expansion diminish, so does the love and passion that was generated in the process (Sheets, 2014). Thus, in order to sustain love, self-expansion must be sustained, such as by continuing to seek out novel and arousing experiences with the other (Aron & Aron, 1996).

When applying this model to the study of romantic relationships, research has largely supported the model's premises and has found many benefits associated with self-expansion (see Mattingly & Lewandowski, 2014, for review). For example, among adults in a romantic relationship, greater self-expansion experiences are positively related to passionate love, but passionate love declines as time goes on and self-expansion opportunities diminish (Sheets, 2014). Falling in love (i.e., experiencing an expansion of the self) leads to an increase in general self-efficacy and self-esteem (Aron, Paris, & Aron, 1995), and self-expansion activities (e.g., high arousal activities engaged in with a partner) predict positive affect and relationship quality (Graham, 2008).

To summarize, the self-expansion model proposes that (1) love is a motivating force propelling us to establish and maintain close relationships, (2) we seek relationships that will allow us to broaden our sense of self by incorporating the other into our own self-concept, and (3) positive emotions and attitudes about the relationship are generated and sustained to the extent that self-expansion opportunities continue to be present.

Applying the Self-Expansion Model to Work Passion

In contrast to extant definitions of work passion that are either too vague to be useful or operationalized or are not clearly differentiated from other work attitudes and constructs, the self-expansion model of love provides a new approach to defining work passion.

Defining Work Passion

Considering definitions of passionate love in general and the role of love within the self-expansion model in particular, it is clear that love is characterized by both strong, positive emotions that motivate us toward some end (e.g., to seek a relationship, to be with the person we love) as well as a strong attachment to the target of our love. This close attachment has also been referred to as “inclusion of other in the self” (Aron, Aron, & Smollan, 1992). If passion is not confined to the romantic relationships domain, then it may be helpful to build on conceptualizations of passionate love when thinking about work passion. That is, work passion may similarly be composed of strong positive emotions and a strong attachment, but ‘work’ is the love object rather than another individual. This conceptualization of work passion is fitting given that previous definitions of work passion frequently involve references to intense positive emotions (e.g., Perrewé et al., 2014) and a sense that the work is important and personally meaningful (Vallerand & Houliort, 2003; Zigarmi et al., 2009). Notably, both aspects (positive emotions and identification) are key to the work passion construct. Simply feeling positively about the work is insufficient, as the deep, personal connection to the work is missing; likewise, simply feeling a strong identification with the work is insufficient as well, since the joy and enthusiasm derived from the work is absent.

Furthermore, conceptualizing work passion according to these two components provides a clear distinction between having a passion for work and having a strong interest in – or a purely

emotional connection with – the work. That is, although some argue that passion is the same as intense, positive emotions, the self-expansion model suggests that these emotions are not evidence of passion *until* one has had the opportunity to experience the work and incorporate it into the self-concept. In the same way that love (or passion for another) cannot fully develop until the early stages of a relationship – during which time the target is being incorporated into the self (Aron & Aron, 1996) – work passion cannot fully develop until the individual is exposed to the work in some form or another, and the work therefore has the opportunity to be incorporated into the self-concept. Notably, exposure to work and career interests can occur in a number of ways, ranging from experiences growing up (e.g., when having a pet as a child develops into a passion for working with animals) to vicarious learning (e.g., when hearing about a friend’s internship experience develops into a passion for the same field) (Lent, Brown, & Hackett, 1994).

Integrating the self-expansion model and previous conceptualizations of work passion, I propose the following working definition of work passion: *Work passion is a motivational state comprised of strong, positive emotions about the work and high overlap of the work with the self-concept.*¹

¹ As an initial test of the notion that passion is characterized by strong, positive emotions and a strong identification with the work, I conducted a handful of semi-structured interviews with individuals from various occupations. Interviewees included a middle-school science teacher, a director of campus wellness at a liberal arts college, a director of an aerospace company, a product coordinator for an upscale fashion retailer, and a web developer. Time and again, emotional attachment and a personal sense of identity emerged as primary themes in the interviews. Below are a few extracts from the interviews, demonstrating how these themes were described by different individuals when asked the question, “How would you describe or define ‘passion for work’?”

“It’s not just a job; it becomes part of your lifestyle. Something you personally feel strongly about and feel that is important.”

“You can’t not do something...Does this consume you? That’s passion.”

“You’re contributing part of yourself. It’s what you wake up thinking about. It’s the difference between taking your time to get to work in the morning and being right out the door, excited to get there.”

“There can be a bit more of an emotional commitment, a healthy emotional commitment where [a passionate person] celebrates successes more than someone who just got something done.”

“Because I found my passion, what other people would see as expensive and a more in-depth commitment to the work, I see as something I really enjoy.”

Differentiating Work Passion from Related Constructs

It is important to differentiate this theoretically derived definition of work passion from other motivation-related concepts in the organizational literature to confirm it is not just “old wine in a new bottle.” As the nature of work has shifted from routine, repetitive tasks (e.g., working on an assembly line) to dynamic and interactive tasks requiring complex and collaborative problem solving skills (Neubert, Mainert, Kretzschmar, & Greiff, 2015), theories and perspectives of what motivates employees have also evolved to account for these changing work conditions and characteristics. Specifically, motivation research has become increasingly interested in individual, person-related factors that motivate people to perform their work. Moreover, the positive psychology movement (Seligman & Csikszentmihalyi, 2000) has sparked an interest in those individual factors that promote and facilitate positive work-related and well-being outcomes, including callings (Wrzesniewski, Mccauley, Rozin, & Schwartz, 1997), affective commitment (Allen & Meyer, 1990), and intrinsic motivation (Deci & Ryan, 1985). Based on the theoretically derived definition of passion, I argue that these are related but distinct from work passion, and that work passion is a unique motivational state that is yet to be fully addressed and understood in the organizational literature.

Callings have been defined as “that place in the occupational division of labor in society that one feels destined to fill by virtue of particular gifts, talents, and/or idiosyncratic life opportunities” (Bunderson & Thompson, 2009, p. 38). For example, a person might feel that she “was born to be a teacher,” based on her relationship with her younger siblings and her gift to connect with children. People who view their work as a calling believe their work is personally and socially meaningful (Bunderson & Thompson, 2009; Wrzesniewski, 2012), and often report higher levels of life and work satisfaction (Wrzesniewski et al., 1997). Although occupational

callings may be associated with feelings of passion (Berg, Grant, & Johnson, 2010), researchers are careful to differentiate the two. A clear example of this is found in Wrzesniewski's (2012) discussion of callings and passions. She acknowledges that callings and passions are similar in that they involve a meaningful connection to the work, but argues they are distinct in that callings include a prosocial component (i.e., the work is socially significant or meaningful) and may or may not be a source of joy and pleasure; in contrast, passions do not necessitate a prosocial contribution, and are in fact characterized by strong positive emotions.

A second related concept to work passion is affective commitment, one of the three components of organizational commitment proposed by Allen and Meyer (1990). Affective commitment is characterized by an “emotional attachment to, identification with, and involvement in the organization” (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002, p. 21). Although both work passion and affective commitment involve emotional and cognitive components, they differ in two fundamental ways. First, whereas the target of work passion is the employee's work (e.g., conducting research), the target of affective commitment is typically the employee's organization (e.g., the employing university).² This means that affective commitment cannot be present until one is part of the organization, whereas passion extends before and even after one's employment. Second, rather than denoting love and intense positive emotions, the emotional component of affective commitment refers to identification with the organization's goals and/or values and a desire to remain with the organization (Allen & Meyer, 1990). As a result of these two key differences, work passion and affective commitment are expected to have non-overlapping antecedents and/or consequences. For example, because affective commitment

² Although affective commitment is typically studied within the context of organizational commitment, there is also research exploring other, related targets (e.g., career commitment; Blau, 1985). However, unlike work passion, these constructs do not emphasize the overlap between the self and the target (e.g., career) as a core component. Thus, work passion is distinct from these other forms of commitment as well.

signifies an attachment to the organization, employees who are highly committed are less likely to quit their current job, even in the face of obstacles or organizational constraints (Meyer et al., 2002). However, passionate employees may leave the organization if another job allows them to pursue their passion under better working conditions, because their attachment is to the work rather than the organization.

Third, work passion has conceptual similarities to intrinsic motivation (Deci & Ryan, 1985). In fact, it has been stated that “at its heart, intrinsic motivation is about passion and positive feelings that people get from their work” (Quigley & Tymon, 2006, p. 527). However, work passion refers to a more specific experience than intrinsic motivation. Intrinsic motivation is a broader category of motivation referring to the natural inclination to pursue activities for the sake of the enjoyment and satisfaction directly stemming from those activities (Ryan & Deci, 2000). In contrast, passionate people pursue work activities not only because they enjoy doing so, but also because work is an extension of the self (i.e., it has been incorporated into the self-concept). Thus, passionate employees are likely to continue engaging in work-related activities even when the work is not “fun” or immediately rewarding (Aron & Aron, 1986); yet the same cannot be said of intrinsically motivated employees who are more likely to stop engaging in the activity as soon as it becomes no longer satisfying or enjoyable (Ryan & Deci, 2000). Finally, intrinsic motivation lies along an extrinsic motivation-intrinsic motivation continuum (or, control-to-autonomy continuum) implying that the less intrinsically motivated a behavior is, the more extrinsically motivated it automatically becomes (Gagné & Deci, 2005). In terms of work passion, there is no assumed continuum such that a lack of passion indicates a pre-specified alternative reason for engaging in the work. In fact, passion may be best defined as a category or a discrete state (either you have passion or you do not), rather than a continuum.

In short, while most of these concepts capture the emotional and/or meaningful connection to the work, they are distinct from work passion in their causes, consequences, intensity, and/or target. Across these distinctions, perhaps the most important are those that relate specifically to the new, theoretically derived definition of work passion: strong positive emotions and an overlap of the self-concept with the work. Thus, to put it simply, although callings and affective commitment involve high self-concept overlap with the work, they do not necessitate intense, positive emotions. And although intrinsic motivation does involve these intense, positive emotions, it does not possess the same degree of high self-concept overlap as work passion, and the emotions are more hedonic in nature (e.g., pleasure and enjoyment derived from the work activities) compared to those associated with work passion (e.g., love and enthusiasm directed toward the work).

A Model of Work Passion

In addition to defining work passion, the self-expansion model is valuable for the development of a longitudinal model of work passion. Specifically, applying the self-expansion model provides a framework for understanding (1) the relationship between work passion and work engagement, particularly early in one's career, (2) how work passion may be sustained over time, and (3) the long-term outcomes associated with sustained passion.

Early Career Outcomes of Work Passion

The first few months on the job are abound with new experiences. During the socialization process, newcomers make new social connections (e.g., meeting their boss, colleagues, clients), learn job-related information and skills, and adjust to a new work environment (Saks, Uggerslev, & Fassina, 2007). In much the same way that a new romantic relationship is exhilarating because we are getting to know a person and gaining new experiences,

starting a new job or career also has a “honeymoon” period in which we are particularly happy and satisfied with the job (Boswell, Shipp, Payne, & Culbertson, 2009). And according to the self-expansion model, passionate newcomers are especially likely to benefit from this honeymoon period. This is because passionate newcomers have a strong emotional connection to the work, and the self-expansion opportunities (e.g., learning new skills, having novel experiences) further develop the work into the self-concept. As the emotional connection and identification with the work strengthen (i.e., as a result of experiencing self-expansion), passion intensifies and becomes a catalyst for future behavior. Notably, the employee’s passion and the perceived self-expansion opportunities are closely intertwined during this time, as newcomers tend to have “rose-colored glasses” and are more likely to focus on positive workplace characteristics (i.e., the “honeymoon effect”; Boswell et al., 2009). To specify which outcomes in particular may result from newcomer passion, it is helpful to return once again to our romantic relationship theory.

During the early stages of a romantic relationship, feelings of love and passion grow as we include the partner (e.g., their qualities, experiences, resources) into the self. People in a romantic relationship soon switch from an “I” mentality (e.g., “*I* enjoyed the movie”) to a “we” mentality (e.g., “*We* love that movie!”), and the self no longer becomes cognitively distinct from the other (Aron & Aron, 1996). This overlap of self-concept explains a number of unselfish behaviors typical of intense romantic relationships (Aron & Aron, 1997). For example, a person in love is often more willing to make sacrifices for the relationship, whether in terms of time, money, energy, or other resources. However, because there is now a “we” mentality, the sacrifice represents an investment instead of a loss. Rather than forfeiting her personal time, the person in love is giving her time to one who is – mentally and emotionally – part of the self. Furthermore,

people in the early stages of intense romantic love experience what has been called a “hypomanic-like state” (Brand, Luethi, von Planta, Hatzinger, & Holsboer-Trachsler, 2007). This early-stage intense romantic love is an all-consuming experience, one that involves persistent thoughts about the loved one, increased energy, feelings of overwhelming joy, and a desire to remain in close proximity to the loved one (Aron et al., 2005; Brand et al., 2007).

Similarly, when passion is directed at work, a person might also be more willing to make “sacrifices” for the work and to spend more time performing and thinking about work activities. Yet, the employee would not view this investment as a sacrifice or a loss because the work role is considered an extension of the self (Aron & Aron, 1997). One way that this investment of resources has been studied in the occupational literature is in terms of work engagement. Work engagement is a popularly discussed concept among both scientists and practitioners, but has been relatively vague in that a number of definitions for the term have been proposed (Macey & Schneider, 2008). As one example, Kahn (1990) defines engagement as “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 performance” (p. 700) (see also Schaufeli, Salanova, González-Romá, & Bakker, 2002).

To provide clarity to the construct, Macey and Schneider (2008) proposed a framework dividing engagement into three components: state, trait, and behavioral engagement. Of particular importance to the current study is behavioral engagement, which refers to discretionary behavior in the work context, including “innovating behaviors, demonstrations of initiative, proactively seeking opportunities to contribute, and going beyond what is, within specific frames of reference, typically expected or required” (Macey & Schneider, 2008 p. 14-

15). Given passionate employees' willingness to invest more time, energy, and personal resources into the work role, they may be especially likely to demonstrate these types of behaviors. However, although engagement (state, trait, and behavioral) has been traditionally confined to the work context (e.g., Kahn, 1990; Macey & Schneider, 2008) it seems reasonable that some employees may remain engaged in the work role while in other contexts and domains as well, such as the home. Thus, I conceptualize engagement as a broader set of actions in which an employee devotes their time, energy, and attention to work-related activities, whether at work or in other domains of life. Specifically, these actions include: (1) demonstrating more personal initiative to engage in work activities, (2) spending more time on work-related activities, and (3) engaging in more positive work-related rumination. At this point, it is important to note that the link between job-related attitudes and engagement behaviors is not a new phenomenon. For example, job involvement is positively related to work engagement and greater effort on the job (Brown & Leigh, 1996; Kühnel, Sonnentag, & Westman, 2009). However, it is expected that passion will uniquely predict engagement behaviors beyond other job-related motivation and/or attitude constructs.

First, the passionate employee is expected to engage in more proactive work behaviors. Proactive behavior refers to actions that are self-initiated, anticipatory, and future-oriented, and is defined as "taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions" (Crant, 2000, p. 436; Grant & Ashford, 2008). Notably, employees can proactively engage in both in-role and extra-role behaviors (Parker, Williams, & Turner, 2006). Examples of such behaviors include a professor seeking feedback regarding the clarity of his lectures (in-role), an individual voluntarily assisting coworkers with tasks or projects (extra-role), and an employee voicing

innovative ideas for improving work processes (in-role or extra-role). For passionate employees, engaging in these behaviors is a way to further invest in the work role. Work passion, like romantic love, is fundamentally motivational, prompting employees to prioritize and protect the work role (Aron et al., 2005; Aron & Aron, 1996). Thus, by proactively investing time, energy, and resources into the work role, the employee is actively shaping their work experience and communicating that their work means more to them than just their day-to-day tasks.

Engaging in proactive behaviors may serve an additional purpose for passionate employees as well. By proactively seeking out ways to improve workplace conditions and strengthen work relationships, the employee is creating an environment best suited for facilitating his passion (Koys, 2001). That is, the short-term sacrifice may result in long-term payoff, such as when improved workplace conditions enable the employee to have more resources or autonomy to pursue his passion, or when colleagues – recalling the help they once received – reciprocate and help the passionate employee during his time of need (e.g., Halbesleben & Wheeler, 2011). The long-term benefits of proactive behavior have also been discussed in the organizational newcomer literature. Specifically, newcomers who engage in more proactive behaviors (e.g., feedback-seeking, networking, job change negotiation) during the socialization process are more likely to have better work relationships, higher self-rated performance, and higher job satisfaction (Ashforth, Sluss, & Saks, 2007; Saks, Gruman, & Cooper-Thomas, 2011). Thus, the relationship between work passion and proactive work behaviors may be particularly important during the early career stage given employees' newcomer status within the organization and the desire to “fuel the fire” of their passion.

Hypothesis 1: Work passion is positively related to proactive work behaviors.

In addition to exhibiting more proactive behavior, passionate employees are also expected to commit more time to their work, in much the same way that the person experiencing intense romantic love desires to spend more time with their beloved (Brand et al., 2007). For the passionate employee, work is part of the self and provides valuable self-expansion opportunities; thus, work is both part of the identity as well as a source of positive experiences. People whose identity is strongly rooted in their careers (i.e., career identity salience) devote more time to the work role (Major, Klein, & Ehrhart, 2002); passionate employees may also demonstrate these time investment behaviors to the extent that they can enact their passion. Additionally, passionate employees may perceive being away from work as undesirable as it would prevent them from either engaging in the activities or pursuing the outcomes they are passionate about. Thus, I propose that employees high in work passion are more likely to devote more time to the work role, both in terms of hours spent at work as well as the total number of hours spent on work-related activities.

Hypothesis 2: Work passion is positively related to work hours.

Finally, passionate employees may also demonstrate increased engagement by devoting more cognitive attention to the work role, even when they are away from the physical workplace. That is, these employees may find it difficult to mentally detach from the work role, given the “all consuming” nature of passion. In romantic relationships, intense romantic love tends to be characterized by persistent thoughts about the partner (Brand et al., 2007). Even when separated from the partner, a person in love cannot help but constantly think about – and desire to be reunited with – their beloved. This longing for the other is more than psychological; it is physical as well. When people “fall in love” their brain is flooded with feel-good hormones and neurochemicals; but when they are physically separated from the loved one, their brains

experience an unpleasant state of neurochemical withdrawal and they yearn for a reunion with the loved one (Brand et al., 2007; Brizendine, 2006; Marazziti & Canale, 2004).

In a similar fashion, passionate employees may be unable to mentally “switch-off” from the work role, thereby engaging in greater work-related rumination. Work-related rumination, defined as perseverative or repetitive cognitions about work during leisure time (Cropley, Michalianou, Pravettoni, & Millward, 2012; Frone, 2014), is typically thought of as a negative process, but research has uncovered positive forms of rumination as well. For example, whereas *negative rumination* (also known as affective rumination) involves perseverative thoughts about work stressors and sustained physiological arousal, *positive rumination* (also referred to as problem-solving pondering) involves thinking about work issues outside of work in order to find a solution for a work-related problem, to reflect on past performance, or simply because the work issues are interesting and intellectually stimulating (Cropley et al., 2012; Hamesch, Cropley, & Lang, 2014). Positive rumination is less detrimental to health outcomes than negative rumination because it is not associated with sustained physiological arousal, thereby it can allow employees to recover from the workday. Positive rumination has even been linked to less chronic and acute fatigue (Querstret & Cropley, 2012) as well as decreased alcohol use after work (Frone, 2014).

Passionate employees may be particularly likely to engage in positive rumination for two reasons. First, passionate employees are motivated by the positive emotional connection they feel toward the work. This suggests that passionate employees will be more likely to ruminate about positive work events and characteristics (e.g., friendship formation, a promotion), solutions to work-related problems, and interesting work projects because thinking about the work role – just like thinking about a romantic partner – stimulates the positive emotions and increases positive mood (Aron et al., 2005; Brand et al., 2007). Second, passionate employees may engage in more

positive rumination because their identity is so deeply rooted in their work. The self-concept has been considered a “social force” that affects our thoughts, emotions, and behaviors (Oyserman, 2001); thus, the passionate employee will find it difficult to switch off part of their identity, to ignore a defining characteristic of who they are and how they perceive the self simply because they have stepped outside of the physical boundaries of the workplace.

As a final note, the inability to mentally switch-off from the work role may be particularly difficult during early stages of one’s career because this is the time associated with the greatest self-expansion (Aron & Aron, 1986). Similar to the persistent and intrusive thoughts about a romantic partner that are characteristic of falling in love, the new experiences and positive emotions associated with experiencing self-expansion on the job may prevent the passionate employee from cognitively disengaging from the work when at home. Although employees may also engage in greater negative rumination (and either form of rumination might interfere with meeting family responsibilities; Greenhaus & Beutell, 1985), the current paper focuses on the positive form of rumination consistent with the romantic relationships literature.

Hypothesis 3: Work passion is positively related to positive rumination.

Sustaining Work Passion Over Time

Perhaps the greatest value of the self-expansion model is its capability of explaining what happens to work passion over time and how work passion may be sustained. Specifically, the model suggests that work passion may fade as employees spend more time in the work domain and opportunities for self-expansion diminish; however, an employee may be able to fuel his passion to the extent that he is able to continue experiencing novel and arousing experiences (Aron & Aron, 1996; Sheets, 2014).

As discussed previously, the early career stage is replete with new experiences and challenges as employees meet new people, learn new skills, and acquire new knowledge (Saks et al., 2007). Yet, this novelty eventually wears off, and what was once new and exciting becomes routine and predictable. Thus, it seems that interpersonal relationships are not the only domain in which we experience a honeymoon period. In fact, newcomers on the job typically experience a peak in job satisfaction during the first six months, at which point satisfaction begins to steadily decline (Boswell et al., 2009). Why does this decline occur, and is it possible to prevent?

According to the self-expansion model, love motivates us to pursue a romantic relationship because we believe it will provide valuable opportunities for self-expansion (Aron & Aron, 1986). Then, our love for the romantic partner increases as we experience self-expansion. However, as self-expansion opportunities diminish, so do our feelings of passionate love. This is because passion is generated to the extent that a person is able to broaden the self-concept via an incorporation of the other into the self; yet, people do not have an unlimited amount of experiences, qualities, and resources to offer. The more we incorporate the other into the self as the relationship develops, the fewer the opportunities for self-expansion remain (Aron & Aron, 1996). Without self-expansion to fuel our passion, the passion fades and we lose the initial “spark” of interest and attraction (Tucker & Aron, 1993).

Fortunately, it is possible to sustain passion by continually seeking out self-expansion opportunities. Consistent with the self-expansion model (Aron & Aron, 1986), couples in longer-term relationships report lower levels of self-expansion (e.g., being with the partner no longer expands the sense of self or is a source of new experiences) compared to those in shorter-term relationships (Sheets, 2014). However, couples in longer-term relationships who *do* continue to engage in novel and challenging activities together are better able to maintain their relationship

quality after the honeymoon period has ended (Aron, Norman, Aron, McKenna, & Heyman, 2000). Applied to the work domain, this suggests that as an employee expends greater time, behavior, and attention in the work role, she will need to continue seeking out self-expansion opportunities on the job in order to sustain her passion. Said in other words, initial passion is expected to predict the energy (proactive behavior), time (work hours), and attention (rumination) invested into the work role; this investment in turn provides more opportunities for the employee to continue pursuing and living her passion, provided it is compensated with self-expansion opportunities. Alternatively, if the employee is putting in extra time and effort into the work role but not learning anything new or experiencing anything exciting in return, then engagement will be futile and passion will diminish over time.

To illustrate, imagine a person who is early in her career and passionate about teaching middle schoolers. This teacher may initially stay after school to help students who are struggling (i.e., greater work hours) or may spend her weekends thinking about how to improve the following week's lesson plans (i.e., positive rumination). However, the long-term effect of this investment depends on whether or not she continues to experience self-expansion. If the teacher is able to continue fueling her passion with novel and arousing experiences in which she can continue to apply and challenge herself (such as learning new teaching methods or establishing relationships with new students), then investing more time, energy, and attention into the work role should sustain her passion over time. However, in the absence of self-expansion opportunities, the extra time and energy expended will no longer fuel her passion because the work role has become routine and predictable. In fact, the self-expansion model predicts that time *decreases* passion because it leads to habituation; but, if the time is spent doing self-expanding activities with the romantic partner, then it will *increase* passion as the individuals

grow and learn together (Aron & Aron, 1997). Thus, similar to a romantic relationship, I propose that investing more time and attention into the work role will only fuel work passion when self-expansion opportunities are available.

One important caveat here is that the self-expansion activities must be relevant to aspects of the work that have been incorporated into the self. For example, the passionate middle school teacher might be deeply passionate about connecting with students but is less interested in grading assignments or having lunch duty. Thus, novel and arousing activities will only be self-expanding to the extent that they are relevant to building relationships with students, because it is this aspect of the work that the teacher has incorporated into the self-concept and therefore feels personally and emotionally connected to. This is akin to the experience of self-expansion opportunities within the context of a relationship. Although non-relational novel and arousing activities might increase the self-concept in general (Mattingly & Lewandowski, 2014), couples must engage in expanding activities *together* in order for romantic love and relationship quality to be sustained (Aron & Aron, 1996; Aron et al., 2000).

Hypothesis 4: Self-expansion opportunities moderate the relationship between engagement and long-term passion such that the relationship is positive when self-expansion opportunities are high but negative when self-expansion opportunities are low.

Work Passion and Work Engagement Behaviors Over Time

In addition to explaining how passion is sustained over time, the self-expansion model also provides a framework for understanding how – and when – long-term passion continues to motivate work engagement behaviors. At this point in the paper, it has been argued that newcomer passion should directly motivate work engagement behaviors during the honeymoon period (Hypotheses 1-3), and that these engagement behaviors should fuel long-term passion

when self-expansion opportunities are high (Hypothesis 4). The current section discusses the conditions under which long-term passion is expected to continue motivating work engagement behaviors, long after the honeymoon period has ended.

In romantic relationships, the partner becomes deeply ingrained into the self-concept, and self-expansion increases positive mood and other psychological resources (e.g., self-efficacy) (Aron et al., 1995; Lewandowski et al., 2006). Thus, people are motivated to protect and prioritize the self-expanding relationship because losing the relationship would be detrimental to the self-concept and personal well-being (Lewandowski et al., 2006; McIntyre, Mattingly, Lewandowski, & Simpson, 2014). This suggests that, over time, passionate employees will continue investing energy and resources into the work role because the work has become deeply and personally meaningful. However, whereas newcomers invest more time, energy, and attention into the work role because self-expansion opportunities are essentially “built in” to the new employee experience, work passion will only facilitate long-term engagement if the employee continues to experience self-expansion opportunities well after the honeymoon period has ended (Aron et al., 2000; Boswell et al., 2009). In contrast, if the passionate employee is not able to experience continual self-expansion opportunities, then the intrinsic desire and motivation to invest in the work role will diminish and engagement will decrease.

Although not directly discussed in the self-expansion literature, this might be akin to a long-distance relationship in which an individual loves and feels attached to a romantic partner, but without opportunities to see and grow with the partner (i.e., to “self-expand”) the individual eventually withdraws, decreasing the amount of time and energy invested into the relationship. In fact, long-distance couples not only report feeling deprived of fun and unusual activities, but may also “start taking different paths” and lose their initial connection (Sahlstein, 2004).

Hypothesis 5: Self-expansion opportunities moderate the relationship between long-term passion and long-term engagement such that the relationship is positive when self-expansion opportunities are high, but negative when self-expansion opportunities are low.

Taken together, Hypotheses 4 and 5 suggest a long-term reciprocal relationship between engagement behaviors and work passion, moderated by continual self-expansion opportunities. This reciprocal relationship is depicted in the full study model (**Figure 1**) by the opposite facing arrows running parallel between work engagement behaviors and work passion at Time 2.

Caveats to Applying the Self-Expansion Model to Work

Although the self-expansion model appears useful for understanding both the conceptual and temporal nature of work passion, it is possible there are a few caveats to applying this theory to the workplace. Borrowing theories and concepts from other disciplines is common practice in organizational research, but doing so can be problematic if careful consideration is not made for context and/or levels of analysis (Whetten et al., 2009). Thus, it is important to examine whether – and when – this theory originally developed to explain interpersonal, dyadic relationships may not be relevant for the workplace.

First, the self-expansion model was initially proposed to explain why people seek and maintain close, interpersonal relationships (Aron & Aron, 1986). Within a romantic relationship, two people are involved in a “give and take” of sorts, a reciprocity of love and affection. In fact, Aron and Aron use the phrase “including each other in each other’s self” (Aron & Aron, 1996, p. 47) – an admittedly awkward phrase – to emphasize that self-expansion involves a cognitive overlap of two different selves. One partner does not expand the self at the expense of the other (i.e., one partner does not “lose” his or her identity to the other); rather, each partner experiences

an enlargement of the self as the two selves become merged. Self-expansion in this context then exists at the dyadic level.

However, this same reciprocity or dyadic exchange may not be possible when the “other” is not another individual, as is the case for work passion. For the passionate employee, the expansion of the self involves including the work role into the self-concept, but this exchange cannot move in the opposite direction; that is, the work does not have a self-concept. Thus, this uni-directionality may limit the applicability of the model to the workplace. For example, I have proposed that self-expansion opportunities are necessary for sustaining passion over time. However, other interpersonal factors might be necessary as well – such as positive feedback (Deci, 1971) or perceived supervisor support (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002) – in order to feel that the passion is being “reciprocated” in some form.

Second, the self-expansion model offers an explanation for the causes and consequences of unrequited love that have unclear implications for the workplace. It has been proposed that unrequited love results from a desire to be in love rather than to genuinely want a romantic relationship (Aron & Aron, 1996). Individuals experiencing unrequited love perceive self-expansion and love to be highly desirable, yet do little to seek out or establish a suitable relationship. What might unrequited love look like in terms of work passion? Perhaps this occurs when a person feels passionate about an occupation or a purpose, but lacks the skills or the knowledge to perform well on the job (e.g., a person who feels called to teach but does not know how to relate to children). Or maybe it occurs when an employee does not receive positive feedback on the job, despite expending great amounts of time, energy, and effort. Then again, perhaps this is an aspect of the self-expansion model that cannot be “borrowed” and applied to

work passion, due to the different levels of analysis (e.g., dyadic vs. individual) (Whetten et al., 2009).

Summary

To summarize, I propose that work passion predicts proactive behavior, work hours, and positive rumination early in one's career. Then, the relationship between these engagement behaviors and long-term passion depends on one's self-expansion opportunities. Finally, the long-term reciprocal relationship between work passion and engagement behaviors depends on one's continual self-expansion opportunities.

Overview of the Present Research

In order to specify the nature of the work passion construct and test key aspects of the proposed study model, three separate studies were conducted (see **Table 2** for an overview of these three studies). Study 1 examined the psychometric properties of the work passion construct using exploratory factor analysis (EFA) and latent profile analysis (LPA). Then, Study 2 sought to replicate the LPA findings from Study 1, and to conduct a confirmatory factor analysis (CFA) in order to examine work passion as a higher-order factor (i.e., a latent multidimensional construct). Using a sample of current employees, Study 2 tested the second half of the proposed study model by examining the moderating effect of self-expansion opportunities on the work passion–engagement relationship (Hypotheses 4-5). Study 2 also provided a preliminary test of Hypotheses 1-3 by examining how newcomer status affected the passion–engagement relationship. Finally, Study 3 tested work passion over time by measuring passion among newcomers at Time 1, and again 3 months later after the honeymoon period had faded. Structural equation modeling (SEM) with autoregressive and cross-lagged paths was used to test the relationship between newcomer work passion and positive rumination during the honeymoon

period (Hypothesis 3), and whether self-expansion moderated the relationship between newcomer engagement and later work passion (Hypothesis 4). A more in-depth discussion of the analyses is provided prior to each study's results section.

Chapter 2

STUDY 1

The purpose of Study 1 was to examine the psychometric properties of the work passion construct and to distinguish it from other, related constructs in the literature. Because work passion has been defined as strong, positive emotions about the work and high overlap of the work with the self-concept, analyses were focused on the measurement of these two constructs as the underlying indicators of work passion. It was also important to demonstrate that the proposed measurement of work passion is more useful than existing measures of passion, as well as examining positive emotions and identification individually. As a result, additional motivation-based constructs were included in the analyses to provide evidence of convergent and discriminant validity for the work passion construct. Specifically, an existing work passion scale including harmonious and obsessive passion was included to demonstrate convergent validity, while financial motivation was included to demonstrate discriminant validity.

Method

Participants and Procedures

A total of 362 undergraduate students from mid- to upper-level psychology courses completed an online survey in exchange for course extra credit. At the beginning of the survey, students were asked if they had prior work experience within the past two years. Specifically, they were asked whether they had a job (paid or unpaid) for at least 3 months. Only students who responded “Yes” (94.2%) were included in the analyses. In order to confirm that participants were carefully reading and responding to each survey item (Meade & Craig, 2012), one attention

check item was included in the survey (i.e., “Respond with ‘Strongly Disagree’ to this item”). Only participants who reported having prior work experience and correctly responded to the attention check item were included in the final sample. This final sample included 306 participants (84.5% of total; 93 males, 213 females) with ages ranging from 18 to 51 ($M = 21.24$, $SD = 3.41$). In terms of race/ethnicity, 70.7% were Caucasian, 10.1% were African-American, 6.2% were Hispanic, 10.7% were Asian or Asian-American, and 2.3% were other/unidentified. Finally, 89.6% reported that their experience was paid, and work experiences included a variety of job titles, including Childcare Provider, Sales Associate, Event Manager, and Summer Intern.

Measures

Prior to each scale, participants were instructed to keep their work experience in mind when responding to each set of questions. To distinguish the notion of ‘work’ from related constructs (e.g., the job, the organization), participants were instructed to think specifically about “the tasks, interactions, and outcomes related to the occupation.”

Positive emotions about work. Positive emotions about work was measured with five emotion items from the high pleasure-high arousal subscale of the Job-Related Affective Well-Being Scale (Van Katwyk, Fox, Specter, & Kelloway, 2000). Participants were asked to indicate the amount to which their prior work experience made them feel each emotion on a scale of 1 (*never*) to 5 (*all of the time*). The emotions included were energetic, excited, ecstatic, enthusiastic, and inspired ($\alpha = .88$).

Self-concept overlap with the work. Self-concept overlap with the work was measured using the 4-item Identity subscale of the Collective Self-Esteem Scale (Luhtanen & Crocker, 1992), originally developed to assess identification with one’s social groups and adapted to reference one’s prior work. For example, the item “*The social groups I belong to are an*

important reflection of who I am” was adapted to read “*My work was an important reflection of who I am.*” Participants were asked to indicate the extent to which they agreed with each item, with response options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Two of the items were reverse-coded ($\alpha = .90$).

Harmonious and obsessive passion. When Vallerand and Houliort (2003) introduced the concept of work passion into the scientific literature, they further proposed that work passion could be measured by adapting a passion for activities scale to refer to “work” instead of “activities.” This scale was called the Passion Toward Work scale, and included two sub-scales: (1) passion that facilitated positive outcomes, labeled “harmonious passion,” and (2) passion that felt uncontrollable and facilitated negative outcomes, labeled “obsessive passion.” Although these scales had adequate reliability and a handful of researchers have since used them to measure passion (e.g., Liu, Chen, & Yao, 2011), there are a number of concerns regarding treating work as interchangeable with activities. Conceptually, work is linked to life necessities (e.g., steady income), is more time consuming, and encompasses more than just activities; that is, people may feel passionate about the outcomes of their work, the meaningfulness of their work, or the relationships they build through their work. In terms of the Passion Toward Work scale itself, no validation studies have been performed for this scale, and the scale was originally offered “for illustrative purposes” (Vallerand & Houliort, 2003, p. 186). For these reasons, it seems premature to adopt this scale as the most reliable and valid measure of passion. Thus, the harmonious and obsessive passion scales were included in order to examine the viability of these scales for measuring passion, as well as to provide convergent validity evidence for the new measurement of work passion.

Harmonious passion and obsessive passion were measured using the 14-item Passion Toward Work Scale (Vallerand & Houliort, 2003). Participants were asked to indicate the extent to which they agreed with each item on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Seven items measured harmonious passion (e.g., “*My work was in harmony with the other activities in my life*”; $\alpha = .90$) and the remaining 7 items measured obsessive passion (e.g., “*I had almost an obsessive feeling for my work*”; $\alpha = .90$).

Financial motivation. Because passionate employees are intrinsically motivated and pay represents an extrinsic motivator, work passion should not be correlated with financial motives for working (or, should at least be negatively related). Thus, financial motivation is included as an indicator of discriminant validity for the work passion construct. Four items were used to assess financial motivation; participants were asked to indicate the extent to which each item represented what motivated them to choose their work experience, with response options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is: “*Because I needed to earn money;*” $\alpha = .95$.

Data Analytic Approach

Because the current paper introduces a new definition of and measurement for the work passion construct, a variety of analytical approaches are used to test the viability and usefulness of the construct. Specifically, work passion is defined as a multidimensional construct comprised of strong positive emotions about the work and high self-concept overlap with the work. But, the attributes or dimensions of multidimensional constructs can relate to each other in various ways (Law, Wong, & Mobley, 1998), deeming it necessary to specify the precise model under which the overall construct is related to the individual dimensions.

Two models of multidimensional constructs are particularly relevant to the concept of work passion: profile models and latent models (Law et al., 1998). A profile multidimensional construct is “interpreted as various profiles formed by pairing the characteristics of different dimensions” (p. 743). According to this type of model, positive emotions and self-concept overlap may combine to form multiple profiles of individuals, one of which would characterize passionate individuals (i.e., people with strong positive emotions combined with high self-concept overlap). Conversely, a latent multidimensional construct is a higher-level construct that underlies its specific dimensions (i.e., the dimensions are manifestations of the multidimensional construct) (Edwards, 2001). According to this type of model, work passion would be a higher-order construct that underlies positive emotions and self-concept overlap.

Because other measures of work passion have been proposed in the literature, it was important to first examine the underlying structure of a battery of passion variables before examining work passion as a multidimensional construct. Thus, the first step was to conduct an exploratory factor analysis (EFA). Then, a latent profile analysis (LPA) was conducted to examine whether there were identifiable profiles of people based on their positive emotions about work and self-concept overlap with work.

Exploratory factor analysis. An EFA was conducted on the positive emotion items, self-concept overlap with work items, and harmonious and obsessive passion items using SPSS 22. Theoretically, these items should all represent passion; therefore it was important to test whether they all loaded onto a single factor. The purpose of EFA is “to arrive at a more parsimonious conceptual understanding of a set of measured variables by determining the number and nature of common factors needed to account for the pattern of correlations among the measured variables” (Fabrigar, Wegener, MacCallum, & Strahan, 1999, p. 274). The current

paper proposes that positive emotions and self-concept overlap are the fundamental components of work passion. However, other researchers have proposed that passion is best modeled using a dualistic framework in which passion for work is either beneficial and in harmony with other aspects of life (i.e., harmonious passion) or harmful and in conflict with other aspects of life (i.e., obsessive passion). Thus, an EFA was an appropriate first step in examining whether these four constructs individually contribute to researchers' understanding of work passion as a whole, or whether one (or more) of these constructs is redundant with the others.

The responses to the various passion items were factor analyzed using principal axis factoring (PAF) with oblique (direct oblimin) rotation. Multiple criteria for determining the number and distinctiveness of the factors were used, including Kaiser's criterion, total variance explained, and theoretical rationale. Next, factor loadings were examined to determine whether items loaded strongly and predominantly onto their intended factor. Items with weak loadings onto their intended factor (below 0.5), or with cross-loadings of greater than 0.3 are typically considered to be poor items that weaken measurement and interpretation of the individual factors (Fabrigar et al., 1999).

Latent profile analysis. Next, an LPA (Lazarsfeld & Henry, 1968) was conducted to examine whether there were identifiable profiles of people based on positive emotions about work and self-concept overlap with work. In contrast to the variable-centered approaches (e.g., regression analyses, structural equation modeling) that examine the relationship between independent and dependent variables, LPA uses a person-centered approach to identify typologies – or profiles – of people. Essentially, LPA postulates that individuals can be placed into qualitatively and quantitatively distinct groups, modeled as categorical latent variables, given their responses to a set of continuous observed variables. Examples of LPA in the

organizational sciences include classifying employees based on levels of workplace affective commitment (Morin, Morizot, Boudrias, & Madore, 2011) and creating profiles of employees based on use of emotional labor strategies (Gabriel, Daniels, Diefendorff, & Greguras, 2015).

Within the current study, LPA was used to address the question: Are there identifiable latent profiles of students based on their positive emotions about work and self-concept overlap with work? Conceptually, students who are high on both dimensions (i.e., positive emotions, self-concept overlap) would be considered passionate about their work, while students who are high on neither – or only one dimension – would not be considered passionate about their work. For example, students who report feeling strong, positive emotions about their work but low self-concept overlap likely represent a group of individuals whom enjoys their work but are not considered passionate because they lack a sense of identification with the work.

To test these predictions, a series of LPAs were conducted using Mplus 7.0 (Muthén & Muthén, 1998-2012). Six fit statistics were examined to compare the models: Akaike information criterion (AIC; Akaike, 1987), Bayesian information criterion (BIC; Schwarz, 1978), sample-sized adjusted BIC (ABIC; Sclove, 1987), entropy (Celeux & Soromenho, 1996), Lo-Mendell-Rubin likelihood ratio test (LMR; Lo, Mendell, & Rubin, 2001) and bootstrap likelihood ratio test (BLRT; McLachlan & Peel, 2000). The AIC, BIC, and ABIC indices represent the trade-off between a model's goodness of fit with the complexity of the model (i.e., the number of parameters estimated). For all three indices, lower values indicate a better fitting model. Entropy ranges from 0 to 1, with values closer to 1 indicating greater classification accuracy and therefore a better fitting model. The LMR and BLRT compare a $k-1$ class model with a k class model, and significant p values for both of these indices suggest that the smaller model ($k-1$) should be rejected in favor of the larger model (k).

Because there are no set cut-off values for LPA indices and the various indices rarely agree on the best fitting model, adding covariates to the model can help determine the adequate number of classes. For example, simulation studies have found that the AIC and ABIC can overestimate the appropriate number of classes (Nylund, Asparouhov, & Muthén, 2007). Adding covariates to the models provides additional information about the latent classes without changing the nature of the profiles (Morin et al., 2011). For this reason, the current study uses the above fit indices to narrow down the appropriate number of classes, and then compares the model fit indices after two covariates representing other forms of work motivation (i.e., financial motivation and obsessive passion) have been added to the models.³ Financial motivation was added as a covariate because passionate individuals are expected to be less likely than other individuals to be motivated by pay; rather, they perform their work out of an intrinsic desire to engage in the work and/or to pursue certain work outcomes. In contrast, non-passionate individuals are expected to be much more financially motivated, as they lack the internal drive to perform the work. Obsessive passion was also added as a covariate because passionate individuals may be more “at risk” for developing an obsessive or compulsive attachment to their work, given that the work is already so deeply ingrained in their sense of self (Spence & Robbins, 1992). In contrast, non-passionate individuals do not personally identify with the work and are therefore less likely to feel that same sense of compulsion.

Results

The descriptive statistics (means and SDs, correlations, and internal consistency coefficients) of the study variables are reported in **Table 3**. As expected, positive emotions about work and self-concept overlap with work were strongly and positively correlated, yet not

³ As mentioned in the overview of Study 1, harmonious passion was also examined as a related work motivation construct. However, EFA analyses – described in more detail in the Results section – indicated that the harmonious passion scale was not a valid or useful measure of passion; thus, it was not included as a covariate in the LPA.

completely redundant ($r = .64, p < .01$). Additionally, harmonious passion and obsessive passion both showed strong, positive correlations with each other and with positive emotions and self-concept overlap ($.43 \leq rs \leq .75, p < .01$). The highest correlation was between harmonious passion and positive emotions about work ($r = .75, p < .01$), confirming the need to test whether harmonious passion is a unique and useful measure of work passion. Overall, these strong, positive correlations highlight the importance of examining whether these variables are truly distinct from one another, or whether work passion is a new case of construct proliferation (Le et al., 2010).

Exploratory Factor Analysis Results

Results from the EFA are reported in **Table 4**. The analysis yielded four factors with eigenvalues greater than 1 and explained 68.05% of the total variance. A closer look at the item loadings revealed that the self-concept overlap items and the obsessive passion items loaded strongly onto their intended factor and did not have any cross-loadings. Four of the five positive emotion items also loaded strongly and solely onto their intended factor, but one item (“Inspired”) had moderate loadings onto both the positive emotions factor and the self-concept factor. However, because the current paper postulates that these two constructs are the core components of work passion, it is less worrisome that the item loads onto both factors.

In terms of the harmonious passion scale, only 2 of the 7 items loaded strongly onto their primary factor: “My work allowed me to live a variety of experiences” and “The new things that I discovered within the confines of my work allowed me to appreciate it even more.” Notably, these two items appear to be more indicative of self-expansion opportunities (e.g., having a variety of experiences, discovering new things) than actual emotions or feelings about the work. This is problematic because feelings about the work and experiences at work are not the same

thing, and the self-expansion model argues that each component must be considered separately in order to understand how the process and dynamics of passion unfold over time.

The remaining 5 harmonious passion items loaded weakly onto their intended factor, had cross-loadings with other factors, and/or loaded more strongly onto a separate factor (for example, the item “I was completely taken with my work” had a stronger loading on the factor representing obsessive passion). In fact, one of the items had weak cross-loadings across 3 of the 4 factors, perhaps due to the double-barreled wording of the item (i.e., “My work was a passion, that I still managed to control”). These results suggest that the harmonious passion scale may not be tapping a distinct or unique construct when compared to other passion-related scales. Because of the poor loadings, double-barreled item, and construct contamination with self-expansion, the harmonious passion scale was not included in future analyses.

Latent Profile Analysis Results

Next, a series of LPAs for 1 to 7 latent profiles was conducted to examine the viability of measuring work passion as a profile multidimensional construct. The fit indices of the LPA models are reported in **Table 5**, and supported either the 4-, 5-, or 6-class solution as the best fitting model. Specifically, the BIC favored the 4-class model, the ABIC, LMR, and BLRT favored the 5-class model, and the AIC and entropy favored the 6-class model. However, the AIC was nearly identical for the 5-, 6-, and 7-class solution; taking the parsimony principle into account, this would suggest that the 5-class solution is preferable. In addition, it is recommended that the entropy not be used in itself to select the model with the optimal number of classes because it tends to be more unreliable than other indices (Tein, Coxe, & Cham, 2013), and despite the 6-class model having the largest entropy, it was not statistically different from the 5-class solution according to the LMR and BLRT tests. Thus, the optimal number of classes was

narrowed down to either the 4- or 5-class model. These two models yielded highly distinct profiles and had average posterior probabilities of class membership in the dominant profile ranging from 0.87 to 0.93 for the 4-class solution and from 0.80 to 0.95 for the 5-class solution, with very low cross-probabilities (ranging from 0.00 to 0.11 for both the 4- and 5-class solution).

To help select the final model, financial motivation and obsessive passion were added as covariates to the 4- and 5-class solution. Because passionate employees are less likely to be motivated by pay and have internalized the work into the self-concept, it was expected that this group would have lower financial motivation but higher obsessive passion. When financial motivation and obsessive passion were added as covariates, the fit indices favored both the 4-class solution (BIC, LMR, and BLRT) and 5-class solution (AIC, ABIC, and entropy) (see bottom of **Table 5**). However, because the LMR and BLRT indicated that the 5-class solution was not a statistically better fit compared to the 4-class solution – and simulation studies have indicated that the BLRT and BIC are the most accurate likelihood-based test and information criteria test, respectively (Nylund et al., 2007) – the 4-class solution was chosen as the final, best fitting model. The 4-class solution with covariates also yielded high posterior probabilities of class membership (ranging from 0.86 to 0.94) and low cross-probabilities (ranging from 0.00 to 0.14).

The overall sample means and conditional response means for each class are presented in **Table 6** and the level of positive emotions and self-concept overlap in the four latent profiles are illustrated in **Figure 2**. The first latent profile consisted of individuals who reported rarely feeling positive emotions about their work and who did not feel any self-concept overlap with their work. This profile was labeled “disgruntled” and described 21.90% of the sample ($n = 67$). The second latent profile consisted of individuals who sometimes felt positive emotions about

their work and had moderate self-concept overlap with the work. This profile was labeled “invested” and described 35.62% of the sample ($n = 109$). The third latent profile consisted of individuals who, like the “invested” profile, sometimes felt positive emotions about their work, but were ambivalent about whether their self-concept overlapped with their work. This profile was labeled “apathetic” and described 24.18% of the sample ($n = 74$). The fourth and smallest latent profile consisted of individuals who frequently felt positive emotions about their work and had strong self-concept overlap with their work. This profile was labeled “passionate” and described 18.30% of the sample ($n = 56$).

The relationships between the covariates (financial motivation and obsessive passion) and the latent profiles are reported in **Table 7** (taking the “passionate” profile as the referent) and illustrated in **Figure 3**. The results show that both financial motivation and obsessive passion contribute to the prediction of at least one latent profile. Specifically, financial motivation is associated with a greater probability of belonging to the “disgruntled” group, and obsessive passion is associated with a greater probability of belonging to the “passionate” group (i.e., the reference group). Said in other words, having strong positive emotions about work and high self-concept overlap with work is associated with obsessive passion, while a lack of these characteristics is associated with financial motivation. In addition, an examination of results in which different reference classes were used indicated that the “invested,” “apathetic,” and “passionate” groups were not statistically different from one another in terms of financial motivation, and that the “disgruntled” group was much less likely to have obsessive passion compared to either the “invested” or “apathetic” group.

Finally, because there has been some contention regarding the extent to which covariates affect profile membership (Lubke & Muthén, 2007), the 4-class solutions with and without

covariates included in the model were compared. When covariates were excluded from the model, the four profiles remained substantially the same. Specifically, the percentages of individuals within a particular profile did not vary by more than 2% of the sample, and the means for positive emotions and self-concept overlap did not vary by more than 0.1. Of the 306 individuals in the sample, 293 (95.8%) were assigned to the same profile in both analyses, while only 13 changed profile membership. More specifically, 5 individuals moved from the “invested” group to the “apathetic” group, 1 moved from the “invested” group to the “passionate” group, 6 moved from “passionate” group to the “invested” group, and 1 moved from the “apathetic” group to the “disgruntled” group. Overall, the consistency of profile membership both quantitatively (i.e., number of individuals within each group) and qualitatively (i.e., conditional response means) provides strong support for the stability and robustness of the final four profiles.

Summary and Discussion: Study 1

The purpose of Study 1 was to examine the psychometric properties of work passion as a multidimensional construct and to distinguish it from other, related constructs in the literature. Thus, the first step was to examine how the manifestations of work passion (positive emotions about work and self-concept overlap with work) related to an existing measure of passion (harmonious and obsessive passion). Results from the EFA revealed that positive emotions about work and self-concept overlap with work represent two distinct yet positively correlated factors. In addition, although obsessive passion appears to be a distinct measure in itself, the harmonious passion measure had a number of deficiencies including low factor loadings, multiple cross-loadings, a double-barreled item, and construct contamination with self-expansion. Thus, harmonious passion was dropped from future analyses.

Next, work passion was modeled as a profile multidimensional construct using latent profile analysis. Results from the LPA indicated that there were identifiable profiles of individuals based on their positive emotions about work and self-concept overlap with the work. Specifically, four distinct latent profiles emerged that were qualitatively and quantitatively different from one another, and the profiles related to two covariates (financial motivation and obsessive passion) in ways that were theoretically meaningful. Notably, the “passionate” group (i.e., individuals with strong positive emotions and high self-concept overlap) were less likely to be financially motivated to perform their work but more likely to be obsessively passionate compared to the other three groups.

Taken together, the results from the EFA and LPA provide initial evidence for the utility of work passion as a multidimensional construct. However, these results must be considered in light of some limitations. First, instructing students to reflect on prior work experience might not adequately capture the work passion construct for a number of reasons (Bono & McNamara, 2011). Students might not have the same opportunity as full-time employees to pursue work that they feel truly passionate about. This might be due to time constraints (e.g., can only work part-time or in the summer months), education requirements (e.g., the job requires a college degree), or a lack of experience and time spent exploring different career paths. However, one of the defining characteristics of passion is that it can develop before one even steps foot in the workplace through previous related or vicarious experiences. Through this lens, studying students who have had exposure to a future career but have not yet begun a full-time position provides a unique look at the early manifestations of work passion, not otherwise afforded by employed samples.

Second, if students have had work experience in the past that they feel passionate about, it might be difficult for students to think back on that experience and accurately describe their emotions and experiences during that time (Rholes, Riskind, & Lane, 1987). For example, students who were passionate about the work they did over the summer might have inflated their responses when taking the survey 8 months later, recalling only the positive aspects of their job and forgetting the smaller annoyances they experienced. Similarly, asking students to provide a retrospective account of their work passion and experiences may result in a consistency effect in which respondents try to respond to similar questions in a consistent manner (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Thus, although retrospective designs have been used in previous passion research (e.g., Vallerand & Houliort, 2003), positive emotions and self-concept overlap should ideally be measured while the individual is still presently on the job in order to better capture current levels of work passion.

The tendency for people to respond in a consistent manner is related to a third limitation, common method variance. Common method variance (CMV) is always a concern with self-reported survey methods, and thus it is possible that CMV influenced the relationships among the focal constructs. To minimize this concern, response scales were varied to minimize consistency biases (e.g., 5-pt scale for positive emotions, 7-pt scale for self-concept overlap), and an EFA was conducted to ensure that the constructs were distinguishable (Podsakoff et al., 2003).

Finally, although the LPA revealed distinct profiles of individuals, it is unknown whether these same profiles would emerge for full-time employees (given the differences noted above), or whether a latent multidimensional construct better captures the work passion construct. Thus, Study 2 was conducted to address these limitations and explore alternative methods for measuring work passion.

Chapter 3

STUDY 2

Focusing on later stage passion (i.e., passion among employees who have been on the job for an extended period of time), the purpose of Study 2 was twofold: (1) to replicate the viability of measuring work passion as a multidimensional construct using an employed sample, considering both a profile and latent multidimensional approach, and (2) to examine the relationship between work passion, self-expansion opportunities, and the work engagement behaviors. Thus, Study 2 addresses the limitations of Study 1, and provides an initial test of some of the paper's key hypotheses. Specifically, Study 2 tests the second half of the proposed theoretical model, focusing on the moderating role of self-expansion opportunities on the link between work passion and work engagement (Hypotheses 4-5). Then, by dividing the sample according to newcomer status, Study 2 provides a preliminary test of the relationship between passion and engagement early in one's career (Hypotheses 1-3).

Method

Participants and Procedures

An online survey was sent to approximately 785 employees from a small liberal arts college in the Midwest. The teaching profession is often associated with passion, and research on engagement, passion, and callings often include teachers in their samples for this very reason (e.g., Berg et al., 2010; Carbonneau, Vallerand, Fernet, & Guay, 2008). Thus, college faculty and staff were considered an appropriate sample for the initial test of the second half of the work passion model. A total of 161 employees completed the survey for a response rate of 21%.

Although the response rate was relatively low, respondents came from a range of areas within the college (including administrative departments, faculty positions, and staff positions) suggesting that respondents were representative of the larger college population.

Survey respondents had two and a half weeks to complete the survey, and received a reminder email one week prior to the close of the survey. The final sample was comprised of 161 employees (69 male, 92 female), with ages ranging from 22 to 69 ($M = 45.57$, $SD = 12.17$). The majority of respondents were married or cohabiting (144; 89.4%), 13 (8.1%) were single, 3 (1.9%) were separated or divorced, and 1 (0.6%) was widowed. In terms of race/ethnicity, 95.7% were Caucasian, 3.7% were Asian or Asian-American, and 1% was other/unidentified. The majority (85.5%) of respondents had obtained at least a bachelor's degree, and 31.1% had received some type of graduate or professional degree.

Measures

Study 2 used many of the same measures that were included in Study 1. When this was the case, all instructions and items were changed to the present tense (e.g., "Thinking about your work...") in contrast to the past tense used in Study 1 (e.g., "Thinking about your prior work experience...").

Positive emotions about work. Positive emotions about work was measured using the same scale as described in Study 1; $\alpha = .88$.

Self-concept overlap with the work. Self-concept overlap with the work was measured using the same scale as described in Study 1; $\alpha = .85$.

Proactive behavior. Theoretically, proactive behavior includes a number of concepts, ranging from personality traits (e.g., proactive personality) to behavioral tendencies (e.g., personal initiative) (Crant, 2000). Because the current study is interested in how passion

facilitates specific behaviors in the workplace (vs. the prevalence of a specific personality trait), proactive behavior was measured using the 7-item Personal Initiative scale (Frese, Fay, Hilburger, Leng, & Tag, 1997). Participants were asked to indicate the extent to which they agreed with each item, with response options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is: “*I actively attack problems;*” $\alpha = .87$.

Work hours. The first two items from Major et al.’s (2002) measure of work time were used to measure work hours. These items are: (1) *How many hours do you work in an average week? Include time spent doing job-related work at home,* and (2) *On your last regular work day at this job, how many hours did you work? Include time spent doing job-related work at home.* The first question describes an individual’s typical workweek, whereas the second question describes a specific day. Because there are only two items, and they are not expected to be significantly inter-correlated (Major et al., 2002), alpha was not calculated for this scale. The two items were combined by taking the mean of (1) the first item and (2) the second item multiplied by 5, as recommended by Major et al. (2002).

Positive rumination. Positive rumination was measured using the 5-item problem-solving pondering subscale of the Work-Related Rumination Scale (Cropley et al., 2012). Participants were asked to indicate how frequently they engaged in each behavior, with response options ranging from 1 (*very seldom or never*) to 5 (*very often or always*). An example item is: “*After work I tend to think about how I can improve my performance;*” $\alpha = .88$.

Self-expansion opportunities. Self-expansion opportunities at work were measured using The Self-Expansion Questionnaire (SEQ; Lewandowski & Aron, 2002). Items were adapted by substituting the reference “your work” for “your partner.” Participants were asked to

respond to each item on a 7-point scale, ranging from 1 (*not very much*) to 7 (*very much*). An example item is: “*How much does your work result in your having new experiences?*” $\alpha = .93$.

Calling. Because calling and work passion both involve an innate desire to perform the work and a sense that the work is personally meaningful, it was important to test whether work passion predicted work engagement above and beyond calling. Calling was measured using the 4-item Presence-Transcendent Summons subscale of the Calling and Vocation Questionnaire (CVQ; Dik, Eldridge, Steger, & Duffy, 2012). Participants were asked to indicate the degree to which each item described them, with response options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is: “*I believe that I have been called to my current line of work;*” $\alpha = .82$.

Control variables. Gender and newcomer status were included as control variables within the current study. Recent research has shown that women are offered fewer challenging developmental experiences at work (King et al., 2012), indicating that they may have fewer, or less impactful, opportunities for self-expansion. In addition, men may be more likely to work longer hours compared to women (Greenhaus, Peng, & Allen, 2012). Thus, *gender* was included as a control variable to account for such differences (1 = male, 2 = female).

Given that job newcomers are more likely to be in the honeymoon stage of their career (Boswell et al., 2009), *newcomer status* was included in order to compare whether newcomers differed from the rest of the sample on work passion and work engagement. In addition, the current model proposes that newcomers – who are experiencing self-expansion naturally – should also show stronger relationships between passion and engagement behaviors. Thus, newcomer status was measured by asking participants “*How many years have you been employed in your current position? (please round to the nearest whole number)*” ($M = 9.57$, SD

= 8.65); responses were then dichotomized accordingly: employees who had been on the job for 1 year or less ($n = 28$) were coded 1, and employees who had been on the job for more than 1 year ($n = 133$) were coded 0. Although the current paper and past research has defined the honeymoon period as the first 6 months on the job (Boswell et al., 2009), a longer timeframe was used in order to have a large enough sample of newcomers to examine within the current study. This longer timeframe is also supported by the socialization literature, which has defined organizational newcomers as individuals who have been in a new job at a new company for 13 months or less (Bauer, Bodner, Erdogan, Truxillo, & Tucker, 2007).

Data Analytic Approach

All analyses were conducted using Mplus 7.0 (Muthén & Muthén, 1998-2012). Because Mplus does not allow for missing data on the covariates, these values were imputed using the Missing Values module in SPSS. Specifically, maximum-likelihood (ML) estimates were imputed using the expectation-maximization (EM) algorithm (Little & Rubin, 2002), and were conditional on all predictors and outcomes used in the study. The low levels of missing data indicated that multiple imputation was not necessary: 0%-1.9% ($M = 0.48$, $SD = 0.61$) of participants had missing values on the predictors, and 0%-1.2% ($M = 0.46$, $SD = 0.44$) had missing values on the outcomes.

Latent profile analysis. First, a latent profile analysis was conducted to examine whether the results from the LPA in Study 1 could be replicated. As in Study 1, the final class solution was determined based on goodness of fit statistics (i.e., AIC, BIC, ABIC, Entropy, LMR, and BLRT), interpretability of the classes, and how well the model fit with theory. Whereas Study 1 used financial motivation and obsessive passion as covariates, Study 2 included self-expansion as a covariate in order to determine the best final class solution. Note that although the two

studies used different covariates, this should not substantially affect the ability to replicate profiles across samples; this is because covariates provide additional information about the latent classes without changing the nature of the profiles (Morin et al., 2011). Self-expansion opportunities were considered an appropriate covariate because at any given point in time, such opportunities are likely to be strongly and positively related to work passion. That is, although self-expansion opportunities are expected to moderate passion and engagement relationships *over time*, passionate individuals may be more likely to perceive greater self-expansion when both their “fire” (passion) and its “fuel” (self-expansion) are assessed at the same moment in time. Thus, it was appropriate to consider self-expansion opportunities as a covariate in order to validate the latent classes.⁴

One final distinction between Study 1 and Study 2 is that Study 2 examined the relationship between work passion with three outcomes: proactive behavior, work hours, and positive rumination. To differentiate the outcomes from the work passion indicators and the covariate, Mplus’s AUXILIARY (*e*) function was used. This option treats variables as distal outcomes by not including them directly into the model, and using a Wald chi-square test of statistical significance to compare outcome means across each latent profile (Asparouhov & Muthén, 2007).

Higher-order confirmatory factor analysis. Next, a higher-order confirmatory factor analysis (CFA) with maximum-likelihood estimation procedures was conducted to verify the distinctness of each construct within the model, as well as to examine whether positive emotions and self-concept overlap combine to form a higher order construct (i.e., work passion).

⁴ Originally, gender and newcomer status were also included as covariates, in order to examine whether the profiles differed according to these two antecedent variables. However, including gender and newcomer status in the analyses resulted in an unidentified model, and estimates for the covariates could not be computed. Thus, analyses were run without gender and newcomer status; future research should examine how these predictors relate to the latent profiles using a larger sample size.

Compared to the LPA in which people are placed into discrete, categorical classes based on their positive emotions about work and self-concept overlap with work, a higher-order CFA assumes that the two dimensions are strongly and positively correlated, and therefore may represent a general, higher-order construct. Examples of common general factors (i.e., higher-order constructs) within the I/O literature include overall job attitude (Harrison, Newman, & Roth, 2006; Webster, Adams, & Beehr, 2014), core confidence (Stajkovic, 2006), individual effectiveness (Harrison et al., 2006), and core self-evaluations (Judge, Erez, Bono, & Thoresen, 2003).

Within the current study, the two-step approach (Anderson & Gerbing, 1988) was adopted to examine both the measurement model and the structural model of work passion. First, a CFA with the six focal constructs (i.e., positive emotions, self-concept overlap, proactive behavior, work hours, positive rumination, and self-expansion opportunities) was run to confirm that the data fit the expected factor structure. This six-factor model was then compared to 3 alternative models. The first model was a one-factor model in which all seven constructs loaded onto a single factor; this model was included to test whether the constructs represented a single, overall work-related motivation factor. The second model was a four-factor model in which the three engagement outcomes (proactive behavior, work hours, and positive rumination) were combined to form one factor; this model was included to test the possibility that the three constructs tapped a more general, work engagement factor. The third model was a five-factor model in which the work passion indicators (positive emotions and self-concept overlap) were combined to form one factor; this model was tested to examine whether combining the two scales was a sufficient method for measuring work passion.

As a final step in model selection, the structural model was examined in order to determine whether a higher-order work passion model was superior to a first-order model. The measurement models and this final structural model were assessed using the following fit indices: Chi-square, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Competing models were compared on the basis of the Chi-square difference tests: significant tests indicate that the model with more factors is a better fit to the data, while non-significant tests indicate that the nested model (i.e., the model with fewer factors and more degrees of freedom) is not a significantly worse fit to the data. Under these circumstances, the parsimony principle dictates that the nested model is superior to the model with more factors.

Results

The descriptive statistics (means and SDs, correlations, and internal consistency coefficients) of the study variables are reported in **Table 8**. Gender was negatively related to the three engagement outcomes, indicating that women reported working fewer hours, and engaging in less proactive behavior and positive rumination ($-.34 \leq r_s \leq -.16, p < .05$). Job newcomers had higher positive emotions about their work ($M = 3.39, SD = 0.52$) compared to those who had been on the job for 1 or more years ($M = 3.10, SD = 0.68, p < .05$), providing initial evidence for the honeymoon effect within this sample. As expected, positive emotions about work and self-concept overlap with work were moderately and positively correlated with each other ($r = .23, p < .01$), as well as to each of the work engagement outcomes ($.19 \leq r_s \leq .67, p < .05$).

Latent Profile Analysis Results

An LPA was conducted in an effort to replicate the profiles that emerged in Study 1. Because newcomers reported higher positive emotions (but were not different on self-concept

overlap), it was possible that these newcomers may have different latent profiles compared to the rest of the sample. To examine this possibility, analyses were run with and without newcomers included. Results did not substantially change depending on whether or not newcomers were included in the sample; thus, results are presented for the full sample ($n = 161$).

First, a series of LPAs were conducted including just the two predictors: positive emotions and self-concept overlap. The fit indices of the LPA models are reported in **Table 9**, and largely supported the 2-class solution as the best fitting model. Specifically, the BIC, Entropy, LMR, and BLRT favored the 2-class solution, and although the AIC and ABIC continued to decrease, the differences among values were minimal. The 2-class solution had average posterior probabilities of class membership in the dominant profile ranging from 0.52 to 1.00, and had relatively low cross-probabilities ranging from 0 to 0.48.

Next, a series of LPAs were conducted including the two predictors as well as self-expansion opportunities as a covariate. The fit indices are reported at the bottom of **Table 9** and also supported the 2-class solution. The LMR was significant for the 2-class solution but not the 3-class solution, and although the BLRT remained significant across all solutions, the model could not be identified for 3+ class solutions. Finally, the 2-class solution with self-expansion as a covariate yielded high posterior probabilities of class membership (ranging from 0.94 to 0.95) with low cross-probabilities (ranging from 0.05 to 0.06).

The overall sample means and conditional response means for each class are presented in **Table 10** and the level of positive emotions and self-concept overlap in the two latent profiles are illustrated in **Figure 4**. The first latent profile consisted of individuals who reported sometimes feeling positive emotions about their work and who somewhat agreed that their self-concept overlapped with their work. Because this profile looked very similar to the second

profile in Study 1, it was also labeled “invested.” This profile described 36.65% of the sample ($n = 59$). The second latent profile consisted of individuals who, like the “invested” profile, sometimes felt positive emotions about their work but who more definitively agreed that their self-concept overlapped with their work. Notably, this profile appears to fall somewhere in-between the “invested” and “passionate” profiles in Study 1 (i.e., positive emotions are slightly lower compared to the “passionate” profile, but self-concept overlap is higher compared to the “invested” profile). Thus, this profile was labeled “devoted” and described 63.35% of the sample ($n = 102$).

The relationships between the covariate (self-expansion opportunities) and the latent profiles are reported in **Table 11** (taking the “devoted” profile as the referent) and illustrated in **Figure 5**. The results show that self-expansion opportunities contribute to the prediction of latent group membership. Specifically, self-expansion opportunities are associated with a greater probability of belonging to the “devoted” group (i.e., the reference group).

Curiously, the LPA results indicate that none of the groups ought to be considered passionate about their work; that is, no profile consisted of individuals who often felt positive emotions about their work *and* felt that their self-concept overlapped with their work. Possible explanations for this finding are discussed in more detail in the discussion section. However, if we take into account the threshold for a “passionate” individual from Study 1 (that is, individuals who frequently felt positive emotions about their work ($M \geq 4$) and had strong self-concept overlap with their work ($M \geq 6$)), we see a small percentage of individuals from Study 2 do in fact fit the “passionate” classification ($n = 11$; 6.8% of the sample). This suggests that passionate individuals did exist within the current sample, given the threshold identified in Study 1. Moreover, these 11 individuals tended to report more self-expansion opportunities ($M = 4.07$, SD

= 0.39) compared to the 150 remaining individuals ($M = 3.37$, $SD = 0.72$; $p = .05$), and 5 of the 11 passionate individuals (45.5%) reported tenure of 2 years or less. These findings are consistent with self-expansion theory and the idea that job newcomers may be more likely to report stronger passion as well as more self-expansion opportunities.

Although none of the four profiles that emerged from the LPA were considered “passionate,” it is still useful to compare the “devoted” group to the “invested” group on engagement behaviors. Specifically, because the “devoted” group more closely resembles the “passionate” group from Study 1, it is expected that this group will report greater proactive behavior, work hours, and positive rumination compared to the “invested” group.

The relationships between the two latent profiles and the outcomes (proactive behavior, work hours, and positive rumination) are reported in **Table 12** and illustrated in **Figure 6**. Results indicated that the “devoted” group reported exhibiting more proactive behavior, working more hours, and engaging in more positive rumination compared to the “invested” group. Because the “devoted” group was composed of individuals with stronger positive emotions about work and a stronger self-concept overlap with the work than the “invested” group, this provides initial evidence that passionate individuals – who would theoretically be even higher on positive emotions and self-concept overlap than the “devoted” group – would report the highest engagement overall. However, this comparison can only be speculated at, as the sample did not include a “passionate” profile.

Taken together, the fact that the “devoted” profile reported greater self-expansion opportunities and greater work engagement provides initial support for the argument that self-expansion opportunities strengthen the positive relationship between work passion and work engagement among employees who have been on the job for an extended period of time.

However, this interpretation must be made with caution, as all measures were collected at a single point in time and the moderation effect was not tested within the LPA.

Confirmatory Factor Analysis Results

Next, a CFA was conducted to examine the viability of measuring work passion as a latent multidimensional construct. Because the variables contained more items than is recommended for the sample size (i.e., a ratio of 1:5; Bentler & Chou, 1987), item parcels were used as indicators. Specifically, the single-factor method (Landis, Beal, & Tesluk, 2000) was used to create empirically balanced parcels, which involves running an exploratory factor analysis for each latent construct and then assigning the highest loading item to the first parcel, the second highest loading item to the second parcel, and so on. **Table 13** shows the fit indices for the measurement model and three alternative models. One of the positive rumination items was dropped (“*I find thinking about work during my free time helps me be creative*”) due to its low factor loading (0.59), which resulted in a misspecified model.⁵

Results of the CFA indicated that the six-factor model (i.e., positive emotions, self-concept overlap, proactive behavior, work hours, positive rumination, and self-expansion opportunities) fit the data well, $\chi^2(n = 161, df = 63) = 82.85$, CFI = 0.99, TLI = 0.98, RMSEA = 0.04, based on accepted values for model fit indices (McDonald & Ho, 2002). Factor loadings ranged from 0.77 to 0.93. Alternative, more parsimonious models were also tested, including a one-factor (combining all indicators), four-factor (combining the engagement behaviors; i.e., proactive behavior, work hours, and positive rumination), and five-factor (combining work passion indicators; i.e., positive emotions and self-concept overlap) model. Results from the Chi-

⁵ Dropping this item also slightly improved the scale’s reliability, from 0.878 to 0.894. Although this is a minimal increase, dropping any of the other items decreased reliability by 0.02 to 0.05, suggesting the removed item functioned differently from the other items. One potential reason is that the item is more about using free time to be creative, whereas the other items are more about reflecting on work-related problems, tasks, or performance.

square difference tests indicated that all three alternative models were a significantly worse fit to the data compared to the six-factor model.

To test the structural model, the positive emotions factor and self-concept overlap factor were loaded onto a seventh, higher-order factor representing work passion (see bottom of **Table 13**). Results indicated that the higher-order model was not statistically different from the model with six first-order factors $\chi^2(3, n = 161) = 86.09, p > .05$. Because the higher-order model has more degrees of freedom and is therefore the more parsimonious model, it was selected as the best fitting model compared to the first-order models.

Hypothesis Testing

To test the second half of the proposed model (i.e., the moderating effect of self-expansion opportunities on the passion–engagement relationship), path analysis was used. Hypothesis 4 stated that self-expansion opportunities moderate the relationship between engagement behaviors and work passion, and Hypothesis 5 stated that self-expansion opportunities moderate the relationship between work passion and engagement behaviors (i.e., the reciprocal effect). Hypotheses 4 and 5 were each tested using a two-step approach in which direct effects were tested first, followed by the interaction effects.

Starting with Hypothesis 4, a model was run in which proactive behavior, work hours, and positive rumination were the predictors and work passion was the outcome (see **Table 14**). Controlling for gender and newcomer status, proactive behavior ($B = 0.19, SE = 0.06, p < .01$) and work hours ($B = 0.02, SE = 0.01, p < .05$) were positively related to work passion, but positive rumination was not ($B = 0.05, SE = 0.04, p > .10$). Gender and newcomer status were also not significantly related to work passion ($ps > .10$). Next, a second model was run which added self-expansion opportunities as a predictor, as well as the interaction terms of self-

expansion with each engagement behavior. Controlling for gender and newcomer status, results indicated that only self-expansion opportunities predicted work passion ($B = 0.55$, $SE = 0.28$, $p = .05$). Although results failed to support Hypothesis 4, the link between self-expansion opportunities and work passion is consistent with the argument that self-expansion opportunities are crucial in “fueling” an employee’s passion.

To test Hypothesis 5 (i.e., the inverse relationship of passion and engagement, moderated by self-expansion opportunities), a model was run in which work passion was the predictor, and proactive behavior, work hours, and positive rumination were the outcomes (see bottom of **Table 14**). Controlling for gender and newcomer status, results were similar to those for Hypothesis 4 and indicated that work passion was positively related to proactive behavior ($B = 1.28$, $SE = 0.50$, $p < .05$) and work hours ($B = 8.30$, $SE = 3.96$, $p < .01$), but not to positive rumination ($B = 1.05$, $SE = 0.60$, $p > .10$). Gender was negatively related to work hours ($B = -4.54$, $SE = 1.07$, $p < .01$), indicating that men reported working longer hours compared to women. Gender was not related to proactive behavior and positive rumination, and newcomer status was also not significantly related to any of the engagement behaviors (all $ps > .10$).

Building on the direct effects model, a model was tested in which work passion was the predictor, self-expansion was the moderator, and the three work engagement behaviors were the outcomes. Results indicated that when self-expansion was added to the model, work passion was no longer directly related to proactive behavior ($B = -0.80$, $SE = 1.04$, $p > .10$) or work hours ($B = 7.54$, $SE = 10.71$, $p > .10$). In contrast, self-expansion opportunities were directly and positively related to proactive behavior ($B = 0.28$, $SE = 0.13$, $p < .05$) and positive rumination ($B = 0.54$, $SE = 0.19$, $p < .01$), and approaching significance for work hours ($B = 1.74$, $SE = 1.03$, $p = .09$). Finally, the interaction between work passion and self-expansion opportunities was not

significantly related to proactive behavior ($B = 0.31, SE = 0.33, p > .10$), work hours ($B = -2.08, SE = 2.80, p > .10$) or positive rumination ($B = 0.16, SE = 0.62, p > .10$). Thus, results failed to support Hypothesis 5, as none of the interaction terms were significant. However, self-expansion opportunities directly predicted work engagement behaviors, indicating that such opportunities are crucial for both work passion (i.e., Hypothesis 4) as well as work engagement (i.e., Hypothesis 5), consistent with the self-expansion theory.

As a final step, it was important to test whether work passion predicted work engagement behaviors beyond calling, which has been identified as a closely related measure of motivation and attachment to the work. Although Mplus could not specify the model in which calling was included along with work passion and the engagement behaviors (likely as a result of too many highly correlated constructs and a relatively small sample size), it was possible to save the work passion factor score for each individual using Mplus's `SAVEDATA` command and input them into an SPSS file along with the remaining variables.

Prior to running regression analyses, the correlations among work passion, calling, work engagement behaviors (proactive behavior, work hours, positive rumination) and control variables (gender, newcomer status) were examined. Passion and calling were strongly and positively correlated ($r = .46, p < .01$), and neither were significantly correlated with either gender or newcomer status. In addition, passion was strongly and positively related to all three of the work engagement behaviors ($.50 \leq rs \leq .69, p < .01$), whereas calling was relatively weakly – yet positively – related to proactive behavior ($r = .19, p < .05$) and work hours ($r = .24, p < .01$) but not to positive rumination ($r = .10, p > .10$).

Next, regression analyses were run to test whether passion predicted work engagement behaviors beyond calling. For each outcome, gender and newcomer status were entered in the

first step, calling was entered in the second step, and passion was entered in the third step. Similar to the correlation analyses, results indicated that calling predicted proactive behavior ($\beta = .16, p < .05$) and work hours ($\beta = .22, p < .01$), but not positive rumination ($\beta = .10, p > .10$), after controlling for gender and newcomer status. When passion was entered in the third step, passion significantly predicted proactive behavior ($\beta = .78, p < .01$), work hours ($\beta = .51, p < .01$), and positive rumination ($\beta = .56, p < .01$), above and beyond the control variables and calling. Furthermore, calling was no longer a significant predictor of work hours after passion was entered into the model. Taken together, these results indicate that although work passion and calling are closely related constructs, they are in fact distinct from one another and passion predicts work engagement beyond the influence of calling.

Post Hoc Analyses

Because the current study includes a measure of newcomer status (i.e., those on the job for 1 year or less), it was possible to conduct a preliminary test of the first half of the study model. The first half of the model predicts that the link between passion and engagement behaviors will be stronger for newcomers since they naturally experience greater self-expansion (Hypotheses 1-3). To examine whether this was true for the current sample of newcomers, a model was tested in which newcomer status moderated the relationship of work passion with each engagement behavior. Controlling for gender, results indicated that neither the direct effects nor the moderating effects of newcomer status on engagement behaviors were significant (all $ps > .10$), failing to provide preliminary support for Hypotheses 1-3. However, it is important to keep in mind that the current sample of newcomers may have been too small to detect meaningful differences ($n = 28$). In addition, the timeframe for newcomer status was longer than the current study's proposed honeymoon period (less than 1 year vs. less than 6 months,

respectively), indicating that the initial novelty and excitement of the job may have already begun to fade for this sample of newcomers.

Overall, results demonstrate that work passion tends to have a positive relationship with engagement behaviors; however, when self-expansion opportunities are taken into account, these opportunities emerge as the sole predictor of both passion and engagement behaviors. Thus, self-expansion opportunities appear to be crucial for understanding employees' work passion as well as their level of engagement.

Summary and Discussion: Study 2

The purpose of Study 2 was to further examine work passion as a multidimensional construct, and to provide an initial test of the relationship between work passion, self-expansion opportunities, and the engagement outcomes. Results from the LPA failed to replicate those of Study 1, as only two profiles emerged in the analyses. In addition, neither of the profiles met the criteria for passion (i.e., strong positive emotions and high self-concept overlap). However, the “devoted” group more closely resembled the “passionate” group from Study 1 and – compared to the “invested” group – reported more self-expansion opportunities, and were more likely to engage in more proactive behaviors, work more hours, and engage in more positive rumination.

There are a few reasons as to why a “passionate” group did not emerge in the current sample. First, it may be that employees who have been on the job for several years report lower passion overall, as the excitement and novelty of the honeymoon period has long faded. This is akin to romantic passion in relationships: when romantic passion is broken down into obsessive and romantic components, the obsessive component tends to decrease over time while the romantic component of passion remains stable if self-expansion opportunities are high (Sheets,

2014). Thus, employees may be able to remain passionate about their work over time, but the level of passion will be less intense in the post-honeymoon period.

Second, the survey was distributed to faculty and staff during their finals week. It is possible that respondents were feeling overwhelmed and burdened by their work at the time of the survey, and therefore reported lower positive emotion toward their work. Third, a miscommunication in the survey invitation and instructions might have influenced the responses. Survey invitees were asked to complete the survey “if they were passionate about their work,” which may have isolated those who did not feel positively about their work and discouraged them from completing the survey. This would also explain why neither of the profiles looked similar to the “disgruntled” or “apathetic” profiles from Study 1. Taking these two explanations into account elucidates why the sample reported relatively strong positive emotions and high self-concept overlap with the work in general, but did not contain a group with the same levels of intensity as the “passionate” profile in Study 1.

Results from the CFA revealed that work passion might also function as a latent multidimensional construct. Specifically, when positive emotions about work and self-concept overlap with the work combine to form a higher-order work passion construct, work passion is positively related to proactive behavior and work hours. However, when self-expansion opportunities are included in the model, it is these opportunities that predict engagement behaviors, regardless of one’s work passion. When considering the inverse relationship (i.e., engagement behaviors predicting work passion), only self-expansion opportunities predicted work passion. Thus, when all constructs are examined at a single point in time, self-expansion opportunities appear to be the best predictor of both work passion and work engagement.

Overall, the results from the LPA and CFA provide support for work passion as a multidimensional construct, although it is not clear whether this construct is best modeled as a profile or latent multidimensional construct. Regardless of the specific nature of the construct, it is clear that self-expansion opportunities play a critical role in one's work experience. Specifically, the LPA revealed that self-expansion opportunities at work are closely linked to positive emotions about work and self-concept overlap with work, and the CFA revealed that self-expansion opportunities predict important work-related engagement behaviors as well as work passion levels.

Study 2 improved upon Study 1 by drawing on an employed sample and asking participants about their current levels of work passion (compared to asking for a retrospective account); however, Study 2 also has limitations that must be considered when interpreting the results. First, the miscommunication in survey instructions and timing of the survey raise concerns about the validity and generalizability of the findings. It is possible that the survey respondents (relatively passionate employees) and the context (finals week) were too restrictive to provide insight into employees' work experiences in general.

Second, we cannot infer causality from the present data, as all study variables were assessed within the same survey at the same point in time. Thus, the temporal ordering of effects cannot be verified. For example, it could be argued that employees who engage in more proactive behaviors and spend more time thinking about work-related issues outside of work are then better positioned for self-expansion opportunities, such that being more proactive in and outside of work provides more opportunities to grow and develop professionally. In fact, researchers have identified a reciprocal relationship between proactive personality and job demands, noting that these job demands may actually be necessary for employee development

(Li, Fay, Frese, Harms, & Gao, 2014). Thus, a cross-lagged or longitudinal design is needed in order to tease apart the directionality of work passion and engagement behaviors.

Third, CMV remains a concern with Study 2, and may be especially problematic given the measurement of work passion as a latent multidimensional construct. In an examination of the impact of CMV on core self-evaluation (CSE) data, Johnson and colleagues (2011) found that applying statistical and procedural CMV remedies altered CSE's relationship with job satisfaction, and warned that researchers who do not apply these remedies may spend "valuable time and effort propagating research on constructs that have questionable internal and external validity" (p. 758).⁶ This suggests that the validity of combining positive emotions and self-concept overlap into a higher order construct may have been compromised in the current study. Given the present difficulties with modeling work passion as a multidimensional construct (namely, a lack of replication in latent profiles across Study 1 and Study 2 and the concern of common method variance for the higher-order factor), it may be necessary to develop a more traditional Likert scale for the work passion construct.

In order to address the above limitations, Study 3 includes two time points and utilizes a cross-lagged design to examine the relationship among variables over time. In addition, Study 3 further assesses the role of passion over time by focusing on a sample of employees who are newcomers on the job at Time 1, and post-honeymoon period at Time 2 (3 months later).

⁶ Statistical remedies proposed by Johnson and colleagues include partialling out the effects of a theoretically unrelated marker variable, controlling for a measured latent method factor (e.g., social desirability), and controlling for an unmeasured latent methods factor. These remedies were not applied in the current study because the recommended controls (e.g., unrelated marker variable, social desirability) were not measured in the survey, and because the sample size was not large enough to meaningfully interpret the effect of an unmeasured latent methods factor (Johnson et al., 2011).

Chapter 4

STUDY 3

The purpose of Study 3 was to conduct an initial test of the relationships among study variables over time, focusing on job newcomers and the first half of the proposed theoretical model. Specifically, Study 3 examined the relationship between newcomer passion and newcomer positive rumination (Hypothesis 3), as well as the moderating role of self-expansion opportunities on the relationship between newcomer positive rumination and long-term passion (Hypothesis 4).

Additionally, one of the goals of the current study was to replicate the viability of work passion as a latent multidimensional construct. However, concerns of CMV noted in Study 2 combined with a misspecified model in the current study (described in more detail later) indicated that a higher order CFA was not an appropriate analysis for the data. As a result, Study 3 describes the process by which higher order CFA was eliminated from consideration, and a new measurement approach was selected as an alternative. Specifically, Study 3 introduces a Likert scale for work passion that captures both the positive emotions component as well as the self-concept overlap component within one 6-item scale.

Method

Participants and Procedures

The current study involved completing two online surveys spaced three months apart (the first in late April 2015, the second in late July 2015). Both surveys were administered to

participants using Amazon's Mechanical Turk (MTurk) survey website. MTurk is an online labor market in which individuals ("Requesters") post tasks for other individuals ("Workers") to complete for pay. Instructions for the first survey stated that the current task was Part 1 of a two-part academic study, and that participants had the opportunity to earn up to \$1.25 for their participation (\$0.50 for completing the first survey, and \$0.75 for completing the second survey). Eligibility requirements for the first survey included (1) an approval rate of 95% or greater (indicating that at least 95% of their previous MTurk submissions had been approved by other Workers), (2) newcomer status on the job (defined as being in their current job position for 6 months or less), and (3) passing two attention check items placed throughout the survey (e.g., "*Respond with 'Strongly Agree' to this item*"). The first eligibility requirement automatically limited the accessibility of the survey to only those who met the minimum approval rate; the remaining two eligibility requirements were stated in both the survey instructions as well as the informed consent page that appeared prior to the first survey item. Participants were informed that those who did not meet one or both of the eligibility requirements would have their survey "rejected" and would not receive payment for the MTurk assignment.

Overall, 470 surveys were submitted by MTurk workers at the close of the first wave. Of these 470, 118 were rejected for tenure (i.e., they had been on the job for 7 or more months), 33 more were rejected for failing the attention check items, and 14 were removed for being duplicate submissions. Although 118 was a sizable portion of the sample to remove for tenure (25%), it was imperative to do so given the current study's focus on job newcomers. Research has shown that job satisfaction can drop after just 6 months at a new job (Boswell et al., 2009); likewise, it was expected that passion would be lower (and the associated relationships weaker) for those who had been on the job for 7 or more months.

After removing the individuals noted above, the final sample for Time 1 consisted of 305 participants (167 male, 138 female), with ages ranging from 18 to 77 ($M = 29.5$, $SD = 8.7$). A little over half of the respondents were single (167; 54.8%), 124 (40.7%) were married or cohabiting, and 14 (4.6%) were separated or divorced. In terms of race/ethnicity, 73.5% were Caucasian, 10.5% were Asian or Asian-American, 9.5% were Black/African-American, 4.9% were Hispanic/Latino/Latina, and 1.6% was other/unidentified. The majority of respondents had obtained at least a bachelor's degree (92.8%), and 7.2% had received some type of graduate or professional degree.

Three months after the first survey was administered, a link to the second survey was sent to the 305 MTurk workers whose first survey had been approved. This required sending an individual email to each worker, explaining that Part 2 of the study was now available and providing the link to the Qualtrics survey. No further eligibility requirements were specified. Participants had two and a half weeks to complete the survey, and received a reminder email one week prior to the close of the survey.

Of the 305 participants from Time 1, 165 individuals completed the second survey for a response rate of 54%. To determine whether those who responded to the second survey differed from those who only responded to the first survey, the two groups' mean levels on all focal study variables and demographics were compared. *T* tests did not support any significant differences on positive emotions about work, self-concept overlap with work, positive rumination, or self-expansion opportunities (all $ps > .10$) for the focal sample of 165 employees who completed both Time 1 and Time 2 surveys and the employees who only completed Time 1. There were also no differences on the demographic variables including gender, race, or marital status (all $ps > .10$). The only differences were that the final sample was slightly older ($M = 30.75$, $SD = 9.25$)

compared to those who only completed Time 1 ($M = 28.18$, $SD = 7.92$, $p < .05$), and had been employed for an average of 4.31 months ($SD = 1.66$) compared to an average of 3.89 months ($SD = 1.80$, $p < .05$).

Measures

At Time 1, participants responded to items about their work passion, positive rumination, and job involvement. Three months later (Time 2), participants responded to the same work passion and positive rumination items, as well as items about their self-expansion opportunities.

Positive emotions about work. Positive emotions about work was measured using the same scale from Study 1 and Study 2 (T1 $\alpha = .89$; T2 $\alpha = .91$).

Self-concept overlap with the work. Self-concept overlap with the work was measured using the same scale from Study 1 and Study 2 (T1 $\alpha = .87$; T2 $\alpha = .89$).

New work passion scale. A new 6-item work passion scale was created in order to test the study's hypotheses. Study 1 and Study 2 provided evidence that positive emotions about work and self-concept overlap with the work are positively related and together represent work passion; Study 3 builds on this information and creates a more usable measure of work passion. Specifically, items for the new scale were selected based on their representativeness of the work passion definition in addition to the internal consistency of the items. Thus, the new scale was both theoretically and empirically valid for measuring work passion. To ensure the scale equally captured both dimensions of the overall construct, three items each were selected to represent positive emotions and self-concept overlap. The three positive emotion items included "*inspired*," "*excited*," and "*passionate*," and the three self-concept overlap items included two of the original self-concept overlap items ("*My work is an important reflection of who I am*"; "*In general, my work is an important part of my self image*") and a Venn diagram item in which participants

selected the diagram that best represented their perceived overlap between the self and their work. This Venn diagram item is used as a single-item scale in the romantic relationships literature to measure the extent to which an individual has included a romantic partner into his or her own self-concept (Aron et al., 1992). Thus, it was an appropriate item to include in the current scale in order to capture self-concept overlap with the work. These six items together had strong internal consistency across both occasions (T1 $\alpha = .87$; T2 $\alpha = .92$).

Positive rumination. Positive rumination was measured using the same scale as described in Study 2 (T1 $\alpha = .90$; T2 $\alpha = .93$).

Self-expansion opportunities. Self-expansion opportunities were measured using the same scale as described in Study 2 (T2 $\alpha = .97$).

Job involvement. Because other constructs in the literature have been developed to measure employees' cognitive identification with the work, it was important to demonstrate that work passion is not only theoretically different from these constructs but empirically distinct as well. Thus, *job involvement* was included as a control in this study. Job involvement is defined as "a cognitive or belief state of psychological identification" with one's job (Kanungo, 1982, p. 342), and has been linked to both greater effort on the job (Brown & Leigh, 1996) as well as an inability to psychologically detach from the job during off-job time (Kühnel et al., 2009). This suggests that job involvement may not only be conceptually similar to work passion, but also may have similar relationships to engagement (e.g., positive rumination). Job involvement was measured using the 10-item scale developed by Kanungo (1982). Response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is: "*I live, eat, and breathe my job*;" T1 $\alpha = .91$).

Data Analytic Approach

As in Study 2, all analyses were conducted using Mplus 7.0 (Muthén & Muthén, 1998-2012). Missing data was imputed using the Missing Values module in SPSS; maximum-likelihood (ML) estimates were imputed using the expectation-maximization (EM) algorithm (Little & Rubin, 2002), and were conditional on all predictors and outcomes used in the study.

First, a set of confirmatory factor analyses was conducted to examine the construct validity of the study measures as well as the viability of modeling work passion as a higher-order construct. First, a measurement model with the Time 1 study variables (positive emotions, self-concept overlap, rumination), the Time 2 moderator (self-expansion), and the control variable (job involvement) was estimated.⁷ As in Study 2, item parcels were created using the single-factor method (Landis et al., 2000). The measurement model fit the data very well ($\chi^2[55] = 58.20, p > .10, CFI = 0.99, TLI = 0.99, RMSEA = 0.02$). All of the parcels loaded significantly on their respective latent construct, with standardized factor loadings ranging from 0.85 to 0.96. The measurement model also fit the data better than alternative models in which all parcels were combined into a single factor ($\Delta\chi^2[\Delta df = 10] = 897.83, p < .01$), or in which positive emotions and self-concept overlap parcels were combined to form a single passion factor ($\Delta\chi^2[\Delta df = 4] = 274.50, p < .01$).

Next, a structural model in which the positive emotions factor and self-concept overlap factor were treated as indicators of a higher-order factor (i.e., work passion) was estimated. However, the addition of the higher-order work passion factor resulted in a misspecified model, in which the latent variable covariance matrix was not positive definite. This error message indicates that there is either a negative residual variance or a correlation of greater than one

⁷ A CFA was first run including all variables across Time 1 and Time 2. However, the model would not run, even after adding residual correlations between the same variables measured at Time 1 and Time 2.

somewhere in the results. Upon closer inspection of the results, it appeared that all residual variances were positive, but the correlation between the latent higher-order work passion factor and the latent self-expansion opportunities factor was greater than one. This suggests that the model is inadmissible, and therefore using this model for hypothesis testing would not be permitted.

As an alternative, a six-item Likert scale was used to measure work passion in the current study. An EFA analysis with direct oblimin rotation yielded a single factor with an eigenvalue greater than 1, explaining 60.85% of the variance. The scale also showed strong, positive correlations with the positive emotions and self-concept overlap scales ($.57 \leq rs \leq .87, p < .01$). Although strong correlations are not surprising given that the scale had 4 of the same items from the original scales, this demonstrates that the new scale captures essentially the same phenomenon as when the positive emotions and self-concept overlap scales are modeled as either a profile or latent multidimensional construct. Thus, this new 6-item scale was deemed a suitable measure of work passion, and was used in all further analyses.

Results

The descriptive statistics (means and SDs, correlations, and internal consistency coefficients) of the study variables are reported in **Table 15**. Consistent with the self-expansion theory, passion decreased between Time 1 ($M = 3.43, SD = 1.11$) and Time 2 ($M = 3.23, SD = 1.23, p < .01$) among this sample of job newcomers. Positive rumination also slightly decreased between Time 1 ($M = 4.26, SD = 1.43$) and Time 2 ($M = 4.08, SD = 1.57, p = .09$), although the effect failed to reach traditional levels of statistical significance. Work passion and positive rumination were strongly and positively correlated with each other both within and across occasions. In addition, self-expansion opportunities were very highly correlated with work

passion at Time 2 ($r = .87, p < .01$), illustrating the need to empirically distinguish work passion from self-expansion opportunities. Similarly, job involvement was strongly and positively correlated with work passion and positive rumination (at both time points); this suggests that job involvement may conceptually – and empirically – overlap with work passion, and highlights the importance of including job involvement as a control variable.

Testing the Measurement Models

A set of confirmatory factor analyses was conducted to examine the construct validity of study measures (see **Table 16**). First, a measurement model (M_0) was computed in which all Time 1 (work passion, positive rumination, and job involvement) and Time 2 (work passion, positive rumination, and self-expansion opportunities) items loaded onto their corresponding latent factors. As before, item parcels were created using the single-factor method (Landis et al., 2000). The measurement model fit the data very well ($\chi^2[75] = 140.55, p < .05$, CFI = 0.98, TLI = 0.97, RMSEA = 0.07), and all indicators (i.e., parcels) loaded significantly onto their respective latent construct with standardized factor loadings ranging from 0.86 to 0.98.

Next, alternative models were specified and compared to the measurement model (M_0). The first alternative model (M_1) combined job involvement and work passion at Time 1; these two constructs are theoretically related in that both refer to an internalization of the job or work into the self-concept, and were also strongly correlated in the measurement model ($r = .79, p < .01$). This model ($M_1; \chi^2[80] = 264.68, p < .05$, CFI = 0.93, TLI = 0.91, RMSEA = 0.12) fit the data significantly worse than the measurement model (M_0), $\Delta\chi^2[\Delta df=5]=124.13, p < .01$). The second alternative model (M_2) combined self-expansion opportunities and work passion at Time 2; although these two constructs are expected to be strongly overlapping early in one's career, they ought to be distinct after the honeymoon period has ended. Again, this model (M_2 ;

$\chi^2[80] = 264.30, p < .05, CFI = 0.93, TLI = 0.91, RMSEA = 0.12$) fit the data significantly worse than the measurement model (M_0), $\Delta\chi^2[\Delta df=5]=123.75, p < .01$).

The measurement model (M_0) was also compared to a model (M_3) in which Time 1 and Time 2 constructs loaded onto two general factors. This model ($M_3; \chi^2[89] = 691.52, p < .05, CFI = 0.79, TLI = 0.75, RMSEA = 0.20$) also fit the data significantly worse than the measurement model (M_0), $\Delta\chi^2[\Delta df=14]=550.97, p < .01$). Finally, to examine potential common method bias, a model (M_4) was tested in which all constructs loaded into a single factor. This model ($M_4; \chi^2[90] = 1028.60, p < .05, CFI = 0.67, TLI = 0.61, RMSEA = 0.25$) fit the data significantly worse than the measurement model (M_0), $\Delta\chi^2[\Delta df=15]=888.05, p < .01$). Thus, the measurement model in which item parcels loaded only onto their respective latent factor (M_0) provided the best fit to the data overall, demonstrating that each of the study's constructs are distinguishable from one another.

Testing the Stability Models

Because the model includes variables measured at two time points, it was important to estimate both autoregressive and cross-lagged paths. Autoregressive paths were estimated by regressing Time 2 variables (i.e., work passion and positive rumination) on their Time 1 equivalent. Cross-lagged paths were estimated by regressing work passion at Time 2 on positive rumination at Time 1, and positive rumination at Time 2 on work passion at Time 1 (**Figure 7**).

An initial stability model was specified in which only the autoregressive and cross-lagged paths were estimated (M_5). This model was tested in order to examine how work passion and positive rumination at Time 1 were related to their Time 2 equivalents, as well as the direct paths from one construct to the other. This model ($M_5; \chi^2[79] = 219.99, p < .05, CFI = 0.95, TLI = 0.94, RMSEA = 0.10$) resulted in a significantly worse fit than the measurement model (M_0 ;

$\Delta\chi^2[\Delta df=4]=79.44, p < .01$), despite the fact that the autoregressive path for work passion and both cross-lagged paths were significant. Modification indices suggested that allowing the error terms of self-expansion at Time 2 to be correlated with rumination and passion at Time 2 would greatly improve model fit. Allowing the error terms to be correlated, this new model ($M_6; \chi^2[77] = 143.20, p < .05, CFI = 0.98, TLI = 0.97, RMSEA = 0.07$) significantly improved model fit as expected, and was not significantly different from the measurement model ($M_0; \Delta\chi^2[\Delta df=2]=2.65, p > .10$). In addition, adding these modifications to the model did not substantially change the estimates of the remaining parameters, supporting the decision to include these two residual correlations.

Finally, in order to test whether work passion is a distinct and useful construct in understanding work engagement, a model was tested in which job involvement was included as a control to the previous model. This model ($M_7; \chi^2[76] = 141.01, p < .05, CFI = 0.98, TLI = 0.97, RMSEA = 0.07$) also provided a good fit to the data, and was not significantly different from the measurement model ($M_0; \Delta\chi^2[\Delta df=1]=.46, p > .10$). Thus, because this model accounted for the autoregressive paths, the cross-lagged paths, the control variable, and was not significantly different from the measurement model, it was chosen as the optimal model for testing the structural relationships.

Hypotheses Testing

Results indicated that work passion at Time 1 was positively related to work passion at Time 2 ($\gamma = 0.90, p < .01$), and positive rumination at Time 1 was also related to positive rumination at Time 2 ($\gamma = 0.47, p < .01$). In terms of the cross-lagged paths, work passion at Time 1 was positively related to positive rumination at Time 2 ($\gamma = 0.37, p < .01$), but positive rumination at Time 1 was not significantly related to work passion at Time 2 ($\gamma = -0.10, p > .10$).

Moreover, relationships were not substantially changed when job involvement was included as a control variable, and job involvement at Time 1 was not related to work passion at Time 2 ($\gamma = 0.13, p > .10$).

Taken together, these initial results suggest that both work passion and positive rumination are relatively stable across occasions, and that the relationship between work passion and positive rumination cannot be explained by job involvement. In addition, the positive relationship between work passion at Time 1 and positive rumination at Time 2 suggests that newcomer work passion predicts later engagement, beyond prior levels of engagement (supporting Hypothesis 3). In contrast, the lack of relationship between rumination at Time 1 (during the honeymoon stage) and work passion at Time 2 (after the honeymoon period has faded) suggests that this relationship might only exist under certain conditions (such as high self-expansion opportunities, as proposed in the work passion model).

Next, the interaction between positive rumination at Time 1 and self-expansion at Time 2 was added to the model. This was achieved by regressing work passion at Time 2 on positive rumination at Time 1, self-expansion at Time 2, and the interaction term. Supporting Hypothesis 4, results showed that the interaction between positive rumination and self-expansion was significantly related to work passion at Time 2 ($\gamma = 0.12, p < .01$). As shown in **Figure 8**, the relationship between newcomer positive rumination and later work passion is positive when self-expansion opportunities are high, but negative when self-expansion opportunities are low. Though simple slope tests for 1 SD above ($\gamma = 0.10, p > .10$) and below ($\gamma = -0.13, p > .10$) the mean were not significant, they were significantly different from each other. As a result, it appears that frequently cogitating about the work role (i.e., positive rumination) can fuel passion over time, provided an employee continues to experience self-expansion opportunities at work.

Post Hoc Analyses

Building on the finding that self-expansion opportunities moderated the relationship between positive rumination at Time 1 and work passion at Time 2, I examined whether self-expansion opportunities also moderated the relationship between initial and later levels of work passion. According to self-expansion theory, self-expansion opportunities are crucial for sustaining passion over time. Earlier analyses revealed that passion at Time 1 was positively related to passion at Time 2; thus, the purpose of the post hoc analysis was to examine whether – and how – self-expansion opportunities moderated this relationship.

To test the moderating role of self-expansion opportunities on initial and later levels of work passion, a model was run in which work passion at Time 2 was regressed onto work passion at Time 1, self-expansion opportunities at Time 2, and the interaction between work passion at Time 1 and self-expansion opportunities. Results indicated that both work passion at Time 1 ($\gamma = 0.43, p < .01$) and self-expansion opportunities at Time 2 ($\gamma = 0.89, p < .01$) predicted work passion at Time 2. The interaction term was also positive and significant ($\gamma = 0.09, p = .02$). As shown in **Figure 9**, the relationship between initial work passion and later work passion appears more strongly positive when self-expansion opportunities are high compared to when they are low. Though simple slope tests for 1 SD above ($\gamma = 0.51, p > .10$) and below ($\gamma = 0.34, p > .10$) the mean were not significant, they were significantly different from each other. Thus, self-expansion opportunities strengthened the positive relationship of work passion over time among the current sample, consistent with self-expansion theory.

Summary and Discussion: Study 3

Study 3 tested the relationship between newcomer passion and positive rumination, as well as the moderating effect of self-expansion opportunities on the relationship between

newcomer engagement and later passion using a cross-lagged design. Newcomer passion was positively related to positive rumination, suggesting that newcomers are more likely to spend more time thinking about their performance and work-related issues during off-job time. Moreover, accounting for newcomer passion, newcomer engagement (i.e., positive rumination) was positively related to later passion when self-expansion opportunities were high, but negatively related when self-expansion opportunities were low. Said in other words, passionate job newcomers were more engaged on the job and, when controlling for initial levels of passion, engagement (i.e., positive rumination) predicted passion over time, depending on self-expansion opportunities. These findings support Hypotheses 3 and 4, demonstrating the importance of self-expansion opportunities for sustaining work passion over time. Specifically, employees who devote more attention to the work role (i.e., positive rumination) are able to fuel their passion over time when they are continually afforded challenging and novel experiences on the job. In contrast, employees who engage in frequent positive rumination but lack self-expansion opportunities will not be able to sustain their passion over time.

Notably, the inclusion of job involvement as a control variable indicates that these relationships cannot merely be attributed to one's cognitive attachment to the job in general. Although job involvement was positively correlated with work passion and positive rumination, the inclusion of job involvement did not substantially change the relationships among work passion, positive rumination, and self-expansion opportunities. Thus, even though both job involvement and work passion involve a cognitive identification with one's work and are expected to have similar nomological nets (Brown, 1996; Kühnel et al., 2009), work passion ought to be considered a distinct construct with unique relationships that cannot be explained by job involvement.

The current study's results must be considered in light of the study's limitations. First, although Study 1 and Study 2 modeled work passion as a multidimensional construct, the current study failed to replicate the measurement of work passion as a higher-order construct using higher-order confirmatory factor analysis. As an alternative, work passion was measured by combining positive emotion items and self-concept overlap items that theoretically captured the work passion construct and empirically had high internal consistency. Although these items loaded onto a single factor and had strong face validity given the proposed definition of work passion, the scale has not undergone rigorous development or validation. Thus, future research on work passion should first seek to refine the work passion scale, following the three basic stages of scale development: (1) item generation, (2) scale development, and (3) scale evaluation (Hinkin, 1995; Schwab, 1980).

Second, although results provide preliminary support for Hypothesis 4 (i.e., self-expansion opportunities moderate the newcomer engagement–long-term passion relationship), the current study only tested the moderating role of self-expansion opportunities on the relationship between newcomer positive rumination and long-term work passion. Moreover, although work passion at Time 1 and positive rumination at Time 1 were strongly and positive correlated, because they were measured on the same occasion it was not possible to determine a causal relationship between the two, or to test the longitudinal mediation path (passion T1 → positive rumination T1 → passion T2) in its entirety (Cole & Maxwell, 2003). Theoretically, it seems unlikely that positive rumination precedes work passion early in one's career; furthermore, existing research demonstrates that emotional and cognitive attachments to work are causally linked to lower off-job detachment (Donahue et al., 2012; Kühnel et al., 2009), supporting the argument that passion causes positive rumination during the honeymoon stage. Yet, a complete

test of the proposed longitudinal model is needed in order to be more confident in the directionality of the relationships; recommendations for doing so are provided in the General Discussion.

Finally, the current sample of Mechanical Turk (MTurk) workers may limit the validity and generalizability of the study's findings, and researchers have debated the advantages and disadvantages of using MTurk samples for behavioral research (Buhrmester, Kwang, & Gosling, 2011; Mason & Suri, 2012; Paolacci & Chandler, 2014). Arguments in favor of MTurk include access to large and diverse participant pools, relatively low costs, and rapid recruitment of participants (Buhrmester et al., 2011; Mason & Suri, 2012). In contrast, arguments against MTurk include variability in data quality, a lack of relationship between pay rates and survey data quality, and unrepresentative samples in terms of age, education, and personality (e.g., MTurk workers tend to be younger, more highly educated, and less extraverted and emotionally stable compared to the general population and/or student samples; see Paolacci & Chandler, 2014, for a review). Thus, the usefulness of using MTurk for behavioral research is still under scrutiny, and even those in favor of MTurk have concluded that "the process of validating MTurk for use by researchers has only just begun" (Buhrmester et al., 2011, p. 5).

Chapter 5

GENERAL DISCUSSION

Despite the widespread popularity of work passion among employees, managers, and individuals beginning their careers, we know “virtually nothing” about the concept (Perrewé et al., 2014). And while social and organizational psychologists have defined and measured passion in various ways over the past decade (e.g., Vallerand & Houlfort, 2003; Zigarmi et al., 2009), the literature still lacks a precise definition of work passion and an understanding of how passion develops and is sustained over time. When a construct lacks a precise definition in the literature, there is a greater risk of inconsistent and inadequate measurement as well as contradictory results (Schwab, 1980). Thus, the overall aim of the current study was to provide the first theoretically driven definition and model of work passion. To do so, work was conceptualized as the target of a relationship, and the self-expansion model of love (Aron & Aron, 1986) was applied to the work domain to illustrate how work passion is manifested early in one’s career, and how self-expansion opportunities are crucial to sustaining that passion over time.

The operationalization and model of work passion were tested in three separate studies using three distinct samples: upper-level college students with previous work experience, faculty and staff from a liberal arts college, and job newcomers from a range of occupational backgrounds. As a result, these diverse samples provided a broad view of how passion is manifested across a number of occupations as well as across various stages in one’s career; this is an important contribution given that previous research on passion has largely focused on entrepreneurs (Baum & Locke, 2004; Chen et al., 2009), or only on individuals who have been

on the job for years (e.g., Ho et al., 2011; Lavigne et al., 2014). Additional strengths to using multiple studies and samples is that each study can address the design flaws and limitations of another study (Bono & McNamara, 2011), and researchers can be more confident in results when they are replicated across samples and contexts.

Summary of Results

Across the three studies, general support was found for the paper's hypotheses. Specifically, Study 1 used a sample of college students with prior work experience, a majority of whom described a summer job or internship. Notably, the temporary and short-term nature of summer positions indicate that students may have remained within the honeymoon period for the duration of their work experience, precluding passion from fading while on the job. Results from an LPA demonstrated that positive emotions about work and self-concept overlap with work represented two distinct yet positively correlated factors that yielded four identifiable profiles. These profiles were labeled "disgruntled," "invested," "apathetic," and "passionate." The "passionate" group was more likely to display a related form of passion (i.e., obsessive passion) but less likely to be motivated for extrinsic reasons (i.e., pay).

Using a sample of college faculty and staff with a wide range of tenure, Study 2 failed to replicate all four profiles, yet demonstrated that individuals who were higher on both positive emotions and self-concept overlap reported working longer hours and engaging in more positive rumination and proactive behavior. Individuals within this sample were also in the midst of finals week at the time of the survey, which may explain why positive emotions – but not self-concept overlap – were lower among this sample compared to the college students in Study 1. Study 2 also provided support for modeling work passion as a latent multidimensional construct (i.e., a higher order factor). Specifically, results indicated that work passion – as a higher-order factor –

was positively related to proactive behavior and work hours. However, self-expansion opportunities emerged as the sole predictor of engagement behaviors when included in the model. When examining the bi-directionality of the relationship, self-expansion opportunities again emerged as the sole predictor of work passion, above and beyond the engagement behaviors.

The fact that self-expansion opportunities alone accounted for both work passion and engagement behaviors in Study 2 might initially suggest that work passion is redundant or unnecessary for engagement. However, because the majority of employees within Study 2 had been on the job for awhile, these findings indicate that self-expansion does in fact matter for both passion and engagement over time, consistent with the self-expansion theory. Moreover, the fact that work passion and self-expansion opportunities were highly correlated (and measured on the same occasion) suggests that employees may have a difficult time disentangling their “fire” (passion) from its “fuel” (self-expansion) when considered simultaneously.

By employing a cross-lagged design to examine the relationship among work passion, positive rumination, and self-expansion opportunities over time, Study 3 therefore provided a better test of the relationship between work passion and engagement behaviors. Using a sample of job newcomers, results indicated that newcomer passion drives engagement, and the relationship between newcomer engagement (i.e., positive rumination) and later passion *depends* on self-expansion opportunities. In sum, the three studies provide some support for the longitudinal model of work passion, and illustrate the critical role of self-expansion opportunities in predicting both work passion and work engagement behaviors.

On the Multidimensionality of Work Passion

In a recent call for more research on work passion, it was noted that because “there is currently no holistic model of passion in the literature...there is no better place to begin a

research program than to start with theory development” (Perrewé et al., 2014, p. 148). The current paper addressed this first step by laying out three requirements in the introduction that a theory must meet in order to be applicable to work passion. The first requirement was that the theory must explain how passion for work influences one’s self-concept, given the fact that passionate employees tend to describe their work as part of “who they are” and something they cannot help but do. According to the self-expansion model of love (Aron & Aron, 1986), love is fundamentally motivational as it pushes us to develop relationships and integrate the other into our own sense of self (Aron, Aron, & Smollan, 1992). Thus, romantic love involves being emotionally attached to a partner as well as cognitively attached in that our sense of self has expanded to include the other person.

Applied to work passion, this suggested that passion must also include both a positive emotional connection and self-concept overlap with the work. Consequently, the current paper defined work passion as *a motivational state comprised of strong, positive emotions about the work and high overlap of the work with the self-concept*. Previous definitions of passion have been vague or contaminated with other constructs (e.g., De Clercq et al., 2013; Perrewé et al., 2014), raising concerns about construct proliferation or putting “old wine in a new bottle” (Le et al., 2010). By drawing a comparison between romantic passion and work passion, this new definition builds on previous research while at the same time distinguishing work passion from related motivation constructs.

In order to test the multidimensional nature of work passion, a variety of analytical approaches were utilized in the current study. Although latent profile analysis and higher-order confirmatory factor analysis both provided support for the multidimensional nature of the construct within at least one study, the specific latent profiles could not be replicated across

Study 1 and Study 2, and the higher-order factor could not be replicated across Study 2 and Study 3, prompting the need to create a new work passion scale. Thus, it seems the definition of work passion has theoretical and empirical support across studies, but the precise operationalization of work passion is yet to be determined. Creating and validating a measure of work passion that captures both the positive emotions and self-concept overlap with the work is therefore an important next step for researchers interested in studying the role of passion within the work domain.

On the Relationship between Work Passion and Work Engagement

The second requirement outlined in the introduction for applying a theory to work passion was that the theory must explain how – and why – passion motivates behavior. According to the self-expansion model of love, people will make personal sacrifices in a relationship because “helping the other is helping the self” (Aron & Aron, 2006, p. 367). The romantic partner is seen as an extension of the self, and therefore devoting more time, effort, and energy into the relationship is an investment, not a sacrifice (Aron & Aron, 1997). Applying this notion to the work role, passionate employees may invest more time, effort, and attention into their work because the work has become an extension of the self.

Based on this application of the self-expansion model to the work role, Hypotheses 1-3 stated that work passion would be positively related to proactive behavior, work hours, and positive rumination, particularly among job newcomers. And in fact, strong relationships emerged between work passion and these work engagement behaviors across the paper’s studies. For example, work passion predicted engagement behaviors among college faculty and staff (Study 2), and newcomer work passion was positively related to later positive rumination (Study 3). This is consistent with the self-expansion model of love, as well as research on romantic

relationships in general. Because romantic love is fundamentally motivational (Aron & Aron, 1996), individuals in love often cannot help but to prioritize the relationship (Aron et al., 2005) and to spend time constantly thinking about their loved one (Brand et al., 2007). In a similar fashion, results from the current studies suggest that employees who are passionate about their work also feel the urge to invest more effort and attention into the work role.

On the Role of Passion Over Time

The third requirement for applying a theory to work passion was that the theory must address the stability and outcomes of passion over time. It was argued that the self-expansion model met this final requirement given its emphasis on the conditions under which romantic love fades – or is sustained – as time goes on (Tucker & Aron, 1993). Within romantic relationships, love for the partner grows as one experiences self-expansion (Aron & Aron, 1986), and sustaining romantic passion is contingent upon continuing to have these experiences (Sheets, 2014). If this theory is applicable to the work domain, then employees should be able to fuel their passion via work-related self-expansion opportunities; however, they should experience a decrease in passion if self-expansion is lacking.

Supporting the self-expansion model and its applicability to the work domain, the current paper found that self-expansion opportunities are in fact critical to employee's passion over time. Specifically, Study 2 showed that self-expansion opportunities predicted work passion among college faculty and staff, and Study 3 showed that positive rumination early in one's career was only positively related to later passion when self-expansion opportunities were high. Additionally, passion levels showed a more strongly positive increase when self-expansion opportunities were high compared to low. Why are these opportunities so critical to sustaining passion over time? Returning to the self-expansion model, people are motivated to enter into a

romantic relationship because they believe it will afford them access to new resources, such as new knowledge and social assets that facilitate goal achievement (Aron & Aron, 2006). In a similar fashion, passionate employees who devote more time and effort into the work role expect that this investment will pay off in the form of new experiences, knowledge, or responsibilities (i.e., self-expansion opportunities). If the effort is not compensated with such experiences, employees may decide to conserve their effort or invest it elsewhere (e.g., into family responsibilities), consequently resulting in a decrease in passion.

Furthermore, the role of self-expansion in sustaining a feedback spiral between passion and engagement suggests that the conservation of resources theory (COR; Hobfoll, 1989) might also be applicable to understanding the long-term outcomes of work passion. That is, if self-expansion opportunities determine whether acting passionately on the job – in the form of increased engagement behaviors – reinforces passion over time, then a lack of self-expansion opportunities may ultimately be depleting for passionate employees. According to Hobfoll's COR model, people are motivated to obtain, protect, and build resources. Building and acquiring new resources increases employees' resiliency and well-being, while a lack of resources is linked to greater stress and depletion (Halbesleben, 2006; Hobfoll, 2002; Kim, Hollensbe, Schwoerer, & Halbesleben, 2015).

Thus, if passionate employees are expending greater amounts of energy and effort on the job but are not building new resources in the process, they may ultimately become too depleted to maintain their passion – and the associated engagement behaviors – over time (Baumeister, Bratslavsky, Muraven, & Tice, 1998). In a related test of employees' regulatory resource pools and organizational citizenship behaviors (Troughakos, Beal, Cheng, & Zweig, 2015), employees who expended greater effort on the job were less likely to engage in OCBs at the end of the day

due to exhaustion. Likewise, passionate employees who are unable to build resources at work via self-expansion opportunities might become too depleted to sustain their engagement. This depletion may also be linked to greater burnout and turnover intentions, suggesting that passion may be linked to strain when self-expansion opportunities are low.

Practical Implications

The finding that passion can in fact be “fueled” over time has important implications for both employees and managers desiring to harness passion in the workplace. From the employee perspective, having opportunities to gain new skills, knowledge, and capabilities is crucial to “fueling the flames” of their passion. Notably, these opportunities can come in many forms, as long as they are inherently challenging and novel. For example, employees may attend various learning and professional development activities offered by their employer. The type of training can vary from leadership development (Brown & May, 2012), to teamwork skills training (Ellis, Bell, Ployhart, Hollenbeck, & Ilgen, 2005), to meditation and mindfulness (Grégoire & Lachance, 2015) – the important thing is that the employee perceives it to be both relevant to and meaningful for their own work.

Unfortunately, not all employers offer these types of opportunities or experiences for their employees. In cases such as these, employees should consider job crafting (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). Job crafting is defined as “the physical and cognitive changes individuals make in the task or relational boundaries of their work” (Wrzesniewski & Dutton, 2001, p. 179). Job crafters can shape task and relational boundaries by changing the type and number of tasks for which they are responsible, as well as the nature of the interactions they have with coworkers, supervisors, and customers. Job crafting has been linked to increased engagement and job satisfaction through an increase in job resources (Tims, Bakker, & Derks,

2013), and has also been proposed to lead to a positive work identity and enhanced meaning of work (Wrzesniewski & Dutton, 2001). Taken together, these findings suggest that engaging in job crafting might provide the type of self-expansion opportunities necessary for sustaining passion over the long term.

When organizations do offer formal learning and development programs, it is important that these programs are carefully designed and implemented (Belling, James, & Ladkin, 2004). This is because employees who participate in learning programs might not be able to successfully transfer their learning back to the work role if certain barriers exist. These barriers include both learner characteristics (e.g., capabilities, personality) and program design features (Gully & Chen, 2010). Moreover, managers should consider the various methods by which employees learn. A recent article on work-based learning identified four dimensions of workplace learning, including learning from colleagues, learning from the supervisor, learning through reflection, and learning through experimentation (Nikolova, Van Ruysseveldt, De Witte, & Syroit, 2014). Because there are different avenues through which employees learn and grow professionally, it is important to design programs and activities that together encompass all of the ways in which learning can be facilitated.

In addition to offering formal training and development programs, managers should provide employees with sufficient flexibility and autonomy on the job. Employees with enhanced autonomy are more motivated and engaged at work, and therefore more likely to craft their job in a way that is personally meaningful and fulfilling (Tims & Bakker, 2010). Similarly, job autonomy has been linked to job performance through role breadth, indicating that autonomy motivates employees to take on broader roles beyond formal job requirements, which then positively impacts their performance (Morgeson, Delaney-Klinger, & Hemingway, 2005).

Providing employees with greater autonomy therefore not only benefits the employee in terms of crafting their ideal role and pursuing meaningful work, but also benefits the organization via higher performance.

Finally, it is important to consider job or workplace characteristics that might limit self-expansion opportunities and ultimately “kill” an employee’s passion, such as a lack of job complexity. Complex jobs tend to be more mentally challenging and require a larger number of skills (Campbell, 1988); as a result, these types of jobs might naturally provide employees with more self-expansion opportunities compared to more routine or less challenging jobs.

Furthermore, job complexity can be either motivating or stressful depending on job autonomy (Chung-Yan, 2010). Applied to work passion, this suggests that passionate individuals might benefit from having increased job complexity, but only when they have the autonomy to navigate the work-related challenges and job tasks. Thus, managers should seek to ensure that jobs are sufficiently complex for employees (e.g., by varying assignments in terms of scope and difficulty) and by providing employees with the autonomy to decide how to perform and prioritize job-related tasks.

Limitations and Avenues for Future Research

Although multiple studies were conducted to overcome the limitations of any single study, there are a few limitations that could not be fully addressed by the three studies. These limitations also point to potentially fruitful avenues for future research. First, all three studies required participants to self-report on all of the variables. Second, no single study was able to test the proposed model in its entirety, and other indicators of employee engagement beyond the three discussed in the current paper may be relevant. Third, although the paper was able to rule out job involvement as a confounding variable, other motivation and identity-related constructs

may influence – or even fully explain – the relationship between passion and engagement. Fourth, potential caveats to applying the self-expansion model to work passion remain to be addressed, including how “unrequited love” relates to the work domain and how work passion affects other interpersonal relationships outside of work.

The first limitation to the current research is that all three studies required participants to self-report their work passion, work engagement, and self-expansion opportunities. Although previous research on passion and employee motivation has used self-reports (e.g., Graves, Ruderman, Ohlott, & Weber, 2012; Vallerand & Houliort, 2003), common method bias could have influenced the current results. In fact, many of the focal study variables were very highly correlated, raising concerns about whether found relationships were due to measurement error (Podsakoff et al., 2003). However, a number of steps were taken to minimize this likelihood. In all three studies, survey items included a combination of positively and negatively worded items, and response scales were varied to minimize consistency biases. In Study 3, data was collected across two occasions spaced three months apart, making it unlikely that the relationship between responses at Time 1 and those at Time 2 were purely due to measurement error.

As a final note on CMV, previous research has shown that interaction effects cannot be explained by common method variance, and that CMV might actually “severely deflate” interaction effects (Siemsen, Roth, & Oliveira, 2009). Thus, the finding that self-expansion opportunities moderate the relationship between newcomer positive rumination and later passion cannot be attributed to the data being self-reported. That being said, future research examining the direct and mediated relationships proposed in the current paper should include objective or other-rated measures of performance, work engagement (e.g., hours recorded on a time log, coworker-reported proactive behavior), and self-expansion opportunities (e.g., number of

development/training programs attended or career development interactions), and should also control for potential sources of bias (e.g., social desirability; Crowne & Marlowe, 1964; Podsakoff et al., 2003).

Second, no single study within the current paper was able to test the hypothesized model in its entirety. Study 2 demonstrated that self-expansion opportunities are positively related to both work passion and work engagement behaviors, and Study 3 showed that the relationship between newcomer engagement (i.e., positive rumination) and passion over time depends on self-expansion opportunities; however, it remains unknown whether there is a reciprocal relationship between sustained work passion and long-term engagement behaviors, and whether self-expansion opportunities moderate this reciprocal relationship. In order for a single study to test all of the paper's hypotheses, a number of study design features and analytical approaches are required.

In terms of study design features, the study must be longitudinal and collect data on work passion, engagement behaviors, and self-expansion opportunities across a minimum of five occasions. Five occasions are necessary in order to capture the mediating effect of newcomer engagement behaviors on long-term passion, as well as the reciprocal relationships over time. For example, data could be collected during an employee's first week on the job, between 1 and 6 months on the job (while the employee is still in the honeymoon phase), and then three time points spaced equally apart after the 6 month time point.

The first three time points (T1, T2, T3) would allow for an appropriate test of whether newcomer engagement mediates newcomer passion and long-term passion, including the moderating role of self-expansion opportunities (Gollob & Reichardt, 1991). Notably, all variables must be measured at each time point. This is because simply having a time lag between

two variables is not sufficient for inferring causation; rather, prior levels of the mediator (or dependent) variable must be controlled for in order to prevent spurious and biased estimates (Cole & Maxwell, 2003). The third through fifth time points (T3, T4, T5) would allow for an appropriate test of the long-term reciprocal relationship between engagement behaviors and work passion, as moderated by self-expansion opportunities. Although reciprocal relationships have been tested with just two time points previously (e.g., de Jonge et al., 2001), these models are limited to reverse cross-lagged effect analyses and are not able to estimate individual changes in slope (Bliese & Ployhart, 2002; Collins, 2006; Kenny & Campbell, 1984). Reciprocal relationships are best tested with three or more time points (e.g., Frese, Garst, & Fay, 2007), because they allow for the examination of reciprocal relationships and individual change over time (Li et al., 2014; McArdle, 2009).

In terms of analytical approaches, latent change analysis would provide researchers the ability to examine both the reciprocal relationships as well as individual differences in change over time. This second feature is particularly important given that the majority of passion research – the current paper included – explicitly or implicitly implies that passion changes over time. Accordingly, a longitudinal model that directly tests whether change occurs and the catalyst of this change (e.g., self-expansion opportunities) would provide the truest test of the paper's hypotheses. Best practices for analyzing longitudinal data using latent change analysis are still being refined, but in-depth reviews of latent variable modeling and longitudinal structural equation modeling are available (Little, 2013; McArdle, 2009).

The third limitation to the current study is that only job involvement and calling were ruled out as a potential confounding variable of the passion–engagement relationship. This was an important step in demonstrating the distinct nature of the work passion construct, but there are

additional constructs that may confound the relationship and remain to be tested. Specifically, the introduction of the paper discussed affective commitment and intrinsic motivation (in addition to calling) as conceptually similar constructs within the motivation literature. Future research should continue to examine how passion is similar to – and distinct from – these related constructs. In fact, calling has recently been described as “a consuming, meaningful passion toward a domain” (Riza & Heller, 2015, p. 698), highlighting the need for further clarification regarding how callings differ from work passion.

Related to the need to disentangle work passion from similar constructs is the need to examine other indicators of work engagement and/or mediators of the newcomer–long-term passion relationship. The current paper focused on proactive behavior, work hours, and positive rumination, but it is likely that work passion motivates employees to express their passion in a number of ways. For example, passionate employees who invest considerable time and energy into the work role may consequently become more engrained in the organization overall. Thus, passionate employees may have higher organizational identification compared to their less passionate counterparts (Astakhova & Porter, 2015; Mael & Ashforth, 1992). As another example, employees who feel that their job allows them to “live out their passion” may perceive greater person-job fit because the job provides them with opportunities to pursue the tasks and outcomes that are personally meaningful to them (Edwards, 1991). In this case, self-expansion opportunities might moderate the reciprocal relationship between PJ-fit and work passion.

The fourth limitation to the current study is that a number of potential caveats to applying the self-expansion model to work passion remain to be addressed. For example, the introduction of the current paper identified “unrequited love” as a phenomenon with unclear implications for the work domain. Within romantic relationships, unrequited love occurs when individuals pursue

a romantic relationship out of a desire to be in love rather than because they genuinely want a connection with a particular person (Aron & Aron, 1996). How might this aspect of the self-expansion model apply to the work role? One avenue to addressing this question is to consider the consequences of desiring an occupation for its reputation or prestige, rather than a passion for the work itself. For example, an individual might pursue a career as a surgeon because he is attracted to the prestige of being a doctor (Chartrand, Dohm, Dawis, & Lofquist, 1987). However, without a passion (or ability) to actually perform surgery and treat illnesses, he may find the career a poor fit, be less satisfied, and eventually withdraw (Cable & DeRue, 2002; Edwards, 1991).

Finally, sustaining passion over time might have consequences for non-work domains as well. The self-expansion model tends to focus on the consequences of romantic passion for the romantic relationship; likewise, the current paper focused on the consequences of passion within the work domain. However, given that passionate employees are often consumed by work-related thoughts and activities (and this preoccupation is not restricted to the physical boundaries of the workplace), it is possible that passion affects other personal or home outcomes as well. For example, passionate employees may be more susceptible to work-family conflict if the work role consumes all of their resources, preventing them from investing time and effort into the home role (Greenhaus & Beutell, 1985; Hobfoll, 1989). Alternatively, passionate employees may experience work-family enrichment if engagement in the work role allows them to accrue more benefits and resources that facilitate performance and engagement at home (Greenhaus & Powell, 2006; Rothbard, 2001). Thus, it seems that arguments can be made for both a facilitative and depleting effect of work passion across domains, indicating that future research should examine whether passionate employees experience these forms of spillover, and if so, under what

conditions (including self-expansion opportunities) one form of spillover is more likely than the other.

Conclusion

Although extensive research has examined employee motivation at work, very little is known about work passion as a specific form of motivation in the workplace. The current paper applied the self-expansion model of love to the work domain to argue that work passion is a distinct construct in its own right, and that employees' ability to sustain passion over time depends on continual self-expansion opportunities at work. General support was found for the proposed theoretical model, highlighting the need for additional research on factors that either facilitate or frustrate employees' work passion, as well as the need for employees and organizations alike to take an active role in fueling work passion through challenging and novel work experiences.

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Appendix A

Tables

Table 1

Examples of Work Passion Definitions in the Literature

Source	Definition
De Clercq, Honig, & Martin (2013)	Passion for work [is] the extent to which people experience feelings of pleasantness and joy when engaging in intensive work-related activities.
Ho, Wong, & Lee (2011)	[Job passion is] a job attitude comprising both affective and cognitive elements that embody the strong inclination that one has towards one's job.
Perrewé, Hochwarter, Ferris, McAllister, & Harris (2014)	An individual's emotional and persistent state of desire on the basis of cognitive and affective work appraisals, which results in consistent work intentions and behaviors.
Vallerand & Houliort (2003)	Passion refers to a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy.
Zigarmi, Nimon, Houson, Witt, & Diehl (2009)	Employee work passion is an individual's persistent, emotionally positive, meaning-based, state of well-being stemming from reoccurring cognitive and affective appraisals of various job and organizational situations that results in consistent, constructive work intentions and behaviors.

Table 2

Study Overview

	Study 1	Study 2	Study 3
Sample	306 undergraduate students	161 Faculty & Staff of liberal arts college	165 job newcomers recruited through Amazon's Mechanical Turk
Purpose	(1) Examine the psychometric properties of the work passion construct, and (2) distinguish it from other, related constructs in the literature.	(1) Further examine work passion as a multidimensional construct, and (2) examine the moderating role of self-expansion opportunities on the passion-engagement relationship among long-term employees.	(1) Examine the relationship between engagement and passion among job newcomers, and (2) examine the effect of self-expansion opportunities on the newcomer engagement-later passion relationship.
Hypotheses Tested	NA	4, 5 (plus preliminary test of 1-3)	3, 4
Analyses	EFA LPA	LPA Higher-Order CFA Path Analysis	Higher-Order CFA SEM with autoregressive and cross-lagged paths
Key Findings	Positive emotions about work and self-concept overlap with work represent two distinct yet positively correlated factors. Four identifiable profiles based on positive emotions and self-concept overlap: Disgruntled, Invested, Apathetic, Passionate.	Two identifiable profiles: Invested, Devoted. Self-expansion opportunities predict work passion, accounting for engagement; self-expansion opportunities also predict engagement, according for work passion.	Accounting for newcomer passion, newcomer positive rumination was positively related to later passion when self-expansion opportunities were high, but negatively related when self-expansion opportunities were low. Work passion is distinct from job involvement.

Table 3

Descriptive Statistics of Study 1 Variables

	M	SD	1	2	3	4	5
1. Positive emotions	3.08	0.80	(0.88)				
2. Self-concept overlap	4.30	1.54	.64**	(0.90)			
3. Harmonious passion	4.27	1.31	.75**	.74**	(0.90)		
4. Obsessive passion	2.23	1.09	.43**	.47**	.54**	(0.90)	
5. Financial motivation	5.20	1.80	-.31**	-.28**	-.40**	-.27**	(0.95)

Note: N = 306. Positive emotions were rated on a 5-pt scale; all other scales were on a 7-pt scale.

* $p < .05$.

** $p < .01$.

Table 4

Exploratory Factor Analysis Results for Passion-Related Scales

	Loadings				Extracted communalities
	Factor 1	Factor 2	Factor 3	Factor 4	
<i>Positive Emotion Items</i>					
Energetic	-.110	-.044	.871	-.005	.642
Excited	.017	.054	.825	-.046	.782
Enthusiastic	.149	-.046	.785	.079	.671
Inspired	.311	.020	.360	-.173	.549
Ecstatic	-.011	.114	.702	-.016	.559
<i>Self-Concept Overlap Items</i>					
Overall, my work had very little to do with how I felt about myself (reverse)	.666	.058	.044	-.021	.538
My work was an important reflection of who I am	.735	.041	.063	-.084	.721
My work was unimportant to my sense of what kind of a person I am (reverse)	.821	-.035	-.025	-.107	.742
In general, my work was an important part of my self-image	.911	.052	-.025	.104	.737
<i>Harmonious Passion Items</i>					
My work allowed me to live a variety of experiences	-.045	.076	-.046	-.781	.572
The new things that I discovered within the confines of my work allowed me to appreciate it even more	.147	-.034	.060	-.725	.726
My line of work reflected the qualities I like about myself	.362	-.061	.154	-.374	.565
My work was in harmony with the other activities in my life	.192	.030	.212	-.367	.468
My work was a passion, that I still managed to control	.264	.124	.293	-.349	.708
My work allowed me to live memorable experiences	.075	.049	.250	-.475	.539
I was completely taken with my work	.187	.409	.092	-.284	.582
<i>Obsessive Passion Items</i>					
I could not live without my work	.051	.527	.054	-.192	.462
The urge was so strong, I couldn't help myself from doing my work	.100	.672	.117	-.117	.696
I had difficulty imagining my life without my work	.149	.669	-.012	-.054	.584
I was emotionally dependent on my work	.029	.807	.071	-.003	.716
I had a tough time controlling my need to do my work	-.079	.844	-.033	-.017	.658
I had almost an obsessive feeling for my work	-.096	.859	-.004	-.021	.688
My mood depended on my being able to do my work	.024	.576	-.031	.129	.297
Eigenvalue	10.447	2.895	1.304	1.005	
% of total variance	45.423	12.586	5.669	4.368	
Total variance				68.046%	

Table 5

Study 1 Fit Indices for Alternative LPA Models

Model	LL	# parameters	AIC	BIC	ABIC	Entropy	LMR (<i>p</i>)	BLRT (<i>p</i>)
<i>LPA models</i>								
One class	-927.97	4	1863.94	1878.83	1866.15	NA	NA	NA
Two classes	-854.51	7	1723.02	1749.08	1726.88	0.75	<0.01	<0.01
Three classes	-834.17	10	1688.33	1725.57	1693.85	0.72	0.01	<0.01
Four classes	-820.51	13	1667.03	1715.43	1674.20	0.81	0.10	<0.01
Five classes	-813.80	16	1659.61	1719.19	1668.44	0.82	0.02	0.01
Six classes	-810.00	19	1658.00	1728.75	1668.49	0.85	0.07	0.07
Seven classes	-807.35	22	1658.71	1740.62	1670.85	0.81	0.40	0.38
<i>LPA models with covariates</i>								
Four classes	-770.56	19	1579.12	1649.87	1589.61	0.80	0.03	0.01
Five classes	-763.87	24	1575.75	1665.11	1589.00	0.81	0.18	0.33
Six classes	-759.02	29	1576.04	1684.02	1592.05	0.79	0.38	0.67

Note: Covariate models include financial motivation and obsessive passion.

Table 6

Study 1 Overall Sample Means and Conditional Response Means for Each Class

	N	Positive Emotions	Self-concept overlap
Sample	306	3.08 (.80) <i>Sometimes</i>	4.30 (1.54) <i>Neither agree/dis</i>
<i>4-class solution</i>			
Class 1: Disgruntled	67 (21.90%)	2.34 (.52) <i>Rarely</i>	2.09 (.47) <i>Disagree</i>
Class 2: Invested	109 (35.62%)	3.20 (.59) <i>Sometimes</i>	5.10 (.48) <i>Somewhat agree</i>
Class 3: Apathetic	74 (24.18%)	2.88 (.61) <i>Sometimes</i>	3.60 (.43) <i>Neither agree/dis</i>
Class 4: Passionate	56 (18.30%)	4.04 (.53) <i>Often</i>	6.33 (.39) <i>Agree</i>

Note: Positive emotions were rated on a 5-pt Likert scale; self-concept was rated on a 7-pt Likert scale.

Table 7

Study 1 Results from the Multinomial Logistic Regression Evaluating the Effects of Covariates on Latent Profile Membership

Covariate/Predictor	Latent Profile 1: Disgruntled			Latent Profile 2: Invested			Latent Profile 3: Apathetic		
	Coefficient (<i>SE</i>)	OR	95% CI	Coefficient (<i>SE</i>)	OR	95% CI	Coefficient (<i>SE</i>)	OR	95% CI
Intercept	2.22 (1.30)	--	--	2.23 (1.00)*	--	--	2.48 (1.03)*	--	--
Financial motivation	0.49 (0.15)**	1.63	1.22-2.18	0.13 (0.12)	1.14	0.90-1.43	0.15 (0.12)	1.16	0.93-1.47
Obsessive passion	-2.15 (0.40)**	0.12	0.05-0.26	-0.76 (0.23)**	0.47	0.30-0.73	-1.12 (0.27)**	0.33	0.20-0.55

Note: CI = confidence interval for the odds ratio; OR = odd ratio; *SE* = standard error of the coefficient

* $p < .05$.

** $p < .01$.

Table 8

Descriptive Statistics of Study 2 Variables

	M	SD	1	2	3	4	5	6	7	8	9
1. Gender	1.58	.51	--								
2. Newcomer status	.17	.38	-.07	--							
3. Positive emotions	3.15	.66	-.14	.17*	(.88)						
4. Self-concept overlap	5.63	1.03	-.10	.04	.23**	(.85)					
5. Proactive behavior	5.27	.84	-.16*	.07	.31**	.19*	(.87)				
6. Work hours	43.72	7.42	-.34**	-.01	.19*	.23**	.12	--			
7. Positive rumination	5.09	1.10	-.16*	.10	.21**	.27**	.19*	.32**	(.88)		
8. Self-expansion	3.42	.72	-.09	.13	.67**	.46**	.33**	.23**	.34**	(.93)	
9. Calling	5.77	1.09	-.07	-.09	.40**	.47**	.16*	.24**	.10	.48**	(.82)

Note: N = 161. Gender (1 = male, 2 = female). Newcomer status (0 = not a newcomer, 1 = newcomer). Work hours = average number of hours worked per week. Positive emotions and self-expansion opportunities were rated on a 5-pt scale; all other scales were on a 7-pt scale.

* $p < .05$.

** $p < .01$.

Table 9

Study 2 Fit Indices for Alternative LPA Models

Model	LL	# parameters	AIC	BIC	ABIC	Entropy	LMR (<i>p</i>)	BLRT (<i>p</i>)
<i>LPA models</i>								
One class	-393.77	4	795.54	807.87	795.21	NA	NA	NA
Two classes	-376.86	7	767.72	789.29	767.13	0.95	<0.01	<0.01
Three classes	-372.85	10	765.72	796.52	764.87	0.72	0.35	0.14
Four classes	-369.66	13	765.31	805.37	764.22	0.78	0.53	0.29
Five classes	-365.32	16	762.63	811.93	761.28	0.84	0.09	0.47
<i>LPA models with covariate</i>								
One class	NA	NA	NA	NA	NA	NA	NA	NA
Two classes	-351.05	8	718.09	742.74	717.42	0.82	<0.01	<0.01
Three classes	-329.58	12	683.16	720.14	682.15	0.86	0.10	<0.01
Four classes	-319.23	16	670.46	719.76	669.11	0.88	0.24	<0.01
Five classes	-310.95	20	661.90	723.53	660.21	0.86	0.10	<0.01

Note: Covariate models include self-expansion opportunities.

Table 10

Study 2 Overall Sample Means and Conditional Response Means for Each Class

	N	Positive Emotions	Self-concept overlap
Sample	161	3.15 (.66) <i>Sometimes</i>	5.63 (1.03) <i>Agree</i>
<i>3-class solution</i>			
Class 1: Invested	59 (36.65%)	2.67 (.58) <i>Sometimes</i>	5.02 (1.18) <i>Somewhat agree</i>
Class 2: Devoted	102 (63.35%)	3.43 (.53) <i>Sometimes</i>	5.99 (.71) <i>Agree</i>

Note: Positive emotions were rated on a 5-pt Likert scale; self-concept was rated on a 7-pt Likert scale.

Table 11

Study 2 Results from the Multinomial Logistic Regression Evaluating the Effects of Covariates on Latent Profile Membership

Covariate/Predictor	Latent Profile 1: Invested		
	Coefficient (<i>SE</i>)	OR	95% CI
Intercept	28.67 (10.03)	--	--
Self-expansion	-8.89 (3.43)*	0.000	0.00-0.10

Note: CI = confidence interval for the odds ratio; OR = odd ratio; *SE* = standard error of the coefficient.

* $p < .01$.

Table 12

Study 2 Results from the Wald Chi-Square (χ^2) Tests of Mean Equality of the Auxiliary Analyses of Work Outcomes

	1 vs. 2	Summary
Work hours	5.22*	1 < 2
Positive rumination	4.98*	1 < 2
Proactive behavior	4.16*	1 < 2

Note: 1 = “invested” profile; 2 = “devoted” profile.

* $p < .05$.

Table 13

Summary of Study 2 CFA Model Comparisons

	χ^2	<i>df</i>	$\Delta\chi^2$	CFI	TLI	RMSEA
<i>Measurement model comparisons</i>						
M ₀ (measurement model based on item parcels)	82.85*	63		.99	.98	.04
M ₁ (all constructs on one factor)	1142.58**	80	1059.73**	.32	.23	.29
M ₂ (engagement constructs combined)	588.32**	72	505.47**	.67	.58	.21
M ₃ (positive emotions and self-concept combined)	240.64**	68	157.79**	.89	.85	.13
<i>Structural model</i>						
M ₄ (positive emotions and self-concept as higher-order latent factor)	86.09*	66	3.24	.99	.98	.04

Note: All model comparisons are against M₀.

* $p < .05$.

** $p < .01$.

Table 14

Direct Effects and Interaction of Work Passion and Work Engagement with Self-Expansion

Outcome	Predictor	Path estimate (SE)	
		Step 1: Predictor only	Step 2: Moderator and Interaction
<i>Engagement → Work Passion (H4)</i>			
Work Passion	Proactive behavior	0.19 (.06)**	-0.15 (0.22)
	Work hours	0.02 (0.01)*	0.02 (0.02)
	Positive rumination	0.05 (0.04)	0.09 (0.17)
	Self-expansion		0.55 (0.28)*
	Proactive behavior x Self-expansion		0.07 (0.07)
	Work hours x Self-expansion		0.00 (0.01)
	Positive rumination x Self-expansion		-0.03 (0.05)
<i>Work Passion → Engagement (H5)</i>			
Proactive behavior	Work passion	1.28 (.50)*	-0.80 (1.04)
	Self-expansion		0.28 (0.13)*
	Passion x Self-expansion		0.31 (0.34)
Work hours	Work passion	8.30 (3.96)*	7.54 (10.71)
	Self-expansion		1.74 (1.03) [†]
	Passion x Self-expansion		-2.08 (2.80)
Positive rumination	Work passion	1.05 (0.60)	-0.83 (2.63)
	Self-expansion		0.54 (0.19)**
	Passion x Self-expansion		0.16 (0.62)

Note: Results indicate path estimates after controlling for gender, newcomer status, and job involvement.

[†] $p < .10$.

* $p \leq .05$.

** $p < .01$.

Table 15

Descriptive Statistics of Study 3 Variables

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Job involvement	3.54	1.02	(.91)									
2. Positive emotions (Time 1)	2.92	.90	.54**	(.89)								
3. Positive emotions (Time 2)	2.72	.93	.53**	.69**	(.91)							
4. Self-concept overlap (Time 1)	4.08	1.43	.48**	.43**	.47**	(.87)						
5. Self-concept overlap (Time 2)	3.98	1.56	.46**	.39**	.65**	.64**	(.89)					
6. Work passion (Time 1)	3.43	1.11	.65**	.76**	.69**	.81**	.60**	(.87)				
7. Work passion (Time 2)	3.23	1.23	.58**	.57**	.87**	.62**	.87**	.75**	(.92)			
8. Positive rumination (Time 1)	4.26	1.43	.50**	.52**	.41**	.48**	.33**	.57**	.43**	(.90)		
9. Positive rumination (Time 2)	4.08	1.57	.29**	.39**	.59**	.47**	.54**	.50**	.64**	.58**	(.93)	
10. Self-expansion Opportunities	2.85	.99	.48**	.55**	.79**	.57**	.74**	.68**	.87**	.37**	.65**	(.97)

Note: N = 165. Job involvement was measured at Time 1; self-expansion opportunities were measured at Time 2.

* $p < .05$.

** $p < .01$.

Table 16

Summary of Study 3 CFA Model Comparisons

	χ^2	<i>df</i>	$\Delta\chi^2$	CFI	TLI	RMSEA
<i>Measurement model comparisons</i>						
M ₀ (measurement model based on item parcels)	140.55*	75		.98	.97	.07
M ₁ (job involvement and T1 passion combined)	264.68*	80	124.13*	.93	.91	.12
M ₂ (self-expansion and T2 passion combined)	264.30*	80	123.75*	.93	.91	.12
M ₃ (T1 and T2 constructs as two factors)	691.52*	89	550.97*	.79	.75	.20
M ₄ (all constructs on one factor)	1028.60*	90	888.05*	.67	.61	.25
<i>Stability models</i>						
M ₅ (autoregressive and cross-lagged paths)	219.99*	79	79.44*	.95	.93	.10
M ₆ (Freeing up 2 residual correlations from M ₅)	143.20*	77	2.65	.98	.97	.07
M ₇ (M ₆ plus job involvement)	141.01*	76	0.46	.98	.97	.07

Note: All model comparisons are against M₀.

* $p < .01$.

Appendix B
Figures

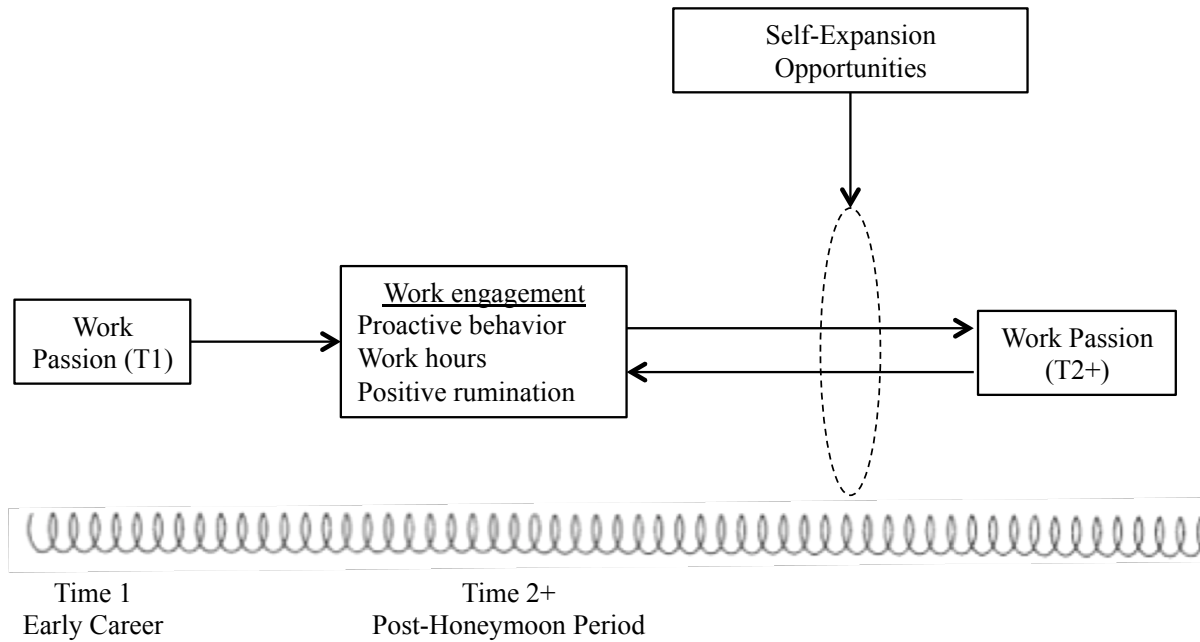


Figure 1. The proposed theoretical model of work passion.

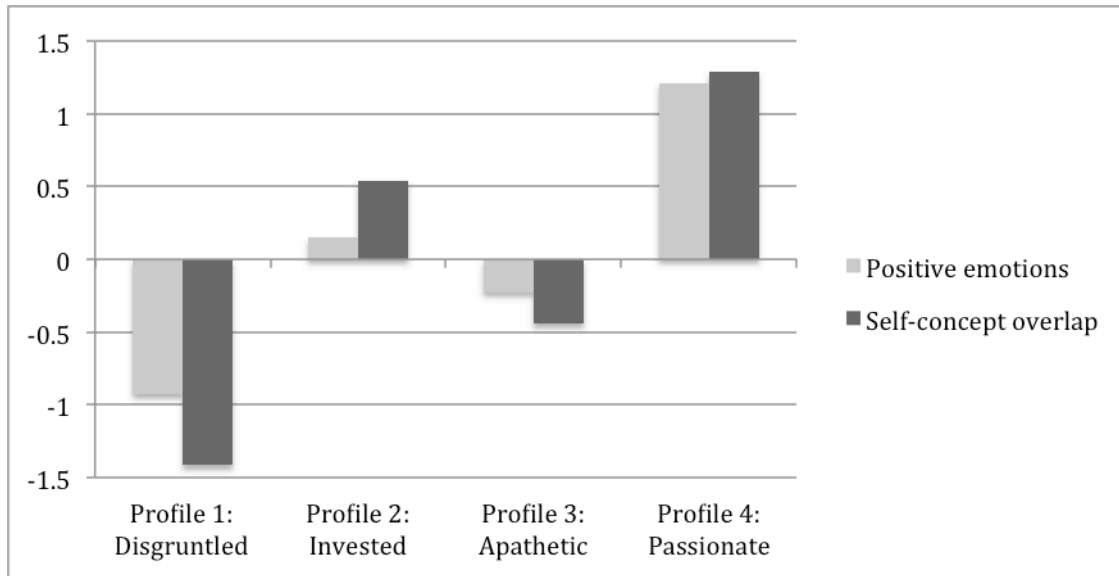


Figure 2. Characteristics of the latent profiles on positive emotions about work and self-concept overlap with work (Study 1). *Note:* The results were standardized to help in the interpretation of the histogram.

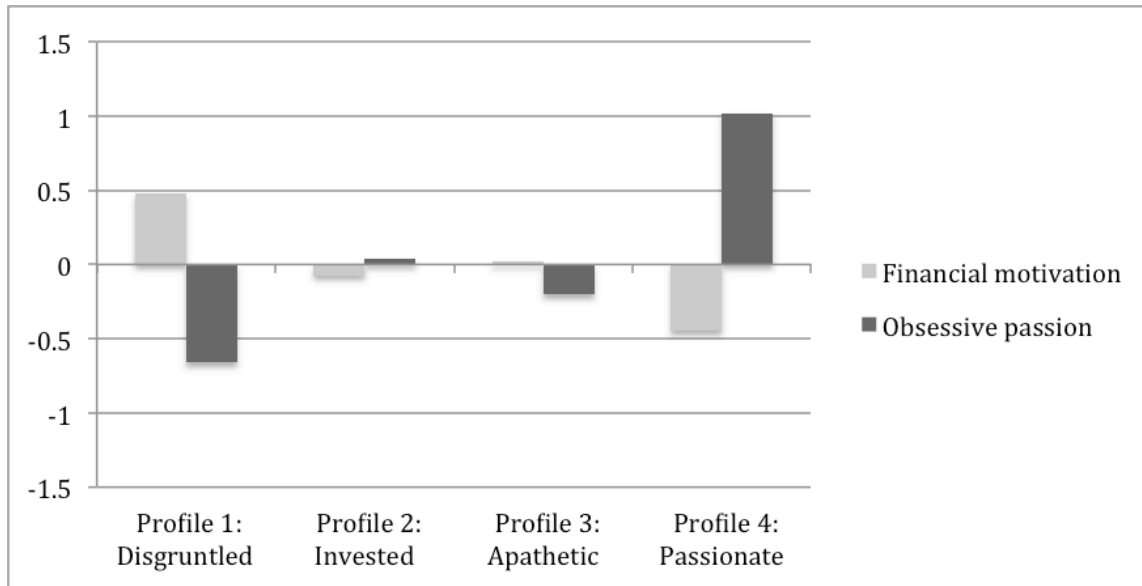


Figure 3. Characteristics of the latent profiles on the covariates (Study 1). *Note:* The results were standardized to help in the interpretation of the histogram.

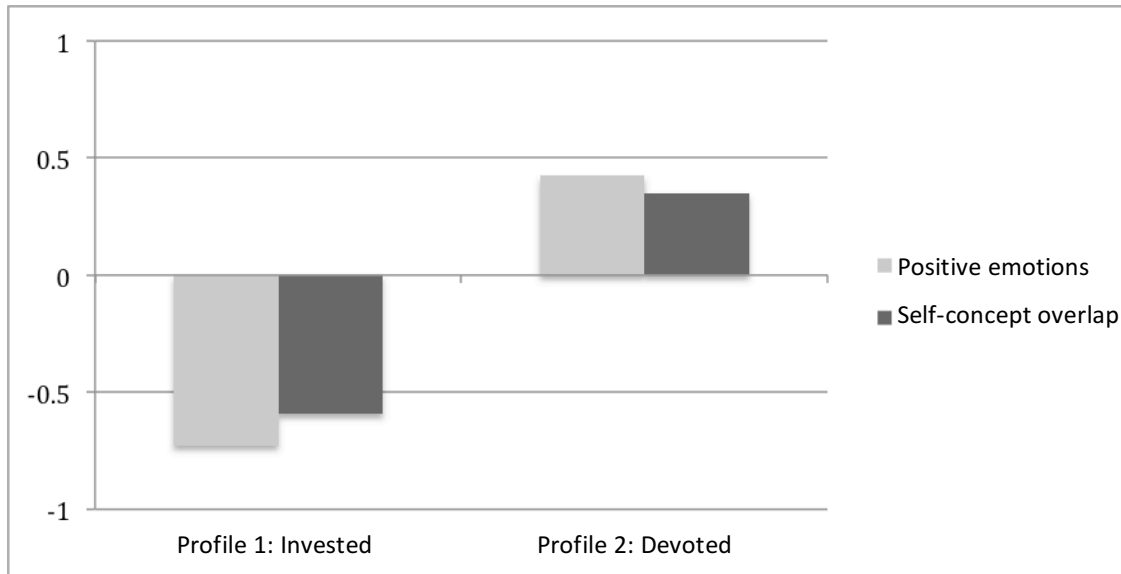


Figure 4. Characteristics of the latent profiles on positive emotions about work and self-concept overlap with work (Study 2). *Note:* The results were standardized to help in the interpretation of the histogram

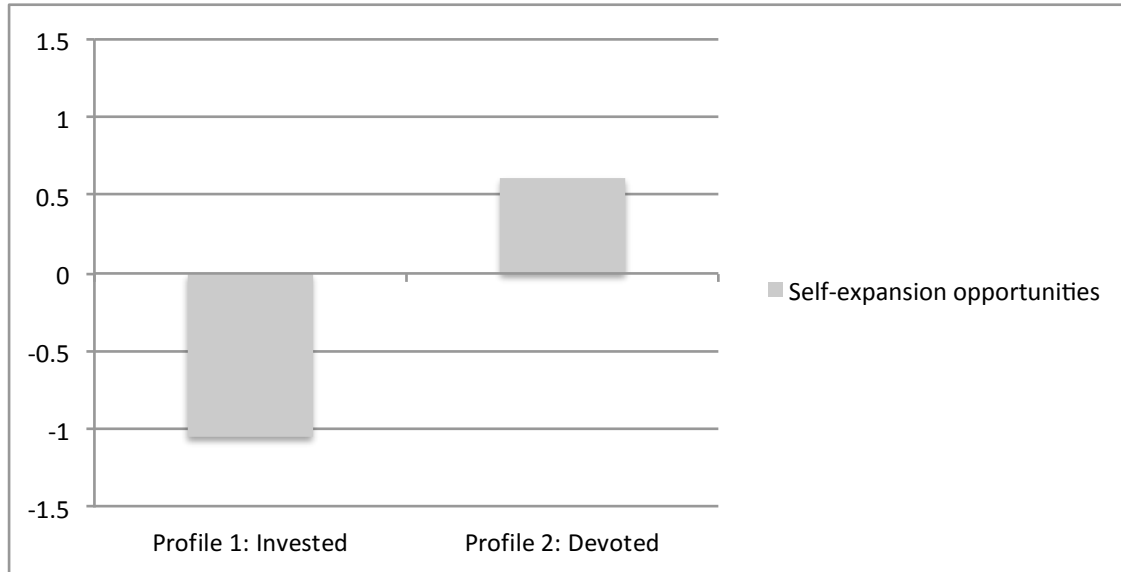


Figure 5. Characteristics of the latent profiles on the covariates (Study 2). Note: The results were standardized to help in the interpretation of the histogram.

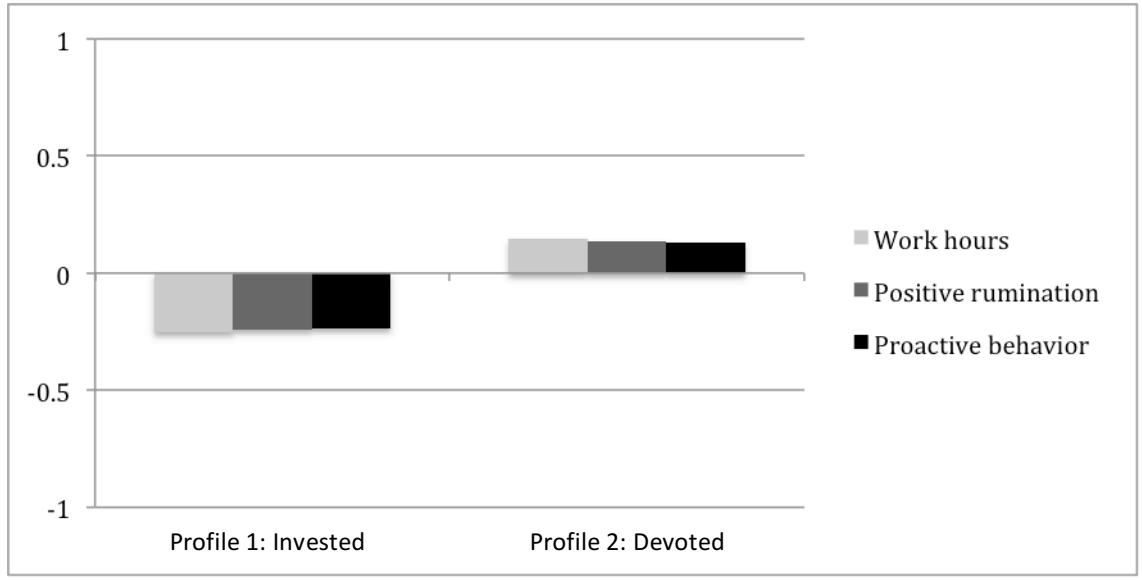


Figure 6. Characteristics of the latent profiles on the outcomes (Study 2). Note: The results were standardized to help in the interpretation of the histogram.

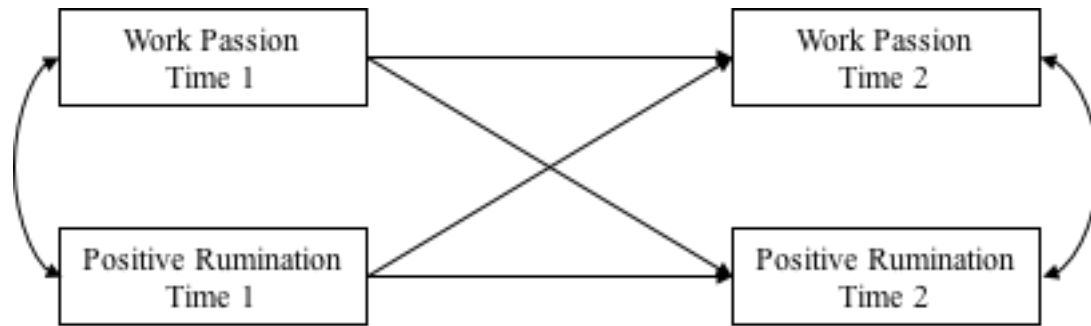


Figure 7. Illustration of autoregressive and cross-lagged paths (Study 3). *Note:* The final structural model (1) included all illustrated paths, (2) controlled for job involvement (regressing passion at Time 1 on job involvement), and (3) allowed the error terms of self-expansion opportunities at Time 2 to be correlated with rumination and passion at Time 2.

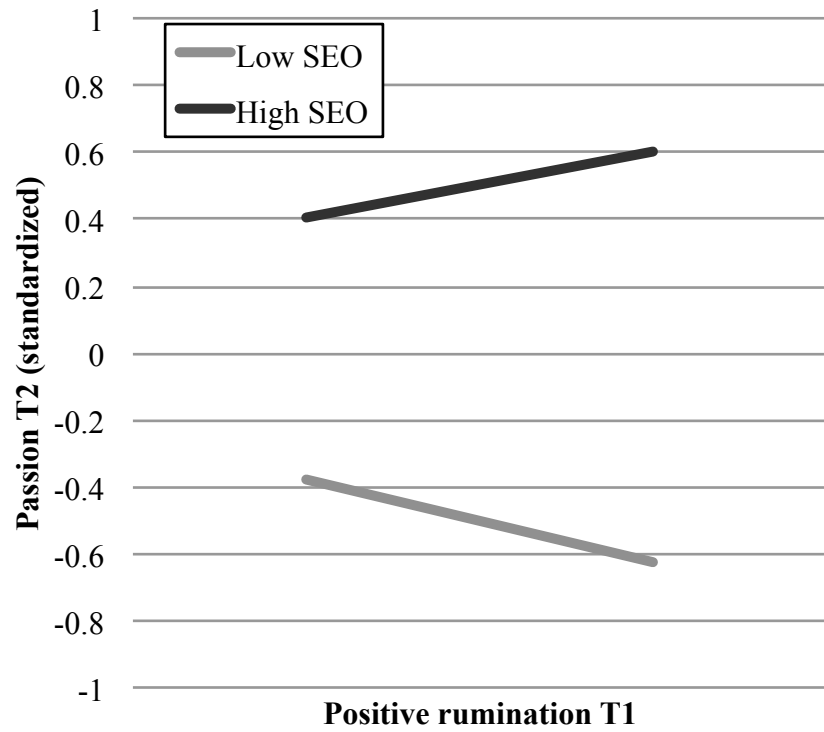


Figure 8. Moderating effect of self-expansion opportunities on the relationship between positive rumination at Time 1 and work passion at Time 2 (Study 3).

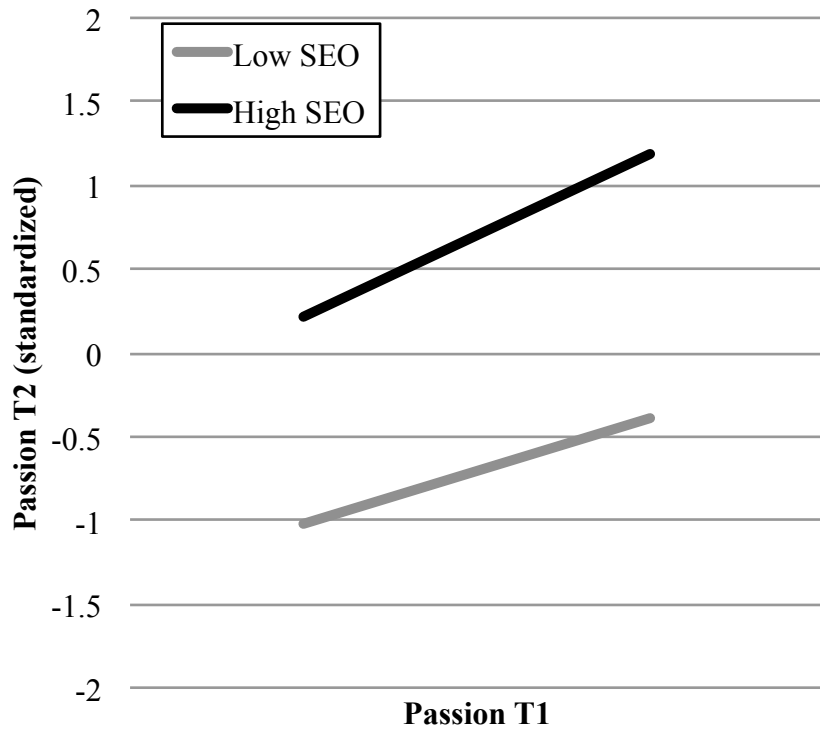


Figure 9. Moderating effect of self-expansion opportunities on the relationship between work passion at Time 1 and work passion at Time 2 (Study 3).

Appendix C

Measures

Calling (Presence-Transcendent Summons subscale of the Calling and Vocation Questionnaire; CVQ, Dik, Eldridge Steger, & Duffy, 2012)

1. I believe that I have been called to my current line of work (transcendent summons)
2. I do not believe that a force beyond myself has helped guide me to my career (reverse)
3. I was drawn by something beyond myself to pursue my current line of work
4. I am pursuing my current line of work because I believe I have been called to do so

Financial Motivation (Prompt: “Why were you motivated to do this work?”)

1. Because I needed to financially support myself or others
2. Because I needed to earn money
3. Because I needed to pay my bills
4. Because I needed the income

Harmonious and Obsessive Passion (Passion Toward Work Scale; Vallerand & Houliort, 2003)

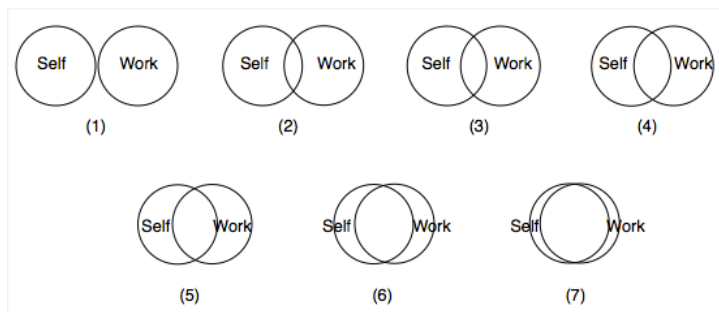
Harmonious Passion:

1. My work allows me to live a variety of experiences
2. The new things that I discover within the confines of my work allow me to appreciate it even more
3. My line of work reflects the qualities I like about myself
4. My work is in harmony with the other activities in my life
5. My work is a passion, that I still manage to control
6. My work allows me to live memorable experiences
7. I am completely taken with my work

Obsessive Passion:

8. I cannot live without my work
9. The urge is so strong, I can't help myself from doing my work
10. I have difficulty imagining my life without my work
11. I am emotionally dependent on my work
12. I have a tough time controlling my need to do my work
13. I have almost an obsessive feeling for my work
14. My mood depends on my being able to do my work

Inclusion of work into the self-concept (adapted Inclusion of Other in the Self (IOS) Scale; Aron, Aron, & Smollan, 1992)



Job involvement (Job Involvement scale; Kanungo, 1982)

1. The most important things that happen to me involve my present job
2. To me, my job is only a small part of who I am (*reverse coded*)
3. I am very much involved personally in my job
4. I live, eat, and breathe my job
5. Most of my interests are centered around my job
6. I have very strong ties with my present job which would be very difficult to break
7. Usually I feel detached from my job (*reverse coded*)
8. Most of my personal life goals are job-oriented
9. I consider my job to be very central to my existence
10. I like to be absorbed in my job most of the time

New Work Passion Scale

1. My work makes me feel excited
2. My work makes me feel inspired
3. My work makes me feel passionate
4. My work is an important reflection of who I am
5. In general, my work is an important part of my self-image
6. Inclusion of work into the self-concept diagram (*see above*)

Positive emotions about work (adapted High Pleasure-High Arousal subscale of the Job-Related Affective Well-Being Scale; JAWS, Van Katwyk, Fox, Spector, & Kelloway, 2000)

1. My work made me feel energetic
2. My work made me feel excited
3. My work made me feel ecstatic
4. My work made me feel enthusiastic
5. My work made me feel inspired

Positive rumination (Problem-Solving Pondering subscale of the Work-Related Rumination Scale; Cropley et al., 2012)

1. In my free time I find myself re-evaluating something I have done at work
2. I find solutions to work-related problems in my free time
3. I find thinking about work during my free time helps me be creative
4. After work I tend to think about how I can improve my performance
5. In my free time I find myself thinking about tasks that need to be done at work the next day

Proactive behavior (Personal Initiative scale; Frese et al., 1997)

1. I actively attack problems
2. Whenever something goes wrong, I search for a solution immediately
3. Whenever there is a chance to get actively involved, I take it
4. I take initiative immediately even when others don't
5. I use opportunities quickly in order to attain my goals
6. Usually I do more than I am asked to do
7. I am particularly good at realizing ideas

Self-concept overlap (adapted Identity subscale of the Collective Self-Esteem Scale; Luhtanen & Crocker, 1992)

1. Overall, my work has very little to do with how I feel about myself (*reverse coded*)
2. My work is an important reflection of who I am
3. My work is unimportant to my sense of what kind of a person I am (*reverse coded*)
4. In general, my work is an important part of my self-image

Self-expansion opportunities (adapted Self-Expansion Questionnaire; Lewandowski & Aron, 2002)

1. How much does your work result in your having new experiences?
2. When you are at work, do you feel a greater awareness of things because of your work?
3. How much does your work increase your ability to accomplish new things?
4. How much does your work make you more appealing to other potential work? **Not relevant*
5. How much does your work help to expand your sense of the kind of person you are?
6. How much do you see your work as a way to expand your own capabilities?
7. Do you often learn new things about your work?
8. How much is your work a source of exciting experiences?
9. How much does your work allow you to compensate for some of your own weaknesses as a person?
10. How much do you feel that you have a larger perspective on things because of your work?
11. How much has your work resulted in your learning of new things?
12. How much has your work made you a better person?
13. How much does your work increase the respect other people have for you?
14. How much does your work increase your knowledge?

Work hours (2 items from measure of work time; Major, Klein, & Ehrhart, 2002)

1. How many hours do you work in an average week? Include time spent doing job-related work at home.
2. On your last regular work day at this job, how many hours did you work? Include time spent doing job-related work at home.

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PUBLICATIONS

- Grandey, A.A. & **Krannitz, M.A.** (in press). Emotion regulation at work and at home. In T.D. Allen and L.T. Eby (Eds.), *Oxford Handbook of Work and Family*.
- Krannitz, M.A.**, Grandey, A.A., Songqi, L., & Almeida, D.M. (2015). Workplace surface acting and marital partner discontent: Anxiety and exhaustion spillover mechanisms. *Journal of Occupational Health Psychology, 20*(3), p. 314-325.
- Grandey, A.A., **Krannitz, M.A.**, & Slezak, T. (2015). On the front lines: Stakeholder threat cues determine how identified employees cope with scandal. *Journal of Occupational Health Psychology, 20*(3), p. 388-403.
- Grandey, A.A., **Krannitz, M.A.**, & Slezak, T. (2013). We are...More than Football: Three Stories of Identity Threat by Penn State Insiders. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 6*(2), 134-140.

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- Krannitz, M.A.** & Grandey, A.A. (2016). Fueling the fire: Applying self-expansion theory to work passion. In C. Ott-Holland (Chair), *Putting Feelings in Context: Research on Relationships and Affect*. Symposium submitted for the 31st Annual Conference of the Society for Industrial and Organizational Psychology, Anaheim, CA.
- Krannitz, M.A.**, Grandey, A.A., Liu, S., & Almeida, D.A. (2015). Emotional labor predicts partner distress: Tension and exhaustion mechanisms. In M. Esmailikia (Chair) & M. Groth (Chair), *Innovations in Emotional Labor*. Symposium accepted for the 30th Annual Conference of the Society for Industrial and Organizational Psychology, Philadelphia, PA.
- Krannitz, M.A.** & Grandey, A.A. (2014). Avoiding threat, approaching opportunity: Scandal appraisals, CSE, and burnout. In A.A. Grandey (Chair) & **M.A. Krannitz** (Chair), *Complexity of Applying Approach/Avoidance Motivation to Work Outcomes*. Symposium conducted at the 29th Annual Conference of the Society for Industrial and Organizational Psychology, Honolulu, HI.
- Mogle, J., Koffer, R., Swenson, J., **Krannitz, M.A.**, LaPergola, C., & Almeida, D. (2014). *A daily diary assessment of financial worries and behaviors: Effects of age and gender*. Poster presented at the 67th annual scientific meeting of the Gerontological Society of America, Washington, D.C.
- Grandey, A.A. & **Krannitz, M.A.** (2013). *From pride to shame: Organizational identification and burnout during scandal*. Poster presented at the 25th annual Association for Psychological Science Convention, Washington, D.C.
- Krannitz, M.A.** (2012). *Media Multitaskers Under Pressure: How Personal and Situational Characteristics Interact to Influence Cognitive Control*. Paper presented at the 25th annual Michigan Undergraduate Psychology Research Conference, Albion, MI.