

Pathways of Passion: Identity Centrality, Passion, and Behavior Among Entrepreneurs

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This study examines the role of passion among entrepreneurs. In particular, the authors integrate identity theory with the literature surrounding passion to investigate the possible pathways through which entrepreneurial identities might influence passion, as well as the relationship between entrepreneurs' passion and behavior. Structural equation modeling of responses from 221 entrepreneurs suggests that passion rises and falls in connection with entrepreneurial identity centrality and, furthermore, that passion is associated with individual entrepreneurial behavior and entrepreneurial self-efficacy. This research provides a starting point for investigating the factors that may impact the development of entrepreneurs' passion as well as the specific mechanisms through which passion energizes entrepreneurial action.

Keywords: *entrepreneur; passion; identity*

Man is only great when he acts from passion.

—Benjamin Disraeli (former British prime minister)

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An emerging body of research indicates that passion—a strong inclination toward certain activities—plays an important role in behavior across a wide variety of disciplines. Several recent studies demonstrate that passion exerts powerful influences upon the manner in which coaches interact with athletes (Lafreniere, Jowett, Vallerand, & Carboneau, 2011), the attainment of elite levels of performance among musicians and dramatic artists (Bonneville-Roussy, Lavigne, & Vallerand, 2011), the quality of one's interpersonal relationships (Philippe, Vallerand, Houliort, Lavigne, & Donahue, 2010), and the burnout experienced by nurses in clinical work settings (Vallerand, Paquet, Philippe, & Charest, 2010). The field of entrepreneurship is among those disciplines intrigued by the concept of passion, with Smilor calling passion “perhaps the most observed phenomenon in the entrepreneurial process” (1997: 342). Within the entrepreneurial realm, scholars have investigated the impact of passion on venture growth (Baum & Locke, 2004; Baum, Locke, & Smith, 2001) and venture capital decision making (Chen, Yao, & Kotha, 2009). Integrating the research on passion in general with that conducted in entrepreneurship, we see that passion energizes motivation and inspires individuals to persist through the trials and tribulations associated with accomplishing difficult tasks.

Although extant research provides tremendous insights about the nature of passion and its broad effects, limitations in that research leave theoretical and empirical gaps in our understanding of the factors that might influence an individual's passion and the pathways through which that passion impacts individual behavior. Whereas we know much about the role passion plays in various activities such as athletic pursuits (Amiot, Vallerand, & Blanchard, 2006; Donahue, Rip, & Vallerand, 2009; Vallerand et al., 2008), gambling behavior (Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004), and online gaming (Lafreniere, Vallerand, Donahue, & Lavigne, 2009; Wang & Chu, 2007), we know comparatively little about those variables that impact passion itself. If we accept the notion that passion can drive behavior (e.g., Vallerand et al., 2007), we must uncover those factors that stimulate passion so we can gain some insight into how this motivational force might emerge and develop. To that end, some scholars have suggested that identity may play an important role in the conceptualization of passion (Cardon, Wincent, Singh, & Drnovsek, 2009; Vallerand et al., 2003), but there has been little theorizing concerning which specific aspects of identity are relevant and how they might influence the development and experience of passion. New theory and research are needed.

In addition to these theoretical gaps, empirical gaps surround passion, particularly within the entrepreneurial domain. Entrepreneurs themselves have long trumpeted the criticality of passion. For example, television host and M. S. Living Omnimedia founder Martha Stewart claims, “Passion is the first and most essential ingredient for planning and beginning a business.” Even though scholars have developed robust theory explaining how passion may drive individual entrepreneurs to persist in their venture endeavors (Cardon et al., 2009), scant empirical research exists to confirm the impact of an entrepreneur's passion on his or her actions (Shane, Locke, & Collins, 2003). We are aware of only three published articles that analyze passion empirically among entrepreneurs (e.g., Baum & Locke, 2004; Baum et al., 2001; Chen et al., 2009), and none of these works explore the linkages between passion and individual entrepreneurial behavior; instead, they focus on the relationships between passion and venture outcomes or actions of other individuals such as investors. If we are to attempt

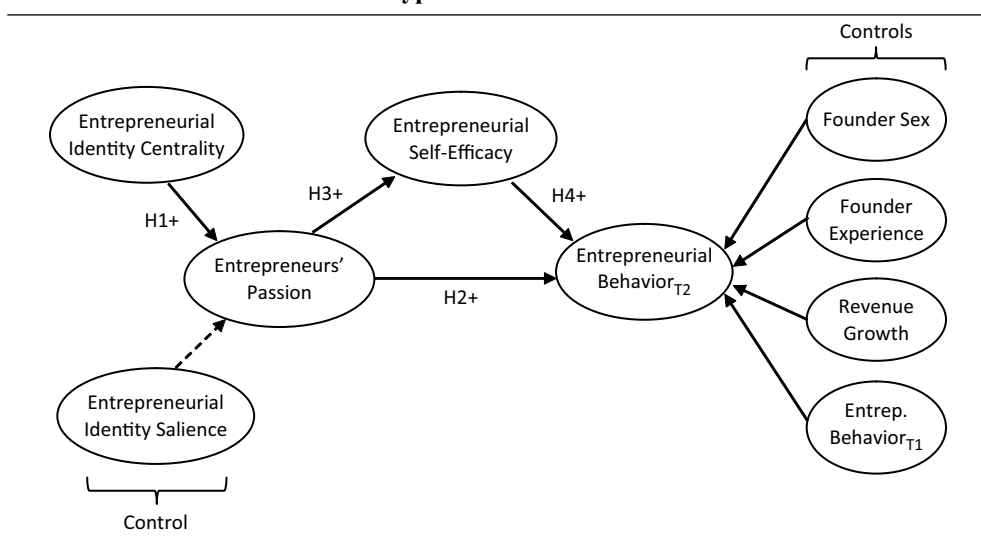
to help individuals and entrepreneurs better understand and manage their passion, we need more insight into the pathways and constructs through which passion impacts individuals themselves. We suggest that one important avenue of exploration is the explicit incorporation of the identity-relevant component of passion into our theoretical and empirical models. Most extant research examining ties between passion and behavior among entrepreneurs has assumed the identity importance of the target of passion (Cardon et al., 2009) rather than explicitly theorizing about or measuring it. Further examination of the relevance of identity to the experience and effects of passion is needed.

We begin to address these needs by drawing from existing theoretical work concerning passion in general (Vallerand et al., 2003) as well as entrepreneurial passion (Cardon et al., 2009) specifically. We integrate these theoretical frames with tenets from identity theory (Stryker, 1968; Stryker & Burke, 2000) to develop a model of the specific identity factors that may influence an entrepreneur's passion, and we propose the pathways through which that passion could subsequently drive entrepreneurial behavior. We then test our model using a sample of individuals actively engaged in the practice of entrepreneurship. As such, we provide an empirical look into the psychological mechanisms of passion among entrepreneurs.

This study makes important contributions to both social psychological and entrepreneurship research. First, we expand understanding surrounding the holistic nature of passion by integrating it with identity theory. In their comprehensive *Journal of Management* yearly review article concerning entrepreneurship research across different disciplines, Ireland and Webb (2007) contend that studying entrepreneurial identities and identity theory may offer exciting new insights into the process of entrepreneurship. We take up their call in our study by developing a theoretical model concerning entrepreneurial identities and passion among entrepreneurs and then testing that model empirically. An identity theory lens provides useful insights into where passion might emerge and what factors play a role in influencing its growth. Though previous scholars have posited that identities may influence passion (Cardon et al., 2009; Vallerand et al., 2007), work exploring the specific links between identity and passion has yet to be undertaken. Identities are not simple, monolithic constructs. They are composed of many intricate factors, and in this study we theorize how the component of centrality may be one of the key identity elements that influences passion. By analyzing the behavior of individual entrepreneurs, we provide useful insights for future research into the identity factors residing within the self-concept that might be responsible for the growth or decay of passion. Even though our study concentrates on identities and passion among entrepreneurs versus passion in general, the linkages driving these relationships are posited to be consistent across other nonentrepreneurial contexts and thus may also have implications for identity research in general.

The second contribution concerns the mechanisms through which entrepreneurs' passion influences individual behavior. Although work by others ties entrepreneurial passion to venture growth, at least indirectly (Baum & Locke 2004; Baum et al., 2001), scholars have yet to test these links with respect to individual entrepreneurial actions, a key component of the study of entrepreneurship (McMullen & Shepherd, 2006). We take a first tentative step toward bridging this gap and integrate self-efficacy and passion into our explanation of entrepreneurial behavior. Numerous authors have argued that self-efficacy has a profound impact on entrepreneurs (Baum & Bird, 2010; Hmieleski & Corbett, 2008). We extend work

Figure 1
Hypothesized Model



Note: Solid lines indicate paths proposed to be significant; the dashed line indicates the path proposed to be nonsignificant. H = hypothesis; T1 = Time 1; T2 = Time 2.

in this arena by proposing mechanisms through which entrepreneurs' passion might interact with entrepreneurial self-efficacy and how both might relate to entrepreneurial behavior. As such, we develop a more intricate view of the pathways through which entrepreneurs' passion acts to influence individual entrepreneurs. Figure 1 depicts our theoretical model for the influences of entrepreneurial identities, entrepreneurial self-efficacy, and passion among entrepreneurs on individual behaviors.

In the sections that follow, we define passion and review extant work on passion among entrepreneurs as well as research concerning identity theory. Next, we extend identity theory into the realm of entrepreneurship in order to explore the connections between entrepreneurial identities and entrepreneurs' passion. We then integrate these concepts into a model of entrepreneurial behavior involving entrepreneurial identities, entrepreneurs' passion, and entrepreneurial self-efficacy. Finally, we present our empirical study and results that support this model and offer a discussion of our findings.

Theory and Hypotheses

Defining Passion

Vallerand et al. (2003) define passion as a strong inclination toward an activity that people like and that they find important. Philippe et al. (2010) define passion simply as a strong

desire to engage in certain activities. Cardon et al. (2009) conceptualize entrepreneurial passion as intense positive feelings related to the entrepreneurial activities that are meaningful and salient to the self-identity of the entrepreneur. We draw from the work of all these scholars to define an entrepreneur's passion as a strong, positive inclination toward entrepreneurial activities. Given our interest in passion situated in the entrepreneurial context, we simultaneously attempt to confine our definition of entrepreneurs' passion to positively valenced inclinations focused upon activities specific to entrepreneurship yet still emphasize the intensity of its force.

In defining passion as a strong inclination, we follow the standard set by social psychologists (e.g., Philippe et al., 2010; Vallerand et al., 2003) and categorize passion as a motivational construct. It is important to note that although passion is related to motivation, it is still a separate construct. Whereas motivation encompasses a broad array of psychological forces inciting individuals to exert effort (Brehm & Self, 1989; Gatewood, Shaver, Powers, & Gartner, 2002), passion refers more specifically to intense, positive inclinations aimed at specific tasks. Vallerand et al. (2003) demonstrate empirically that passion impacts, but is separate from, both intrinsic and extrinsic motivation as well as other constructs such as flow, positive affect, and negative affect. Even though we focus on passion among entrepreneurs in this study, we acknowledge that the experience of passion is not likely to be confined to only those individuals engaged in starting new ventures. As Vallerand (2008) and his colleagues have shown, passion may be experienced by many different types of people, from athletes to artists to gamblers.

That said, the passion each of these types of individuals experience is different from one another because passion is a domain-specific motivational construct (Chen et al., 2009). Passions must have targets, and those targets are typically related to certain activities. To the extent that activities differ across domains, so does one's passion. For example, a musician's passion for practicing the violin in a quest to perfect playing a certain musical composition is different from an entrepreneur's passion to work long hours to overcome ever-changing obstacles standing in the way of one's business success. Both involve perseverance, but one type of passion involves repetition in the search of perfection, whereas the other involves dogged determination and adaptation to succeed amid a dynamic environment (Baron, 2008; Busenitz et al., 2003). In this regard, passion is comparable to other domain-specific constructs like self-efficacy. Entrepreneurial self-efficacy is simultaneously similar to other types of self-efficacy in the processes through which it influences behavioral intentions but is unique in its content and focus on the entrepreneurial context (McGee, Peterson, Mueller, & Sequeira, 2009). We argue that passion among entrepreneurs operates in a similar fashion: It resembles passion in general as a motivational construct but possesses unique characteristics because of the intense, dynamic, and challenging nature of the entrepreneurial context.

In building our model of identity, passion, and behavior, we draw from the theory of Vallerand and his colleagues (2003) because their studies are well established throughout social psychology as laying a foundation for a rigorous investigation of passion in general. Over the past 10 years, Vallerand and his colleagues have published at least 26 articles covering over 30 separate theoretical and empirical studies concerning the topic of nonromantic passion toward activities. His work has been used as a foundation for theoretical and empirical

studies in both management and entrepreneurial disciplines as well (cf. Perttula & Cardon, 2011). We integrate Vallerand's work with that of Cardon et al. (2009), as their theorizing lays the groundwork for a detailed examination of entrepreneurial passion specifically. It is important to note that both Vallerand et al.'s (2003) theory of harmonious passion as well as Cardon et al.'s (2009) theory of entrepreneurial passion discuss the need to integrate identity elements as keys to the motivational drive that emerges from passion. Although Cardon et al. (2009) are more explicit about tying the definition of entrepreneurial passion to entrepreneurial identities, Vallerand and his colleagues (Vallerand et al., 2003; Vallerand et al., 2007) have increasingly highlighted the importance of linking passion to identities. Identities are critical elements within both Vallerand's (2008) and Cardon et al.'s (2009) work on passion because identities provide relevance and motivational impetus for activities. Individuals are driven to verify important identities (McCall & Simmons, 1966), and this drive energizes the intensity inherent in passion. In this study, we explore the relationships between entrepreneurial identities and entrepreneurs' passion.

Passion Research in Entrepreneurship

To our knowledge, only three published articles have examined passion among entrepreneurs empirically, and none of these have investigated the links between entrepreneurial passion and individual behavior or outcomes. First, Baum et al. (2001) conceptualized entrepreneurial passion, or love for work, as one component amid three personality traits of entrepreneurs and analyzed the links between a composite of those traits and overall venture growth. Second, Baum and Locke (2004) went a step further and analyzed the individual effect of passionate love for work on venture growth. Taken together, Baum et al. (2001) and Baum and Locke (2004) found that passionate love for work does not impact venture growth directly but, rather, works through pathways mediated by constructs more proximal to individual behavior, such as motivation, goals, and self-efficacy. Third, Chen et al. (2009) evaluated the impact of perceived entrepreneurial passion, or intense displays of emotion, on venture capitalists' decisions to invest in new businesses. They found that venture capitalists were less influenced by passionate displays of emotion versus logical presentations supported by facts.

In all three studies across somewhat different conceptualizations of passion, the aim was to analyze the relationship between an individual's passion and either an organizational or other-focused outcome variable (e.g., venture capitalist assessments). None of these studies found a direct relationship between passion and individual outcomes, which is intriguing given theoretical claims in the literature concerning the importance of passion. Given that recent psychological research on passion by Vallerand and colleagues (2003, 2008) focuses almost exclusively on the relationships between passion and individual attitudes and behaviors, we use this foundation to push the analysis of entrepreneurs' passion down to the individual level of analysis. In addition, we suggest that one of the reasons direct relationships were not found in prior studies was because identity constructs were not explicitly considered, and we posit that entrepreneurial identities are key correlates capable of influencing the rise or fall of passion.

Entrepreneurial Identities

Following the work of Murnieks and Mosakowski (2006) and Cardon et al. (2009), we contend that entrepreneurs' passion is linked to entrepreneurial identities. Entrepreneurial identities are cognitive schemas of interpretations and behavioral prescriptions that allow individuals to understand what it means to be an entrepreneur (Hoang & Gimeno, 2010; Shepherd & Haynie, 2009b). According to social psychology and identity theory (Stryker, 1968; Stryker & Burke, 2000), all identities begin as social roles. These roles embody the behaviors and meanings attached to certain social categories like "entrepreneur" (or "doctor," "father," "teacher," etc.). Individuals learn what it means to be an entrepreneur by first viewing how society interprets that particular social role. Identities are formed when these roles are internalized by an individual into his or her cognitive schema (Cast, 2004; Stryker & Serpe, 1982). In other words, an entrepreneurial identity forms when an individual internalizes the external meanings associated with the entrepreneurial role and makes those meanings self-defining; the individual begins to call himself or herself an "entrepreneur." When an individual reflects on what it means to be an "entrepreneur," she or he references the meanings and behaviors associated with his or her entrepreneurial identity.

Undoubtedly, as with any identity, a certain degree of negotiation or back-and-forth deliberation occurs when an individual internalizes the meanings associated with the entrepreneurial role (Cerulo, 1997; Hoang & Gimeno, 2010). For example, perhaps some entrepreneurs believe that intimately understanding the technology of their new product is central to their role as founder, whereas others may feel such knowledge is not as critical as raising start-up capital for the new venture. Even though there may be some variance across societal members as to which exact behaviors are associated with any role, the important point is that whatever meanings characterize the role of entrepreneur are no longer held external to the individual but have now become part of the focal individual's self-concept as an entrepreneurial identity. As such, this identity motivates behavioral attempts to confirm or verify its existence (Burke & Stets, 1999; McCall & Simmons, 1966). Individuals possess a need to feel competent (Ryan & Deci, 2000), and verification of one's identities satisfies this need (Burke, 1991; Swann, Pelham, & Krull, 1989). Once identities are integrated into the self-concept, individuals are strongly motivated to act in a manner consistent with those identities (Burke & Reitzes, 1981; McCall & Simmons, 1966).

Entrepreneurial identities refer to individual sets of meanings and behaviors that define those individuals when acting in an entrepreneurial role (Hoang & Gimeno, 2010; Shepherd & Haynie, 2009b). Although not all entrepreneurial identities are likely to be characterized by different individuals with identical activities, there should be general agreement as to the overarching, if not specific, nature of these identities since society broadly agrees that entrepreneurs are associated with starting new business operations. Entrepreneurial identities are likely to be characterized by general meanings or actions related to the discovery, evaluation, and exploitation of opportunities (Shane & Venkataraman, 2000), as well as specific entrepreneurial actions like inventing new products and founding and developing new companies (Cardon et al., 2009; Cardon & Glauser, 2010).

Entrepreneurial Identity Hierarchies

Although entrepreneurs likely possess numerous identities in addition to an entrepreneurial one (Shepherd & Haynie, 2009a), they are unlikely to rank all these identities equally. Identity theorists contend that the identities comprising our self-concepts can be organized according to two different hierarchies: (1) centrality (McCall & Simmons, 1966; Rosenberg, 1979) and (2) salience (Stryker, 1980; Stryker & Serpe, 1994). *Centrality* refers to the relative importance that an individual places upon a focal identity compared to other identities. *Salience* refers to the readiness to act out a focal identity. McCall and Simmons (1966) discuss the hierarchy of centrality and are careful to separate the importance that individuals place on identities (centrality) from the readiness for enactment (salience). Although centrality and salience are separate hierarchies (more on that below), these hierarchies should not be viewed as competing explanations of identity organization but, rather, as complementary. In fact, hierarchies of centrality could be one driver of hierarchies of salience since the readiness to enact an identity is undoubtedly influenced by the importance an individual ascribes to certain identities (McCall & Simmons, 1966).

Stryker and Serpe (1994) empirically demonstrated, with a sample of 320 college students, that identity salience and centrality are separate and significant predictors of behavior. The key distinction between them arises from the fact that centrality requires the individual to ascribe importance personally to an identity, whereas salience does not, referring only to enactment readiness. As such, centrality demands conscious reflection by the individual; salience implies no such requirement. Salience is simply concerned with behavior and does not make assumptions about whether conscious thought concerning the identity preceded that behavior. We maintain the subtle conceptual distinction between these two hierarchies because many factors may drive certain identities to be enacted, or be salient, at certain points in time. Centrality is only one of these factors. Thus, even though these hierarchies may overlap in certain cases, it is also possible to see how they may differ (Stryker & Serpe, 1994).

Take the entrepreneurial identity as an example. Imagine an entrepreneur who runs a business out of the need to put food on the table for her family. This person may spend the majority of her day accomplishing tasks related to being an entrepreneur (i.e., the entrepreneurial identity is highly salient). Yet if you ask this person to describe what defines her as a person, or what is most important to her, she might say that being a parent who cares for her children is most important, because the entrepreneurial identity is less central than the parental identity. Though entrepreneurial identities may be both highly central and salient for certain individuals, this may not be true in all cases. Given the theoretical distinction between salience and centrality offered by other scholars (McCall & Simmons, 1966; Stryker & Serpe, 1994), we are careful to maintain that separation herein. More importantly, identity theorists such as Stryker and Serpe contend that “particularly useful, then, are analyses containing both salience and centrality” (1994: 19). Below, we discuss how each may be related to entrepreneurs’ passion.

Linking Identity Centrality to Entrepreneurs’ Passion

Scholars assert that passion is related to identities (Vallerand et al., 2007) and that entrepreneurial passion is related to entrepreneurial identities (Cardon et al., 2009; Murnieks,

2007; Murnieks & Mosakowski, 2006). However, because entrepreneurial identities residing within the self-concept are complex entities, the question remains as to what aspects of identity might influence passion among entrepreneurs. Building on the work above, we argue that entrepreneurs' passion is linked to entrepreneurial identity centrality. More specifically, as the importance of the entrepreneurial identity rises and falls for particular individuals, so will their passion.

Passion is tied to activities that are deemed important to the focal individual. As such, an individual feels passion toward activities, in part, because they are important. It stands to reason then that factors influencing the perceived importance of activities might also influence the passion experienced. Higher identity centrality indicates higher identity importance (Callero, 1985; Rosenberg, 1979) and, by extension, higher activity importance. Therefore, the activities associated with verifying central identities are likely to be viewed as more important to individuals than the activities associated with less central identities. Accomplishment of the activities associated with highly central identities leads to self-verification, which produces feelings of self-esteem (Burke & Stets, 1999; Erez & Earley, 1993) and positive affect (Burke, 2004; Stets, 2004) for the individual. Through self-esteem and positive affect, self-verification touches both the inclination and emotion associated with the experience of passion. Though we concentrate on the motivational aspect of passion in this study, the role of positive feelings in the passion construct should not be overlooked (Cardon et al., 2009; Vallerand et al., 2003). For example, identity theorists are quick to highlight the links between emotions and the centrality and salience of an identity (Stets, 2005; Stryker, 2004). Highly important identities are likely to be tied to more powerful feelings, which could reinforce the link between identity centrality and passion. Given these relationships, we contend that individuals are more likely to feel passionate about activities to the extent they are related to verification of a highly central identity.

Hypothesis 1: Entrepreneurs' passion is positively related to their entrepreneurial identity centrality.

We contend that entrepreneurial identity centrality, rather than salience, is linked to entrepreneurs' passion because the act of ascribing importance in centrality rankings is likely to involve an autonomous decision. In assigning centrality to identities, individuals work through a cognitive process where they reflect upon and think about whether or not the identity in question is important to the self-concept (Stryker & Serpe, 1994). Since this cognitive process allows an individual the freedom to choose which identities truly define him or her, the process is deemed autonomous. Because identity centrality decisions are autonomous, the identities ranking higher in centrality are more likely to be associated with the joyful feelings characteristic of passion.

Conversely, identity salience refers simply to readiness to enact identity-related behaviors. As depicted in our earlier example concerning entrepreneurs, people may enact salient identities without necessarily believing they are central to their self-concept. Hierarchies of salience can be affected by many extrinsic factors (such as needs of the moment or external pressures felt from other people) and, as such, are not necessarily autonomous in nature. They may be enacted because individuals feel compelled by other people to do so or feel that their own sense of self-worth is at jeopardy if they do not act accordingly. Motivations such as these are not aligned with the autonomous nature of passion, especially harmonious

passion (Vallerand et al., 2003). Thus, it is not clear what the relationship between salience and entrepreneurs' passion might be. Or, more precisely, it is not clear that the relationship between identity salience and entrepreneurs' passion is likely to be consistent across most entrepreneurs, given their different inputs into identity salience. Following this line of logic, we argue that passion among entrepreneurs is more likely to be linked to identity centrality versus salience, and we anticipate no relationship between passion and identity salience. Although we do not propose this as a formal null hypothesis, we still consider identity salience to be an important control variable in any assessment of links between identity centrality and passion. This is consistent with work by identity theorists, who contend that tests of identity centrality should involve salience as well in order to account for variance across the constructs (Stryker & Serpe, 1994).

Linking Passion to Individual Entrepreneurial Behavior

Scholars have shown that a passionate love for work impacts venture growth (Baum & Locke, 2004; Baum et al., 2001) and have theorized that it leads directly to individual persistence (Chandler & Jansen, 1992), absorption (or flow [Csikszentmihalyi, 1990], where entrepreneurs are so caught up in their activities that they enter a flow-like state and lose all sense of time and their surroundings), and creative problem solving (Cardon et al., 2009; Zhou & George, 2001).

Concerning general harmonious passion and behavior, Vallerand (2008) and his colleagues have assembled a consistent body of evidence indicating that harmonious passion propels associated behavior. Across various different samples, they have demonstrated that higher levels of harmonious passion are significantly related to increased persistence or practice in behavior among musicians (Mageau et al., 2009), dramatic arts students (Vallerand et al., 2007), swimmers and skiers (Mageau et al., 2009), and basketball players (Vallerand et al., 2008). Vallerand et al. contend that these relationships emerge from the fact that harmonious passion stimulates a "major motivational force" (2007: 512) impelling behavior. As such, it delivers fuel and intrinsic energy to persistently engage in a meaningful activity. Cardon et al. (2009) similarly reaffirm this link between entrepreneurial passion and entrepreneurial behavior. They argue that increased entrepreneurial passion leads to greater entrepreneurial persistence because engagement in related tasks validates and bolsters the entrepreneurial identity. The positive feelings associated with entrepreneurs' passion and with fulfillment of the passionate activities serve to induce repeated engagement in a search for prolonged pleasant affect. Following the work of these researchers, we contend that at the individual level, entrepreneurs' passion should drive increased entrepreneurial behavior.

Hypothesis 2: Entrepreneurs' passion is positively related to their entrepreneurial behavior.

In addition to passion, scholars contend that entrepreneurial self-efficacy is a key element in driving entrepreneurial behavior (Boyd & Vozikis, 1994; Wilson, Kickul, Marlino, Barbosa, & Griffiths, 2009). Entrepreneurial self-efficacy refers to an individual's self-confidence in his or her ability to perform entrepreneurial roles and tasks successfully (Chen, Greene, &

Crick, 1998; Zhao, Seibert, & Hills, 2005). Wood and Bandura contend that self-efficacy can be bolstered by an individual's self-assessment of his or her physiological state (1989: 365). In these cases, individuals interpret their own feelings and arousal levels as indicators of their perceived self-efficacy. Negative feelings or tension convey vulnerability to poor performance, whereas positive arousal and pleasant feelings associated with a particular activity can hoist one's confidence in his or her ability to succeed at that activity. In a study of 229 entrepreneurs, Baum and Locke (2004) demonstrate that a passionate love of work is positively related to the individual self-efficacy of entrepreneurs. Following this reasoning, we contend that entrepreneurs' passion will also elevate entrepreneurial self-efficacy.

Hypothesis 3: Entrepreneurs' passion is positively related to their entrepreneurial self-efficacy.

High entrepreneurial self-efficacy is likely to lead to increased entrepreneurial behavior. Following the tenets of social cognitive theory (Wood & Bandura, 1989), higher self-efficacy expectations regarding individuals' capabilities to perform in a given context generally encourage them to act in that context, as they possess confidence (Bandura, 1997) that they can do so successfully. Regarding entrepreneurial self-efficacy specifically, numerous scholars demonstrate that elevated entrepreneurial self-efficacy leads to greater entrepreneurial intentions (Chen et al., 1998; Rauch & Frese, 2007; Wilson et al., 2009; Zhao et al., 2005). According to the theory of planned behavior (Ajzen, 1991), these elevated entrepreneurial intentions should impel increased entrepreneurial behavior (Shook, Priem, & McGee, 2003). It is not our intention to replicate the work of previous scholars concerning linkages between entrepreneurial self-efficacy and entrepreneurial intentions. Rather, we are more interested in entrepreneurial behavior in this study. Thus, stringing together the logic concerning self-efficacy and intentions, we predict that increased entrepreneurial self-efficacy should be positively correlated with increased entrepreneurial behavior.

Hypothesis 4: Entrepreneurs' self-efficacy is positively related to their entrepreneurial behavior.

Method

Sample

To test the hypotheses for this study, we sampled the population of entrepreneurs in the field for a large metropolitan area in the Midwestern United States. Following the typical sampling procedures employed by other scholars studying entrepreneurs (e.g., Cardon & Stevens, 2009; Hmieleski & Baron, 2009), we used the Dun & Bradstreet (D&B) selectory database as well as a local business registry to identify new ventures that were founded within the past seven years. These databases provided an initial tally of 1,866 firms. From this list, we excluded 905 businesses that were franchises, holding companies, and individuals who had incorporated themselves but were not actively working as entrepreneurs. In addition, we removed 36 firms older than seven years, and five firms where the original founder had left and the individuals listed in the database did not qualify themselves as entrepreneurs.

This left us with a final sample of 920 new ventures. Each of these ventures was contacted by phone or e-mail by the first author and asked to participate in the study. Of the 920 entrepreneurs, 321 did not respond to phone calls or e-mails, and 71 refused to participate in the study. For those who agreed to participate, a packet was mailed or e-mailed that contained our survey along with a cover letter and a prepaid business reply envelope. The design of this study was primarily cross-sectional, with the majority of the variables assessed at the time of the initial survey. Entrepreneurial behavior, the dependent variable in our study, was assessed longitudinally, both in the initial survey and also several months later. Of those who agreed to participate, 248 entrepreneurs returned surveys, 27 of which were excluded due to missing data. In total, 221 surveys were usable, resulting in a response rate of 24%. This response rate aligns with the average for mail surveys in the domain of entrepreneurship (Bartholomew & Smith, 2006) as well as for similar surveys of top management in entrepreneurial firms (Hmieleski & Baron, 2009). We examined nonresponse bias using *t* tests for the gender of the founder, firm age, and number of employees. In each case, the results were nonsignificant.

Demographic questions at the end of the administered survey confirmed that each respondent was a founder of his or her current firm ($n = 204$) or that the respondent had founded a firm prior to the one he or she was currently running ($n = 17$). We ran sensitivity analyses to determine whether excluding those participants who were not founders of their current firms altered our results. Since excluding them did not change the results, these individuals were retained for the analyses reported below. These participants included 168 males and 53 females, with an average age of 45 years. The highest educational degrees earned by participants included high school ($n = 5$), bachelor's degree ($n = 100$), master's degree ($n = 61$), doctoral degree ($n = 11$), and some other degree ($n = 44$). The mean age of the firms studied was 4.1 years, which aligns with research in this domain that claims the first six years of a new venture's existence are critical for development (Shrader, Oviatt, & McDougall, 2000).

Measures

Identity centrality. This variable was assessed by using Callero's (1985) five-item scale, modified to apply to the context of entrepreneurship. In Callero's (1985) original study, he used this measure to study the identities of blood donors. We replaced the words "blood donation" with "being an entrepreneur" (e.g. "Being an entrepreneur is something I frequently think about" and "Entrepreneurship is an important part of who I am"). We discarded one of Callero's (1985) original items ("Being an entrepreneur means more than just running my business") for content validity reasons, leaving us with a four-item scale in this study. We assert that this item does not address the self-ascribed importance associated with being an entrepreneur as assessed by the respondent. Self-ascribed importance is a key element in identity centrality (Stryker & Serpe, 1994). Respondents were asked to indicate the extent to which they agreed (1 = *strongly disagree*, 5 = *strongly agree*) with each item. This scale produced a Cronbach's coefficient alpha of .79 in the current study.

Identity salience. This variable was assessed using the protocol developed by Stryker and Serpe (1982, 1994). In this protocol, participants are asked how they would introduce themselves to different groups of people for the first time in different contexts. Specifically, participants are asked to list what one activity or identity they would use during an introduction if they wanted that other person to know who they really are. For this study, participants were asked what identity they would use to introduce themselves to a stranger in two different scenarios: (1) a party and (2) a speech about oneself to a class at a local college. Participants were given three lines to respond and were asked to rank the identities they would use to introduce themselves in order (from first to third). These data were coded in reverse order in terms of where the entrepreneurial identity was ranked. For example, if the participant said the entrepreneurial identity would be the first one used, it was coded as a 3; if it was the second one listed, it was coded as a 2; and if it was third, it was coded as a 1. If the entrepreneurial identity was not mentioned at all, the entry was coded as a 0. We only coded this entry 1, 2 or 3 if the words “entrepreneur” or “founder” were used. Respondents did not use any other words to describe the identity associated with starting a business. The correlation between these two questions concerning salience was .57 in this study, and the Cronbach’s coefficient alpha was .73.

Entrepreneurs’ passion. This variable was assessed by using the five-item scale for harmonious passion developed by Vallerand et al. (2003). Vallerand et al.’s (2003) passion scales have been used in over 30 studies (e.g., Mageau & Vallerand, 2007; Ratelle et al., 2004; Vallerand et al., 2007) and demonstrate high levels of internal consistency as well as predictive, discriminant, and external validity (Philippe et al., 2010). This scale was adapted to the context of entrepreneurship for this study. Example items in this scale include “For me, being an entrepreneur is a passion” and “I am completely taken with being an entrepreneur.” Respondents were asked to indicate the extent to which they agreed (1 = *strongly disagree*, 5 = *strongly agree*) with each item. Vallerand et al.’s (2003) version of the harmonious passion scale included two items that were dropped from this study for content validity reasons. The two items that were dropped were: “Being an entrepreneur allows me to live a variety of experiences” and “Being an entrepreneur allows me to live memorable experiences.” We determined that these items did not capture the nature of strong inclinations inherent to the passion of entrepreneurs. The Cronbach’s coefficient alpha of the scale employed in this study was .71, which compares favorably with results obtained using the same scale by Vallerand et al. (2010), Vallerand et al. (2007), and Vallerand et al. (2003).

Given that our definition of passion includes positive valence, we conducted exploratory analyses to determine the relationship between our measure of entrepreneurial passion and positive affect in this study. To do so, we administered the PANAS scale developed by Watson, Clark, and Tellegen (1988). Two 10-item scales measured the relative positive or negative affect associated with being an entrepreneur. The positive and negative affect items assessed included elements like feeling interested, excited, or proud (positive) and feeling irritable, afraid, or ashamed (negative). Participants were asked to indicate to what extent (1 = *not at all*, 5 = *extremely*) being an entrepreneur made them feel each of the 20 items across both scales. The positive and negative affect scales produced Cronbach’s coefficient

alphas of .91 and .86, respectively. Moreover, the positive affect scale produced a positive correlation with the entrepreneurs' passion scale (.55, $p < .05$), whereas the negative affect scale produced a negative correlation with the entrepreneurs' passion scale ($-.12$, $p < .08$). These correlations align with the findings of Vallerand et al. (2003) and provide support for the notion that the entrepreneurs' passion scale gauges positively valenced inclinations.

Entrepreneurial self-efficacy. This variable was assessed by using Zhao et al.'s (2005) four-item scale designed specifically to gauge entrepreneurial self-efficacy. Participants were asked to indicate their relative degree of self-confidence in their ability to perform certain tasks as entrepreneurs (e.g., identifying new business opportunities, creating new products or services, thinking creatively, and commercializing an idea). They were asked to indicate their confidence on a five-point scale (1 = *not very confident*, 5 = *very confident*). This scale produced a Cronbach's coefficient alpha of .78 in the current study.

Entrepreneurial behavior. This variable was assessed using two measures. The first measure asked participants to indicate how many hours in an average week they spent on activities related to being an entrepreneur (Kolvereid & Isaksen, 2006). This measure has been used across a wide variety of studies to assess the impact of various constructs upon behavior, including identity centrality (Stryker & Serpe, 1994) and passion (Philippe et al., 2010; Vallerand et al., 2003). Since it has also been employed to gauge entrepreneurial behavior specifically (Kolvereid & Isaksen, 2006), it was deemed appropriate for this study. The second measure asked participants to indicate on a five-item scale (1 = *not much*, 5 = *almost all my time*) how much of their available time they spent being an entrepreneur. This measure was added to provide a gauge of the relative amount of time entrepreneurs perceived they were devoting to their ventures. In the survey, we defined entrepreneurial behavior as those activities associated with founding and operating a new start-up business or early-stage venture.

In an attempt to mitigate common method bias as well as to attempt to establish the effect of the passion, identity, and self-efficacy variables on behavior, we assessed the behavioral measures longitudinally: at Time 1 (T1) they were assessed with the initial survey, and at Time 2 (T2) they were assessed between one and four months after administration of the initial survey. We used the Time 2 measure as the dependent variable in our study and the Time 1 measure as a control.

Control variables. Three additional control variables were included to account for possible sources of variation in the dependent variable: sex, experience, and perceived revenue growth when compared to the nearest competitor at the present time. Past works analyzing the effects of passion on individual behavior have controlled for certain demographic variables such as sex and experience (Chen et al., 2009; Vallerand et al., 2008; Vallerand et al., 2007). Moreover, in entrepreneurship, competition between new ventures is a salient variable for founders to consider (Covin & Slevin, 1989; Huyghebaert & Van De Gucht, 2004; Shepherd, 1999). Hence, we sought to control for possible sources of variation in individual entrepreneurial behavior that might affect the paths hypothesized in this study.

Results

Following the approach of Anderson and Gerbing (1988), we examined the measurement model before testing the hypothesized structural model. Structural equation modeling analyses were conducted using the Amos 6.0 program (Arbuckle, 2005) as well as the SPSS 14.0 software package. Means, standard deviations, and correlations for all variables are shown in Table 1.

Measurement Model

We conducted confirmatory factor analyses to assess the structure of the observed measures for entrepreneurial identity centrality and identity salience, entrepreneurs' passion, entrepreneurial self-efficacy, and entrepreneurial behavior. First, to verify distinctiveness between entrepreneurial identity centrality and salience, we conducted confirmatory factor analysis in Amos. As expected, this factor separated significantly into two distinct constructs ($\Delta\chi^2 = 72.3$, $\Delta df = 1$, $p < .01$). We also conducted confirmatory factor analyses on entrepreneurial identity centrality, salience, and entrepreneurs' passion. As expected, these factors separated significantly into three distinct constructs ($\Delta\chi^2 = 116.3$, $\Delta df = 3$, $p < .01$).

We proceeded to assess the fit of the measurement model in Amos via the five latent variables: entrepreneurial identity centrality, entrepreneurial identity salience, entrepreneurs' passion, entrepreneurial self-efficacy, and entrepreneurial behavior. Although the chi-square for the five-factor model was significant ($\chi^2 = 178.9$, $df = 109$, $p < .01$), its fit indices were acceptable (comparative fit index [CFI] = 0.94, incremental fit index [IFI] = 0.94, root mean square error of approximation [RMSEA] = 0.05, standardized root mean square residual [SRMR] = 0.06) and met the goodness-of-fit criteria suggested by Hu and Bentler (1999). Importantly, each indicator's loading on the appropriate latent variable was significant ($p < .01$). Moreover, the five-factor model fit the data significantly better than a single-factor model ($\Delta\chi^2 = 438$, $\Delta df = 10$, $p < .001$), providing evidence that common method variance did not account for the observed relationships (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Tests of Hypotheses

Given the acceptable fit demonstrated by the measurement model, we proceeded to analyze the structural model depicted in Figure 2. Although the chi-square for the structural model was significant ($\chi^2 = 315.1$, $df = 198$, $p < .01$), its fit indices were acceptable (CFI = 0.92, IFI = 0.92, RMSEA = 0.05, SRMR = 0.08). Figure 2 shows the structural model we tested, along with standardized path coefficients.

Of the five control variables entered into the structural model, only one was significant: entrepreneurial behavior_{T1}. Entrepreneurial behavior measured at Time 1 was significantly and positively related to entrepreneurial behavior measured at Time 2 ($\gamma = .71$, $p < .01$). None of the other control variables were significantly related to entrepreneurial behavior_{T2}.

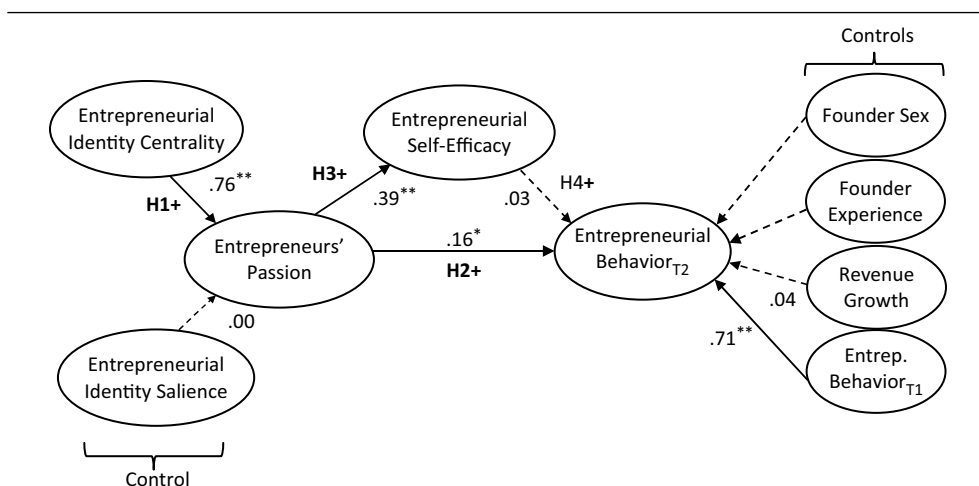
Table 1
Means, Standard Deviations, and Bivariate Correlations

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Entrepreneurial identity centrality	4.11	0.76										
2. Entrepreneurial identity salience	2.07	1.00	.25*									
3. Entrepreneurial passion	3.92	0.59	.52*	.16*								
4. Entrepreneurial self-efficacy	4.27	0.60	.16*	.05	.30*							
5. Entrepreneurial hours _{T1}	52.38	19.43	.18*	.09	.18*	.14*						
6. Available time _{T1}	3.86	.81	.24*	.14*	.21*	.14*	.57*					
7. Entrepreneurial hours _{T2}	51.02	19.52	.11	.01	.24*	.16*	.76*	.43*				
8. Available time _{T2}	3.88	.93	.22*	.06	.26*	.16*	.51*	.56*	.62*			
9. Founder sex	0.52	.86	.13	-.11	.06	.17*	.20*	.14*	.19*	.17*		
10. Founder experience	11.56	9.41	.09	.03	.20*	.14*	.13	.05	.12	.10	.14*	
11. Revenue growth	2.67	1.32	.04	-.03	-.03	.19*	.16*	.12	.16*	.11	.04	.06

Note: T1 = Time 1; T2 = Time 2.

* $p < .05$.

Figure 2
Structural Model Results



Note: Solid lines indicate significant paths; dashed lines indicate nonsignificant paths. Standardized regression weights are shown next to each path. H = hypothesis; T1 = Time 1; T2 = Time 2

* $p < .05$.

** $p < .01$.

Specifically, neither the sex of the founder ($\gamma = .06, p = .30$), the experience of the founder ($\gamma = .00, p = .96$), nor perceived revenue growth ($\gamma = .04, p = .45$) were significantly related to entrepreneurial behavior measured at Time 2. In addition, entrepreneurial identity salience

was not significantly related to passion ($\gamma = .00, p = .99$). The final model explained 60% of the variance in entrepreneurial behavior at Time 2.

Hypothesis 1 predicted that entrepreneurs' passion would be positively related to their entrepreneurial identity centrality. In our structural model, the relationship between entrepreneurial identity centrality and entrepreneurs' passion is significant ($\gamma = .76, p < .01$), providing support for Hypothesis 1. Hypothesis 2 articulated that entrepreneurs' passion would be a significant driver of entrepreneurial behavior. As depicted in the structural model in Figure 2, the path from entrepreneurs' passion to entrepreneurial behavior is positive and significant ($\gamma = .16, p < .05$), providing support to Hypothesis 2. Hypotheses 3 and 4 predicted that, respectively, entrepreneurs' passion would be positively related to entrepreneurial self-efficacy and entrepreneurial self-efficacy would be a driver of entrepreneurial behavior. In our structural model, the relationship between entrepreneurs' passion and entrepreneurial self-efficacy is positive and significant ($\gamma = .39, p < .01$), but the path between entrepreneurial self-efficacy and entrepreneurial behavior is not ($\gamma = .03, p = .69$). Even though the relationship between entrepreneurial self-efficacy and behavior occurs in the predicted direction, the path coefficient did not reach statistical significance. Taken together, these results provide support to Hypothesis 3 but not to Hypothesis 4.

Discussion

Entrepreneurial identities and entrepreneurs' passion drive behavior. In this study, we shed light on the role that entrepreneurial identities play in fueling passion among entrepreneurs, and furthermore, we examine how that passion influences the actions of individual entrepreneurs. Structural equation modeling of survey responses from individuals working in the field as active entrepreneurs yields intriguing results. It appears that individuals who hold the entrepreneurial identity as more central and important to themselves experience greater levels of passion. In turn, we also find that entrepreneurs' passion possesses significant ties to entrepreneurial self-efficacy and entrepreneurial behavior. Overall, this is the first study of which we are aware that empirically tests a model that simultaneously investigates both the variables that could influence entrepreneurs' passion (identity centrality) and the relationship between passion and individual behavior.

Our research makes important contributions both to the burgeoning work surrounding passion in general and to the study of passion specifically among entrepreneurs. Even though research surrounding passion and its effects is emerging throughout the social psychology literature, scant empirical research exists concerning contributors to passion. Mageau et al. (2009) investigated certain processes likely to lead to the development of passion among musicians and determined that individual identification with certain activities can lead to passions associated with those same activities. As such, they concluded that identities are indeed linked to passion. Interestingly though, in their study they did not tease apart which particular aspects of identities might be driving results. We extend their work by explicitly testing for the relationship between identity centrality and passion versus the relationship between identity salience and passion. We find empirical evidence that identity centrality has a strong correlation with passion, whereas identity salience does not. Although our model and our hypotheses point toward a unidirectional relationship between entrepreneurial

identity centrality and entrepreneurial passion, in all likelihood, their influences are probably reciprocal. Namely, the passion that an individual entrepreneur experiences (or does not experience) during the entrepreneurial process could, in turn, affect the degree of importance that individual places on enacting the entrepreneurial identity in the future. Our research was cross-sectional in design rather than experimental, so these reciprocal loops could not be tested. Future research employing longitudinal designs could delve deeper into the interactive nature between entrepreneurial identity and entrepreneurial passion over extended periods of time. Our study offers a finer grained analysis of the precise linkages between entrepreneurial identities (operationalized through identity centrality and salience) and entrepreneurs' passion, which lays the groundwork for future explorations of the social-psychological drivers of entrepreneurial behavior.

We also contribute to the literature on entrepreneurial passion (Cardon et al., 2009), where scholars have posited that passion may be a key element fueling the behavior of individual entrepreneurs (Cardon, Zietsma, Saparito, Matherne, & Davis, 2005). Unlike previous studies that link individual passion to venture performance indirectly (Baum & Locke, 2004; Baum et al., 2001), this study makes the unique contribution of providing a conceptually rich model of linkages of entrepreneurial passion to both individual behavior and to entrepreneurial self-efficacy. In doing so, we lend confirmation to the theorizing of numerous scholars who posit that entrepreneurial passion directly impacts individual entrepreneurial behavior (e.g., Cardon et al., 2009). Whereas Baum and Locke (2004) showed that the path between passion and outcome variables like venture performance was not direct, we demonstrate that entrepreneurs' passion can have an impact on individual behavior. As such, our results provide an important confirmation of what has so far been theoretical conjecture, that entrepreneurs' passion is significantly related to entrepreneurial behavior. More importantly, we provide insights into the relevance of identity centrality as it impacts the development of passion and, later, entrepreneurial behavior.

These linkages between entrepreneurial identity centrality, passion, and behavior are important because they offer intriguing avenues for further exploration into domains such as deliberate practice among entrepreneurs.¹ Deliberate practice refers to highly structured, effortful activities designed to improve individual performance (Ericsson, Krampe, & Tesch-Romer, 1993). Scholars have posited that development of expertise and success in the entrepreneurial domain can be linked to deliberate practice (Read & Sarasvathy, 2005; Smith, Mitchell, & Mitchell, 2009; Unger, Keith, Hilling, Gielnik, & Frese, 2009). Whereas deliberate practice is linked to expert performance in general, psychologists point out that deliberate practice is not inherently enjoyable (Ericsson & Charness, 1994) and as such requires some other factor to motivate engagement. Passion could be one factor that motivates this engagement among entrepreneurs. Vallerand et al. (2007) provide preliminary empirical evidence for ties between passion and deliberate practice among dramatic arts students, and we provide confirmation of the link between passion and entrepreneurial behavior. Integrating these two streams, we argue that a foundation exists from which to posit that passion may act as one of the key catalysts motivating the pursuit of deliberate practice among entrepreneurs. Future research could explore this idea that perhaps passion energizes individual entrepreneurs to engage in the necessary and arduous tasks required to germinate successful ventures.

Our empirical results also extend current work surrounding entrepreneurial self-efficacy. In a recent review, McGee et al. (2009) surveyed 25 empirical articles published in the previous 10 years specifically concerning entrepreneurial self-efficacy. In the majority of the empirical articles surveyed by McGee et al. (2009), the possible sources of entrepreneurial self-efficacy were unexamined. We contribute to this stream of work by demonstrating the positive correlation between passion and entrepreneurial self-efficacy and by suggesting that entrepreneurs' passion may be an important driver of increased entrepreneurial self-efficacy.

We also contribute to the literature on self-efficacy in entrepreneurship through our puzzling finding that the relationship between entrepreneurial self-efficacy and entrepreneurial behavior was not confirmed in our study. A wealth of entrepreneurship literature considers entrepreneurial self-efficacy to be a key predictor of entrepreneurial intentions (Boyd & Vozikis, 1994; McGee et al., 2009). Given the well-established relation between intentions and behavior (Ajzen, 1991), we expected entrepreneurial self-efficacy to be related to entrepreneurial behavior. In this sample, it is possible that our particular measure of entrepreneurial behavior (hours spent enacting entrepreneurial activities) may have played a role in the lack of a finding. Using a similar measure of entrepreneurial behavior, Kolvereid and Isaksen (2006) also failed to find a significant link between entrepreneurial self-efficacy and behavior. When we consider why this may have occurred, it is possible that entrepreneurs who feel particularly confident in their abilities do not feel a need to devote as much time to entrepreneurial activities as individuals who feel less confident. In addition, the intentionality literature tends to predict the probability of enactment of a given activity, not necessarily sustained enactment over lengthy periods of time. Our measure of hours spent enacting the entrepreneurial activity over an average week may have encompassed a longer time span than the intentionality literature typically considers. Moreover, affect literature substantiates the proposition that individuals experiencing positive affect may be more prone to devote less effort to a given task (Seo, Bartunek, & Feldman Barrett, 2010; Warr, 2007), due to the fact that positive feelings convey satisfactory progress and conditions and, as a result, imply that additional effort is not required (Carver & Scheier, 2011). In contrast, negative feelings imply a problematic state that requires attention. Perhaps the positive feelings associated with higher self-confidence in the entrepreneurial realm encouraged those individuals to "coast" (Carver & Scheier, 2011), whereas individuals with lower self-confidence and thus more negative feelings felt the need to work harder. This represents an interesting avenue to explore more deeply going forward.

Despite suggesting the relationships noted above and possible extensions to extant entrepreneurship research, our study has limitations. Even though passion among entrepreneurs is a significant factor in predicting behavior, the amount of variance in behavior predicted in our model is only 60%. This indicates that other variables that influence behavior are still unspecified. Related to this, our measure of entrepreneurial behavior was limited in the sense that it gauged the amount of hours worked in a typical week by the respondents. Although this measure has been used in many studies analyzing behavior tied to entrepreneurship or passion (e.g., Kolvereid & Isaksen, 2006; Vallerand et al., 2003), we acknowledge that there are other types of entrepreneurial behavior that play critical roles in the entrepreneurial process, like creativity or opportunity recognition, that our measure failed

to capture. In this study, because of the nascent status of this stream of research and the desire to make our study comparable to other research conducted in different contexts, we focused on using a measure of behavior that had been employed previously. In addition, because our empirical design was primarily cross-sectional rather than experimental or fully longitudinal in nature, it is difficult to draw conclusions about causality, specifically about whether or not entrepreneurial identities are truly antecedents of entrepreneurs' passion. We attenuate this concern with respect to the relationship between passion and behavior by using a short longitudinal design, but this leaves room for additional studies to explore this relationship more deeply. Moreover, it is difficult to verify the exact direction of any path when using structural equation modeling. Although our model was theoretically derived and three of the four hypothesized paths were supported, and alternate models with paths reversed do not provide a superior fit to the data, future research could examine the causal directions of each of these relationships in greater detail.

Another typical concern for cross-sectional studies that rely on self-report data is common method variance. We examined our data using the approach of Elias (2009) to help alleviate these concerns. Common method variance can be a concern whenever a cross-sectional design is employed in concert with self-report data, as was used in this study. To address this, we assessed the fit of our theoretically derived measurement model as compared with a model where all the indicators loaded onto a single factor (Podsakoff et al., 2003). As the fit of the former was significantly better than the fit of the latter, this provides evidence that common method variance did not account for the observed relationships. Next, we inspected the correlation matrix (Table 1) to determine if a baseline level of significant correlations existed (Elias, 2009). No such level existed, and not all the correlations are significant, providing additional evidence that common method variance was not a significant problem.

Finally, there is an opportunity for additional research that expands the concept of passion to include both harmonious and obsessive passion. In Vallerand et al.'s (2003) original development of the construct of passion, they delineate two different types: harmonious and obsessive. Whereas harmonious passions are engaged of free volition, obsessive ones create compulsion among individuals to indulge. In this study, we focused primarily on harmonious passion, where identity centrality is linked to entrepreneurs' passion because centrality implies conscious decision making concerning the importance of an identity. This conscious act of ascribing importance to identities aligns with the autonomous nature of harmonious passion. Therefore, it makes sense that individuals feel harmonious passion for activities associated with identities that they have designated as important because both elements involve some degree of autonomy in their selection. Yet not all passions experienced by entrepreneurs may be harmonious. It would be interesting to conduct additional studies to view the role that obsessive passion plays in entrepreneurship. Specifically, it would be enlightening to see if identity salience is linked to obsessive passions. Many entrepreneurs may feel compelled to pursue entrepreneurship out of any number of internal or external contingencies (fear of failure, fear of embarrassment, need to justify the decision to leave one career and be successful as an entrepreneur, etc.). For those individuals who are obsessed with entrepreneurship, perhaps the linkage between identity and passion follows the construct of salience versus centrality.

Even though there are many more avenues to be explored, our results provide an interesting first empirical look into the antecedents and individual consequences of passion among entrepreneurs. We find support for a relationship between entrepreneurial identity centrality and entrepreneurs' passion and also for the relationships between passion and entrepreneurial self-efficacy and entrepreneurial behavior. We hope our work opens up a fruitful dialogue about the many pathways through which passion is fueled and may in turn light the fires of entrepreneurial behavior in the entrepreneurial process.

Note

1. We wish to acknowledge and thank one of the anonymous reviewers for pointing out this relationship.

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