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Extending Social Cognitive Career Theory into the Entrepreneurship Domain: Entrepreneurial Self-Efficacy's Mediating Role Between Inputs, Outcome Expectations, and Intentions

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EXTENDING SOCIAL COGNITIVE CAREER THEORY INTO THE ENTREPRENEURSHIP DOMAIN: ENTREPRENEURIAL SELF-EFFICACY'S MEDIATING ROLE BETWEEN INPUTS, OUTCOME EXPECTATIONS, AND INTENTIONS

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The E. J. Ourso College of Business Administration
Rucks Department of Management

by
Eric W. Liguori
B.S., Florida State University, 2002
M.B.A., University of South Florida, 2004
August 2012

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ABSTRACT

Self-efficacy is among the most important constructs in recent entrepreneurship literature (Forbes, 2005), and is central to our understanding of entrepreneurial phenomena. Accordingly, it often captures the attention of policy makers, community leaders, educators and entrepreneurship advocates (e.g., Shook & Bratianu, 2010; Descant, 2010; McCollister, 2011; Chapman, 2011). In this dissertation, I seek to expand upon the extant knowledge of self-efficacy research by undertaking three specific objectives. First, I apply a social cognitive career theory (Lent, Brown, & Hackett, 1994) to entrepreneurship, and posit that this is a more robust theoretical framework to study individual entrepreneurial activity. Second, I explore self-efficacy as it relates to entrepreneurial intentions, beginning to reconcile the unique roles of both domain-specific and generalized self-efficacy. Lastly, I explore how a new set of contextual variables (university orientation toward teaching, university focus on entrepreneurship, and student exposure to faculty) impact individual entrepreneurial career aspirations.

CHAPTER I: THE DISSERTATION TOPIC

Introduction

The heart of entrepreneurship revolves around the linkages that connect existing opportunities (viz., those awaiting discovery) with entrepreneurial individuals seeking opportunity exploitation (Venkataraman, 1997). Given entrepreneurship is the investigation of how opportunities are discovered, evaluated, and exploited and by whom (Venkataraman, 1997; Shane & Venkataraman, 2000), the scope of the field can be considered to include the origins of opportunities, the individuals and firms who exploit them, and processes by which exploitation occurs (Shane & Venkataraman, 2000). Thus, research into entrepreneurship typically revolves around three research questions: "(1) why, when and how opportunities for the creation of goods and services come into existence; (2) why, when and how some people and not others discover and exploit these opportunities; and (3) why, when and how different modes of action are used to exploit entrepreneurial opportunities" (Shane and Venkataraman, 2000, p. 218). Critical to our understanding of entrepreneurial behavior are both individual characteristics and situational factors (Reynolds, 1991; Hills & Singh, 2004; Davidsson, 2008). This is largely due to the fact that under the same situational circumstances, not all individuals will behave identically. Thus, individual and environmental differences constitute an integral part of entrepreneurship research (Johnson, 1990; Stewart, Watson, Carland, & Carland, 1998; Hisrich, Langan-Fox, & Grant, 2007; Frese, 2009), central to the stimulation of entrepreneurial activity.

Entrepreneurial activity is widely considered to be a major determinant of economic development and growth (Schumpeter, 1934; Stevenson & Sahlman, 1986; Birch, 1987; Mazzarol, Volery, Doss, & Thein, 1999; Baumol & Strom, 2007). Globally, entrepreneurial activity contributes to economic performance by introducing innovations and fostering

competition and rivalry (Wennekers & Thurik, 1999; Carree & Thurik, 2003; Wong, Ho, & Autio, 2005). Moreover, entrepreneurial activity aids in meeting other societal needs, including improving quality of life (Zahra, Rawhouser, Bhawe, Neubaum, & Hayton, 2008), enhancing public school systems (Peterson, 2010; Weaver et al., 2012), increasing philanthropy (Isenberg, 2011), and reducing dependency on natural resources (Sine & Lee, 2009). Past research posits situational and personality measures explain economic activity, and specifically entrepreneurial behavior (Reynolds, 1991). Yet, these measures fail to explain the majority of variance in entrepreneurial activity, necessitating another approach. Whereas intention-based models (e.g., Ajzen, 1991; Krueger, 1993) do help in addressing this deficiency, entrepreneurship scholars still lament for more and better models to help address the intricacies of the relationships that exist. In this dissertation I begin to address these issues by refocusing the study entrepreneurial intentions using an alternate, robust theoretical framework grounded in social cognitive theory. Given entrepreneurial intentions are a driving force at the center of venture emergence (Cha & Bae, 2010), and the formal start of the venture creation process (Lee & Wong, 2004; Shook, Priem, & McGee, 2003), this is a reasonable place to begin. In the next section I offer a detailed explanation of my research agenda.

Contribution of the Dissertation

In this dissertation I contribute to the entrepreneurship literature in several ways. First, while social cognitive theory (SCT; Bandura, 1986, 1999) is widely accepted and used in the OB literature (e.g., Latham & Pinder, 2005; Latham, 2007), its use in the entrepreneurship domain, especially in the study of entrepreneurial self-efficacy, entrepreneurial intentions and entrepreneurial behavior, is scarce. Perhaps this is in part because Ajzen's theory of planned behavior has dominated most past work in this area (e.g., Krueger, Reilly, & Carsrud, 2000;

Kolverid & Isaksen, 2006), despite criticisms that the theory is overly simplistic or flawed (e.g., Munro, Lewin, Swart, & Volmink, 2007). I make a case that social cognitive career theory (SCCT; Lent et al., 1994, 2002), a SCT-informed theory, is an alternative theoretical approach more appropriate for studying individual entrepreneurial cognition and behavior. This extension of SCCT into entrepreneurship represents an important step forward, given both social cognitive theory and career-based views of entrepreneurship are widely accepted in the literature (cf., Carter, Gartner, Shaver, & Gatewood, 2003; Douglas & Shepherd, 2002). In sum, I posit that SCCT provides a robust framework that is applicable to the field of entrepreneurship, and seek to make a theoretical contribution by solidifying the applicability and use of SCCT in entrepreneurship research.

Second, I expand on SCCT's conceptualization of environmental factors, thus offering the first exploration of how a new set of variables (university teaching orientation, university focus on entrepreneurship, and student exposure to faculty) impact entrepreneurial self-efficacy, outcome expectations, and intentions. Because contextual factors are useful and education and training variables are under researched (Nabi, Holden, & Walmsley, 2006), further exploration is prudent. Moreover, the pedagogical implications that will result are of particular interest to entrepreneurship educators (e.g., Lee & Peterson, 2000; Lee, Chang & Lim, 2005; Neck & Greene, 2011), especially given the primary goal of entrepreneurship education is to produce more and better entrepreneurs (Ronstadt, 1985).

Third, I seek to further clarify the relationship between generalized self-efficacy (GSE) and entrepreneurial self-efficacy (ESE) by conceptualizing them as distinct contributors to the development of entrepreneurial intentions. Some authors fail to distinguish between these two constructs, whereas others note the differences and proceed to argue for the superiority of one

over the other. Within entrepreneurship there is a lack of research employing both generalized and domain specific self-efficacy simultaneously, yet SCCT posits that GSE is perhaps a key determinant of domain specific self-efficacy. By employing the SCCT framework, I attempt to reconcile the relationship between the two by illustrating both make a distinct contribution to the development of entrepreneurial intentions.

Fourth, I make a generalizability contribution to the literature via the use of a culturally and geographically diverse dataset and sound psychometric measures. While other studies use multi-country samples to study self-efficacy and entrepreneurial intentions, none that I reviewed employ both highly diverse data and sound psychometric measures thus calling into question both the accuracy of the findings (Davidsson, 2008) and the extent these findings represent the broader population as a whole (Blair & Zinkhan, 2006). For example, Gaicomin et al. (2010), Wilson, Kickul, & Marlino (2007) and Krueger (1993) operationalize entrepreneurial intent with non-validated single-item measures, an approach that many methodologists advocate against (Loo, 2002). Other scholars measure entrepreneurial intention with multiple items developed ad hoc (e.g., Autio, Keeley, Kolfsten, Parker, & Hay; 2001), thus not conforming to generally accepted best practices in scale development given they violate the core assumption of standardization that is necessary to properly assess latent constructs (see Netemeyer, Bearden, & Subhash, 2003, pp. 2-4 for a full discussion of standardization), thus violating the .

Definitions of Key Terms

Here I provide definitions for critical terms used in Chapter 2 (the literature review) and Chapter 3 (theory and hypotheses):

Self-Efficacy. Self-efficacy is defined as "beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Wood & Bandura, 1989: 408). As a construct, self-efficacy is conceptualized as domain specific (e.g., efficacy beliefs relating to a given context) or generalized (e.g., optimistic self-beliefs to cope or function across a wide array of life experiences; Jerusalem & Schwarzer, 1992; Schwarzer & Jerusalem, 1995). The model presented in Chapter 3 considers each conceptualization to be a distinct construct.

Entrepreneurial self-efficacy. Entrepreneurial self-efficacy is domain specific self-efficacy in an entrepreneurial context, and is defined as one's self confidence that they possess the requisite skills necessary to succeed in launching a venture (Wilson et al., 2007).

Outcome Expectations. Outcome expectations are "...personal beliefs about the consequences or outcomes of performing particular behaviors" (Lent et al., 2002, p. 262). In concert with this definition, I conceptualize outcome expectations as one's belief about the 'consequences and outcomes' of behaving entrepreneurially in the present study.

Intentions. Intentions are conceptualized as one's persistence to engage in a given activity or effect a given future outcome (Bandura, 1986). In the entrepreneurial sense, entrepreneurial intentions (EI) are a conscious state of mind that directs attention, experience, and action towards the creation of a venture (Bird, 1988, 1992; Gartner, 1985; Learned, 1992).

Summary of the Remaining Chapters

This chapter introduces the dissertation topic, potential contributions, and key terms. Chapter 2 reviews the SCT, SCCT, entrepreneurial self-efficacy, and entrepreneurial intention literatures. By critically reviewing past conceptualizations of entrepreneurial intentions and self-

efficacy, Chapter 2 will further illustrate how SCCT better informs our understanding of these key constructs. Chapter 3 presents the theoretical model and the formal hypotheses I test in this dissertation. Chapter 4 outlines the sample, method and measures used to evaluate the aforementioned hypotheses, and results of the study. Chapter 5 presents the study results, and Chapter 6 offers a formal discussion, as well as implications, areas for future research, and limitations. Supporting documents are included as appendices.

CHAPTER II: REVIEW OF THE LITERATURE

Introduction

This chapter begins by reviewing the entrepreneurial intentions (EI) literature and providing rationale for why they are important phenomena of interest critical to our understanding of entrepreneurship. Then, past models used to explain EI are reviewed and discussed. Social cognitive career theory is then introduced and explained. A case is made for why past models of entrepreneurial intentions are inadequate, and why SCCT is a more appropriate theoretical lens to study entrepreneurial intention formation. Ultimately, this chapter not only provides a review of the entrepreneurial intentions literature, but also illustrates how applying SCCT is applicable and more robust than past approaches to studying entrepreneurial intention formation.

Entrepreneurial Intentions

Entrepreneurial intentions (EI) are a conscious state of mind that directs attention, experience, and action towards the creation of a venture (Bird, 1988, 1992; Gartner, 1985; Learned, 1992). Across a wide variety of domains intentions are critical to our understanding of the antecedents, correlates, and consequences of purposive behavior (Ajzen, 1987; Ajzen & Fishbein, 1980). Moreover, intentions are the single best predictor of any planned behavior (Ajzen, 2001, 2008; Armitage & Conner, 2001), including entrepreneurial behavior. The study of EI offers key insights into the venture creation process (i.e., what are the antecedents of venturing, and how do they influence the venture; Krueger & Carsrud, 1993). Insights in this regard are critical to our understanding of emergence, and emergence is a key economic agent for positive change (Baumol & Strom, 2007; Birch, 1987; Isenberg, 2011; Sine & Lee, 2009). In

essence, understanding entrepreneurial intentions is critical to our understanding of entrepreneurial behavior (Krueger, 2009) because without intention there is little reason to expect action (Lee & Wong, 2004). Not surprisingly, action is a critical element in much of the recent entrepreneurship literature (Klein, 2008; McMullen & Shepherd, 2006). Moreover, as mentioned in Chapter 1, EI are the central driving force of venture emergence (Cha & Bae, 2010), representing the formal start of the venture creation process (Lee & Wong, 2004; Shook et al., 2003) where key initial characteristics for new ventures are established (Bird, 1988; Katz & Gartner, 1988; Krueger & Carsrud, 1993). Thus, the factors that influence EI are of interest, and multiple models exist that attempt to explain these factors. In the next section the dominant intention models used to explain entrepreneurial intentions are discussed.

Existing Models of Entrepreneurial Intentions

While various models illustrate the entrepreneurial intention development process (e.g., Bird, 1988; Boyd & Vozikis, 1994; Davidsson, 1995; Mazzarol et al., 1999), two models emerge as dominant: Theory of Planned Behavior based models (TPB; Ajzen 1985, 1988), and the Shapero-Krueger model based on Shapero's conceptualization of the entrepreneurial event (SEE; Shapero, 1984; Shapero & Sokol, 1982; Krueger, 1993). Each is discussed in greater detail in the following paragraphs.

Theory of Planned Behavior (TPB)

The theory of planned behavior is one of the most influential and popular conceptual frameworks for the study of human action (Ajzen, 2001; Yousafzai, Foxall & Pallister, 2010). It is well received both theoretically (Sutton, 1998; Notani, 1998) and empirically (cf., Armitage & Connor, 2001; Cooke & Sheeran, 2004; Cooke & French, 2008; Schwenk & Möser, 2009). Past

research supports TPB's ability to consistently predict intentions and behaviors (e.g., Armitage & Conner, 2001), and TPB is commonly applied in disciplines concerned with understanding human intention or behavior, including: health behaviors (Ajzen, Albarracín, & Hornik, 2007), consumer behavior (Ajzen, 2008; Dan & Xu, 2011), high school completion (Davis, Ajzen, Saunders, & Williams, 2002), academic misconduct (Stone, Jawahar, & Kisamore, 2010), voting behavior (Fishbein & Ajzen, 1981), job pursuit behavior (Schreurs, Derous, Van Hooft, Proost, & De Witte, 2009), weight loss intentions (Schifter & Ajzen, 1985), and entrepreneurial intentions (Krueger et al., 2000; Schwarz, Wdowiak, Almer-Jarz, & Breitenecker, 2009).

Theoretically, TPB is based on the theory of reasoned action (TRA; viz., the idea that human social behavior is primarily under volitional control and is thus predictable from intentions alone; Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980, 2005). TRA posits that intentions capture the motivational factors impacting behavior, indicating how hard individuals will persevere and how much effort they will exert to perform the behavior. These intentions take the form of behavioral dispositions, which increase the likelihood that the individual will attempt to translate the intention into action. If the behavior is purely under volitional control, the attempt will result in the behavior. Under the tenants of TRA, factors such as personal demographic characteristics and personality traits are assumed to not directly impact behavior; rather the assumption is they are related to behavior if and only if they influence TRA's behavioral determinants (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980, 2005).

According to TRA, intentions are a function of two determinants: attitude toward the behavior and subjective norm (see Figure 1). An attitude toward the behavior is personally held and is different than a general attitude (toward people, objects, organizations) in that it refers to "the individual's positive or negative evaluation of performing the particular behavior of

interest" (Ajzen, 1988, p. 117). Importantly, behavioral beliefs (i.e., the subjective likelihood a behavior will produce a given outcome) aggregate into a positive or negative attitude toward the behavior (Ajzen, 1988, 1991). A subjective norm, on the other hand, is the individual's perception of social pressure to perform or not perform a given behavior (Ajzen, 1988, 1991); essentially, it is a reflection of social influence. Subjective norms are formed based on aggregated normative beliefs, or beliefs about the normative expectations of others (Ajzen, 1988, 1991; Becker & Gibson, 1998). Combined, attitudes toward the behavior and subjective norms cumulatively form the individual's intention to engage in the specific behavior in question.

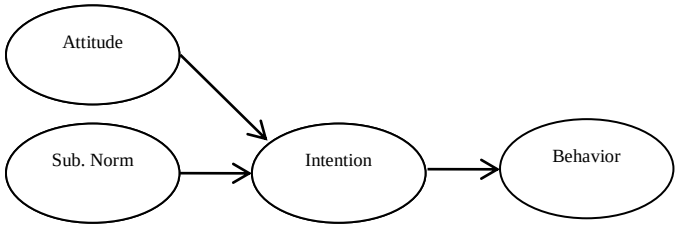

Figure 1: Theory of Reasoned Action[1]

While TRA is lauded for its intuitive and parsimonious approach to predicting behavior (Bagozzi, 1982), the idea that individuals do what they intend to do is not surprising and does little to aid in the understanding of human behavior. This is in part because TRA is limited by the assumption that behavior is purely under volitional control. Thus, TRA does not take into account the individual's ability to perform the behavior (Ajzen, 1988). In an attempt to resolve this issue, the TPB incorporates perceived behavioral control in addition to attitude toward the behavior and subjective norm (Ajzen, 1985, 1988; Ajzen & Madden, 1986; Schifter & Ajzen, 1985). Perceived behavioral control, defined as the individual's perception of ease or difficulty in performing the behavior, is formed by aggregating control beliefs, or beliefs about one's

[1] The copyright holder, Izek Ajzen, has granted permission for noncommercial use of this image on his website (http://people.umass.edu/aizen/tpb.diag.html).

ability to perform a behavior, and is assumed to be a reflection of past experiences and perceived future obstacles (Ajzen, 1988, 1991). By including PBC into the equation, TPB allows for the prediction of behavior in instances where incomplete volitional control may exist. It allows one to understand why despite favorable views of behavior and peer support individuals may still not act on intentions (e.g., why entrepreneurial intentions will not always result in entrepreneurial behavior; Boyd & Vozikis, 1994). Thus, inclusion of perceived behavioral control is a critical explanatory mechanism in the quest to understanding behavior. Figure 2 illustrates the full TPB model.

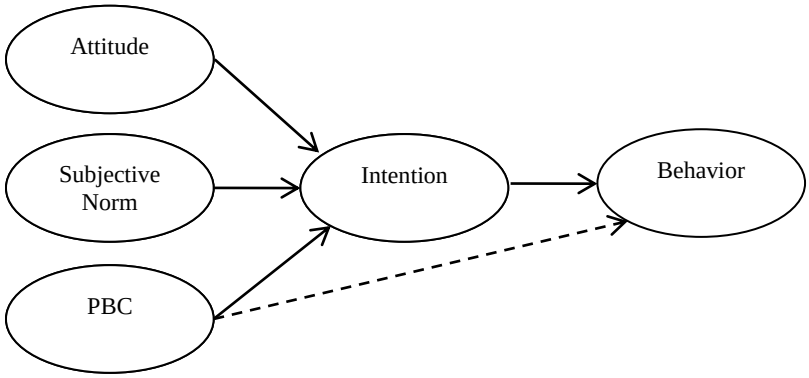

Figure 2: Theory of Planned Behavior[2]

Individuals hold many beliefs surrounding a given behavior, but at a given point in time only a limited number of beliefs are considered (Miller, 1956). TPB asserts that these limited 'salient' beliefs are integral to determining intention and behavior given they are not only tacitly engrained in one's mind but are also what first come to mind when one responds to a question (aka accessible beliefs; Ajzen, 1991; Ajzen & Fishbein, 2000; Higgins, 1996). TRA and TPB rely, then, on the principle of aggregation such that behavioral beliefs aggregate into favorable or unfavorable attitude toward the behavior, normative beliefs aggregate into perceptions of social pressure or subjective norm, and control beliefs aggregate into perceived behavioral control.

[2] The copyright holder, Izek Ajzen, has granted permission for noncommercial use of this image on his website (http://people.umass.edu/aizen/tpb.diag.html).

Thus, TRA and TPB assume that (a) people behave consistently with their attitudes and beliefs, and (b) it is possible to obtain accurate behavior predictions via assessment of attitudes and beliefs (Ajzen, 1988). Importantly, past research strongly supports the behavioral consistency and predictive validity of behavioral tendency aggregation as well as the relationship between salient beliefs and attitude (cf., Rosenberg, 1956; Jaccard & Davidson, 1972; Ajzen, 1974, 1988, 1991; Fishbein & Ajzen, 1981; Godin & Shepard, 1987). Consequently, aggregation of beliefs is increasingly common and acceptable in social science research (cf., Armitage & Conner, 2001).

The Shapero-Krueger Model (SEE)

Unlike the theory of planned behavior that was adapted to entrepreneurship from psychology, the Shapero-Krueger model is based specifically on Shapero's conceptualization of an "intentionality-based process model" (Krueger, 1993, p.5) of the entrepreneurial event (SEE; Shapero, 1975, 1984; Shapero & Sokol, 1982). Entrepreneurial events are often thought of as the dependent variable, and all other factors become the independent variables (individuals, groups, and all contextual factors – social, economic, political; Shapero, 1982). Whereas entrepreneurial events can take many forms (e.g., venture creation), each entrepreneurial event is denoted by five characteristics: initiative taking (an individual or group takes the initiative), resource compilation (assembly of resources toward a specific objective), management (a leader or team spearheading the process), autonomy (the ability to acquire and dispose of resources as needed), and risk taking (risk of success or failure is shared among leadership team) (Shapero & Sokol, 1982). All characteristics are necessary for an entrepreneurial event to occur; that is, somebody must take initiative, secure resources, manage the process, and engage in some form of risk for an event to be considered entrepreneurial (Shapero, 1984). Innovation is not a requisite component of an

entrepreneurial event despite its common association with entrepreneurship; rather, the entrepreneurial event itself is considered the innovation (Shapero, 1984).

The SEE model, depicted in Figure 3, presumes that one's intention to engage in an entrepreneurial event is derived from perceptions of both desirability and feasibility (Shapero, 1975, 1984). Perceived desirability, defined as the degree of attraction one has for a given behavior, and perceived feasibility, defined as one's assessment of their capacity to accomplish a given behavior, are argued to interact, such that if one perceives an action as unfeasible he or she may conclude it undesirable (Shapero & Sokol, 1982). In their original desirability and feasibility explanation, Shapero and Sokol (1982) proffer that desirability perceptions can originate from multiple sources, including family, peers and colleagues, and mentors. Family, friends, peers, and mentors offer the individual the security to view entrepreneurial behavior as legitimate and valuable (Shapero, 1984, Shapero & Sokol, 1982), and their successes serve in a role model capacity, increasing desirability when one observes another's success (e.g., Draheim, Howell, & Shapero, 1966). Being the most trusted and intimate, family usually has the strngest effect, however mentors possess perceived legitimacy so they can play the part of "convincing, assuring, and instructing" to a greater extent than others (Shapero & Sokol, 1982, p. 85).

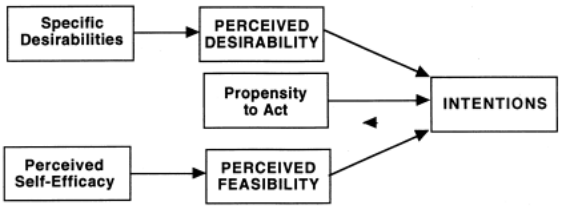

Figure 3: The Shapero-Krueger Model[3] (SEE)

[3] Image adapted from Krueger, Reilly, & Carsrud (2000) with permission.

Feasibility perceptions are influenced by more quantifiable or tangible factors, including the availability of financial support or a business partner. Financial resources (savings, credit, materials, equity capital) are required if an entrepreneurial event is to occur (Shapero, 1984). Likewise, the existence of a potential business partner can make the event more feasible because risk can be shared, complementary skillsets can be combined, and financial support can be potentially secured or amplified (Shapero, 1984, Shapero & Sokol, 1982). Under the SEE, entrepreneurial intentions result from one's desirability and feasibility perceptions coupled with one's propensity to act. Prior entrepreneurship-related experiences and perceptions of self-efficacy, then, only indirectly influence entrepreneurial intentions through perceived desirability and perceived feasibility. Having reviewed the two dominant models used to explain EI, I now turn to reviewing past empirical findings relating to the formation of entrepreneurial intentions.

Past Empirical Findings of EI Studies

Table 1 summarizes the past empirical findings of factors posited to influence the formation of entrepreneurial intentions.[4] As seen in Table 1, past results are plagued with inconsistent findings. For example, depending on the study chosen, the family business exposure – EI relationship is supported (Matthews & Moser, 1995; Wang & Wang, 2004), partially supported (Veciana, Aponte, & Urbano, 2005; Turker & Selcuk, 2009), and not supported (Blanchflower & Meyer, 1991; Matthews & Moser, 1996; Mazzarol et al., 1999). Similar patterns of inconsistent findings exist across many of the other variables, including subjective norm, perceived behavioral control, prior entrepreneurial experience, locus of control, gender,

[4] Table 1 is offered as a review of the dominant research findings published in the mainstream academic literature. This process occurred in two ways: First, I conducted an EBSCO search using keywords entrepreneurial intention, entrepreneurial intent, and intention and then sorted the results for relevance to the entrepreneurial domain. Second I used a reverse citation pulling work that referenced Krueger et al.'s (2000) seminal work. Ultimately, this table is not an exhaustive representation of all empirical EI research to date.

education, age, and need for achievement. These inconsistencies highlight the importance of replication in social science research and make one question the true impact of variables that only significantly impacted EI in a single study (e.g., perceived entrepreneurial barriers, investor relationships, instrumental readiness, values, risk aversion, propensity to act, etc.). Recent research offers some clarity in the web of inconsistent findings, proffering that environmental and person inputs impact entrepreneurial intentions indirectly (e.g., Shook et al., 2003). If, in fact, most of the variables included in Table 1 only impact intentions indirectly, then there is need for further understanding of the factors that mediate the person and environmental variable effects – entrepreneurial intentions relationships.

Table 1: Determinants of EI: A Summary of Past Research Findings

Construct	EI Relation	Study Citation	Significant Result
Attitude toward Entrepreneurship	Positive	Krueger et al. (2000); Autio et al. (2001); Luthje & Franke (2003); Basu & Virick (2008); Liñán & Chen (2009); Engle et al. (2010)	Yes
		Lindsay, Lindsay, & Kropp (2008); Schwarz et al. (2009)	Yes
Subjective Norm	Positive	Krueger et al. (2000); Liñán & Chen (2009)	No
		Autio et al. (2001); Basu & Virick (2008); Nasurdin, Ahmad, & Lin (2009); Engle et al. (2010)	Yes
		Shook & Bratianu (2010)	No, Significant but (-)
Perceived Behavioral Control	Positive	Krueger et al. (2000); Autio et al. (2001); Basu & Virick (2008); Liñán & Chen (2009); Engle et al. (2010)	Yes
		Kolverid & Isaksen (2006)	No
Self-Efficacy	Positive	Kristiansen & Indarti (2004); Wilson et al. (2007); Shook & Bratianu (2010)	Yes
Perceived Desirability	Positive	Krueger et al. (2000); Liñán & Santos (2007); Guerrero, Rialp, & Urbano (2008); Nasurdin et al. (2009); Shook & Bratianu (2010)	Yes

Table 1 Continued

Perceived Feasibility	Positive	Krueger et al. (2000); Liñán & Santos (2007); Guerrero et al. (2008); Shook & Bratianu (2010)	Yes
Propensity to Act	Positive	Krueger et al. (2000)	Yes
Perceived Support	Positive	Luthje & Franke (2003)	Yes
Perceived Barriers	Negative	Luthje & Franke (2003)	Yes
Breadth of Entrepreneurial Experiences	Positive; indirect	Krueger (1993)	Partial
Positiveness of Entrepreneurial Experiences	Positive; indirect	Krueger (1993)	Partial
Propensity to Act	Positive	Krueger (1993)	Yes
Security Anchor	Negative	Lee & Wong (2004)	Yes
Autonomy Anchor	Positive	Lee & Wong (2004)	No
Family Business Exposure	Positive	Kolverid (1997); Matthews & Moser (1995); Wang & Wong (2004)	Yes
		Blanchflower & Meyer (1991); Matthews & Moser (1996); Mazzarol et al. (1999)	No
		Turker & Selcuk (2009); Veciana et al. (2005)	Partial
	Positive, indirect	Liñán & Santos (2007)	Yes
Experience with Technology	Positive	Frank, Leuger, & Korunka (2007)	Yes
Prior Entrepreneurial Experience	Positive	Kolverid (1997)	Yes
		Autio et al. (2001)	Yes
	Positive, indirect	Liñán & Chen (2009)	Yes
Instrumental Readiness	Positive	Kristiansen & Indarti (2004)	Yes
Work Experience	Positive	Matthews & Moser (1995)	Yes
		Blanchflower & Meyer (1991)	Yes
		Evans & Leighton (1990); Mazzarol et al. (1999); Kristiansen & Indarti (2004)	No
	Positive, indirect	Liñán & Chen (2009)	Yes
Values	Positive	Lindsay et al. (2008)	Yes
Risk-taking Propensity	Positive, indirect via attitude	Luthje & Franke (2003)	Yes

Table 1 Continued

Risk Aversion	Negative	Wang & Wong (2004)	No
Internal Locus of Control	Positive, indirect through attitude	Luthje & Franke (2003)	Yes
	Positive	Kristiansen & Indarti (2004)	No
Location (urban vs. rural)	Positive = urban Negative = rural	Mazzarol et al. (1999)	No
		Evans & Leighton (1990)	No
		Blanchflower & Oswald (1990)	No
		Blanchflower & Meyer (1991)	Yes
School Type	Positive	Dolton & Makepeace (1990)	Yes
	Control	Turker & Selcuk (2009)	Partial
Social Class	Positive	Dolton & Makepeace (1990)	Yes
Education	Positive	Blanchflower & Oswald (1990); Dolton & Makepeace (1990); Mazzarol et al. (1999)	No
		Blanchflower & Meyer (1991); Evans & Leighton (1990)	Yes
Educational Background	Bus. Students > Non Bus. Students	Kristiansen & Indarti (2004)	Very weak partial support
Self-confidence	Positive	Turker & Selcuk (2009)	Yes
Social Identification	Positive	Nasurdin et al. (2009)	Yes
Gender	Males > Female	Kolverid (1997); Dolton & Makepeace (1990); Matthews & Moser (1995, 1996); Mazzarol et al. (1999); Wang & Wong (2004); Wilson et al. (2007)	Yes
		Blanchflower & Oswald (1990); Evans & Leighton (1990); Kristiansen & Indarti (2004); Turker & Selcuk (2009)	No
		Veciana et al. (2005)	Partial
Ethnicity (minority status)	Negative	Blanchflower & Oswald (1990); Blanchflower & Meyer (1991); Dolton & Makepeace (1990); Evans & Leighton (1990); Mazzarol et al. (1999)	No
Age	Positive, indirect	Liñán & Chen (2009)	No
	Positive	Autio et al. (2001); Dolton & Makepeace (1990)	Yes
		Evans & Leighton (1990); Blanchflower & Oswald (1990); Blanchflower & Meyer (1991); Mazzarol et al. (1999)	No
Need for Achievement	Positive	Kristiansen & Indarti (2004)	No
	Positive	Frank et al. (2007)	Yes

Table 1 Continued

Innovation Orientation	Positive	Frank et al. (2007)	Yes
Existence of Entrepreneurial Role Models	Positive	Frank et al. (2007); Nasurdin et al. (2009)	Yes
	Positive, indirect	Liñán & Santos (2007); Liñán & Chen (2009)	Yes
Active Entrepreneurial Networks & Functions (contextual not personal)	Positive	Frank et al. (2007)	Yes
University Entrepreneurial Orientation	Positive	Frank et al. (2007); Schwarz et al. (2009)	Yes
Attitude toward Change	Positive	Schwarz et al. (2009)	Yes
Attitude toward Money	Positive	Schwarz et al. (2009)	Yes
Attitude toward Competitiveness	Positive	Schwarz et al. (2009)	No
Perceived Entrepreneurial Support	Positive	Schwarz et al. (2009)	No
Perceived Entrepreneurial Barriers	Negative	Schwarz et al. (2009)	No
Specific Desirabilities	Positive	Shook & Bratianu (2010)	Yes
Perceived Educational Support	Positive	Turker & Selcuk (2009)	Yes
Perceived Structural Support	Positive	Turker & Selcuk (2009)	Yes
Perceived Relational Support	Positive	Turker & Selcuk (2009)	No
Social Capital	Positive, indirect	Liñán & Santos (2007)	Yes
Opp. Recognition Self-Efficacy	Positive	Kolverid & Isaksen (2006)	Partial (p >.10)
Investor Relationships	Positive	Kolverid & Isaksen (2006)	No

Table 1 Continued

Economic Management Efficacy	Positive	Kolverid & Isaksen (2006)	No

Note. Perceived entrepreneurial support consists of autonomy, tenseness, financial performance, personal satisfaction, and personal quality of life. Instrumental Readiness consists of access to capital, availability of business information, and social networks.

The preceding part of Chapter 2 reviewed the two prevailing models used to explain EI and the factors commonly thought to impact EI. In the remainder of the chapter, I challenge the use of these models, positing that there is an alternate theoretical lens that can be applied to more fully explain EI (i.e., explain the variables that mediate the person and environment – EI relationship). I begin synthesizing the similarities between TPB and SEE, and then discussing their cumulative weaknesses.

Intention Models (TPB & SEE) Reconsidered

Despite some differences, the TPB and SEE models are reasonably homologous to one another (the SEE is implicitly an intention model). For example, many intention models include self-efficacy (or constructs resembling self-efficacy) as focal (Krueger et al., 2000; Peterson & Kennedy, 2003). Moreover, both TPB and SEE are generally well-received in the entrepreneurship literature, in part because of their parsimony (e.g., Autio et al., 2001; Carr & Sequiera, 2007; Engle et al., 2010; Guerrero et al., 2008; Krueger & Carsrud, 1993; Krueger, Reilly, & Carsrud, 2000; Shook & Bratianu, 2010). Both models help advance our understanding of entrepreneurial intentions, are routinely used to predict entrepreneurial intentions (c.f., Luthje & Franke, 2003; Fayolle, 2005; Kolverid & Isaksen, 2006; Liñán & Chen, 2009), and are often proclaimed robust enough to account for sampling pool imperfections, poorly operationalized measures, and model misspecification (Armitage & Conner, 2001; Ajzen, 1987; Krueger, 2009).

Yet, given the aforementioned importance of entrepreneurial intentions (viz., impact on entrepreneurial behavior and economic activity), it is reasonable to question whether or not these are truly exemplar models for explaining EI formation, especially when considering that past research using these models produced mixed results, even when looking at core TPB constructs such as subjective norms (cf., Krueger et al. 2000 and Autio et al. 2001) and PBC (cf., Liñán & Chen 2009 and Kolverid & Isaksen 2006). Moreover, both TPB and SEE are unidirectional and linear (Carsrud & Brännback, 2011) and thus fail to adequately account for the existence of reciprocal, exponential, and moderating relationships (e.g., Brännback, Carsrud, Kickul, Krueger, & Elfving, 2007; Kelman, 1974). In addition, much of the research into entrepreneurial intentions shows that constructs not applicable or core to TPB or SEE also impact entrepreneurial intention formation (e.g., generalized self-efficacy, Markman, Balkin, & Baron, 2002; gender, Kolverid, 1997 and Wilson et al., 2007; and need for achievement, Frank et al., 2007), thus prompting some scholars to refer to extant intention models as uninformed (Hindle, Klyver, & Jennings, 2009). Additionally, both models fail to adequately explain key linkages beyond entrepreneurial intentions, such as relationships between entrepreneurial intentions and goals or entrepreneurial intentions and behavior (Bird & Schjoedt, 2009; Edelman, Brush, Manolova, & Greene, 2010). Oddly, in nearly 20 years of entrepreneurial intention research neither the TPB nor the SEE model was ever seriously challenged (Brännback, Carsrud, Kickul, & Krueger, 2007), and continual testing and challenge is a core component of the scientific process (cf., Popper, 1959 and Kelly, 1955). The lack of theoretical challenge aside, given the extant literature surrounding these models not only produce mixed results but also demonstrate that additional variables not germane to the models impact EI formation, the creation or adoption of a more unifying and complete framework is warranted.

Inspiration for a more unifying approach is found in the recent work of McGlashan & Finch (2010), who explore the use of behavioral and social science theories in sport injury prevention. These authors note that Bandura's (Bandura, 1982, 1986, 1989, 1999) work on social cognitive theory possesses implicit similarities to intention-based models and that both social cognitive approaches and intentionality approaches are applicable to explaining behavior and related phenomena. Social cognitive approaches are well received in the literature (e.g., Hmieleski & Baron, 2009; Rogers, Creed, & Glendon, 2008), and are robust across a variety of contexts (e.g., Graves, 2003; Stajkovic & Luthans, 1998; Benight & Bandura, 2004). Whereas intentionality approaches do not properly consider non-linear and bi-directional relationships, social cognitive approaches do, offering a more robust perspective by which human intentions, goals, and actions can be examined. Thus, now I turn to providing an overview of social cognitive career theory (SCCT; Lent et al., 1994, 2002), an alternate theoretical lens based on Bandura's work that I argue advances our understanding of entrepreneurial intentions. SCCT's core components capture characteristics inherent in the TPB and the SEE, address TPB and SEE's noted limitations, and incorporate additional explanatory variables in a more direct and complete manor.

Social Cognitive Career Theory

This section provides an overview of social cognitive career theory. In addition to reviewing SCCT's three core functions (viz., self-efficacy, outcome expectations, and intentions), this section illustrates how a SCCT-informed approach more completely incorporates the aforementioned factors known to impact EI.

Overview of Social Cognitive Career Theory

Social cognitive career theory, rooted in social cognitive theory (Bandura, 1982, 1986, 1989), seeks to trace the web of connections between people and their careers, while accounting for both cognitive and interpersonal influences, as well as self-imposed and externally-imposed career behavior influences (Lent et al., 2002). At its core, SCCT rests on constructionist assumptions that individuals possess the capacity to influence their own development and surroundings (i.e., that society is filled with proactive, self-organizing, self-reflecting, self-regulating individuals with the power to influence their own actions to produce certain results; Bandura, 1986). The individual's capacity to control his/her own cognition, motivation, affect, and action operates through mechanisms of personal agency (Bandura, 1989). Human action, then, is a socially situated product of the interplay between personal (cognition, affect, biological events), behavioral and environmental influences (Bandura, 1999). How individuals interpret the outcomes of their behavior informs and alters both their environments and the personal factors they possess, thus in turn altering subsequent behavior. In other words, thoughts regulate actions. Bandura (1986) termed this process reciprocal determinism, referring to the notion that the three influences (personal, behavior and environment) interact – resulting in triadic reciprocality. Under this triadic approach, individuals are viewed as both "products and producers of their environment" (Wood & Bandura, 1989, p. 362). The reciprocal nature of these determinants of human functioning enable efforts (educational, counseling, etc.) to be directed at personal, environmental or behavioral factors. Thus, one can develop and implement strategies to improve emotional, cognitive or motivational processes, which can therefore increase behavioral competencies or alter the social conditions under which individuals function (Bandura, 1977). Within the triadic reciprocity system, SCCT incorporates three core constructs (viz., self-

efficacy, outcome expectations, and intentions) to explain human behavior and intention (Figure 4 illustrates SCCT's general conceptual scheme relating to these three core motivational components). In the next section I discuss how SCCT uses each of these core constructs as mediators between inputs (person, background, & environmental) and intentions.

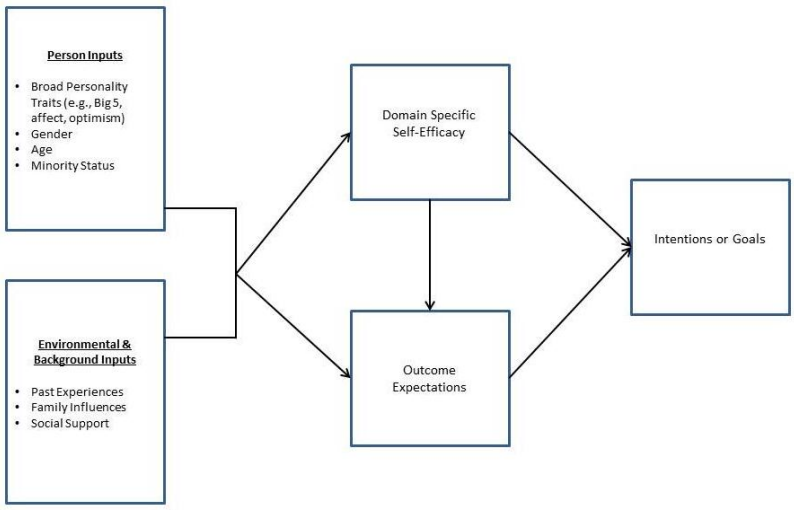

Figure 4: Generic SCCT Conceptual Scheme

Core Motivational Components of SCCT

Self-efficacy, outcome expectations, and intentions are the core "building blocks" of SCCT, representing the key means by which individuals influence personal agency (Lent et al, 2002). Given self-efficacy has received the most attention in both the entrepreneurship (cf., Boyd & Vozikis, 1994; Wilson et al., 2007; Zhao, Seibert, & Hills, 2005) and careers (cf., Hacket & Lent, 1992; Lent et al. 1994; Locke & Latham, 1990; Swanson & Gore, 2000) literature it is a logical starting place.

Self-Efficacy

As mentioned in the definition of self-efficacy in Chapter 1, two distinct conceptualizations of self-efficacy are prevalent in the literature: domain specific self-efficacy

(e.g., Arenius & Minniti, 2005; Forbes, 2005; Zhao et al., 2005) and generalized self-efficacy (e.g., Baum, Locke, & Smith, 2001; Baum & Locke, 2004; Markman et al., 2002; Markman, Baron, & Balkin, 2005; Wilson et al., 2007). SCCT reconciles both conceptualizations, considering generalized self-efficacy a personal input variable, and domain specific self-efficacy a core motivational component. That is, SCCT presumes domain specific self-efficacy to consist of a continuously evolving set of self-beliefs that are in constant interaction with other person inputs (i.e., generalized self-efficacy), environmental inputs, and behavioral factors. These beliefs develop through four mechanisms: mastery experiences, vicarious experiences, social persuasion and physiological factors (Bandura, 1982, 1991; Wood & Bandura, 1989). Mastery experiences are the individual's previous experiences in the same or similar situations (Mathieu, Martineau, & Tannenbaum, 1993), and are the most authentic and influential source of self-efficacy beliefs (Bandura, 1991). Vicarious experiences (or modeling) are experiences one has indirectly through others; they are typically experiences gained by watching referent others succeed or fail (cf., Festinger, 1954).[5] Ultimately, good referent others can strengthen one's self-efficacy beliefs by conveying the knowledge and skills necessary to handle environmental demands (Bandura, 1999). Social persuasions are essentially encouragements or discouragements received from others whose opinions are valued (Engle et al., 2010), and can take several forms including conveying faith, orchestrating activities and situations that facilitate success, or providing shelter from situations destined for failure (Bandura, 1999). Lastly, given individuals make efficacy judgments based upon their physical or emotional states (Bandura, 1999), perceived physiological factors profoundly impact self-efficacy beliefs. Ultimately, the impact of these four mechanisms on self-efficacy beliefs is dependent on multiple factors (viz.,

[5] Festinger's first hypothesis is that humans are compelled to evaluate themselves via comparison to others and that these comparisons strongly impact behavior.

reciprocal determinism), but successful experiences, within a given domain, generally elevate self-efficacy beliefs, and failures within that domain, generally lower them (Lent et al., 2005). Having now distinguished between generalized and domain specific self-efficacy, and described how self-efficacy beliefs are formed, I turn to discussing the second core motivational component of SCCT, outcome expectations.

Outcome Expectations

Outcome expectation beliefs are primarily concerned with the perceived consequences of performing a given behavior (Bandura, 1986). In essence, outcome expectation beliefs are beliefs about the consequences, positive and negative, of behavior (Hackett & Betz, 1981; Lent and Brown, 2008). These beliefs take multiple forms, including beliefs about the outcomes assumed to result from the process itself, such as expected absorption into task demands (Lent et al., 2002). Similar to self-efficacy beliefs, outcome expectation beliefs result from learning experiences. For example, one's outcome expectations when launching a new venture derive from several beliefs, including one's assessment of the rewards received for venturing (e.g., autonomy, wealth creation), observation of others' venture outcomes, cognitive view of self-directed outcomes (e.g., personal satisfaction), and even the reactions (e.g., admiration, envy, etc.) one expects to receive from others (Bandura, 1986; Lent et al., 2002). Importantly, outcome expectations may be influenced by self-efficacy beliefs when outcomes are assessed by the quality of one's ability (i.e., outcome expectations partially mediate the self-efficacy – intention relationship). Of course, outcome expectations vary in regard to direction and strength; for instance one can form strong, moderate, indifferent, and weak outcome beliefs, and these beliefs can take a positive or negative form (Lent et al., 1994; Lent & Brown, 2006). SCCT's presumption underlying outcome expectations is that individuals are prone to form intentions and

engage in behaviors when outcome expectations are positive, and to not intend to engage or perhaps altogether avoid behaviors when outcome expectations are negative. Whereas this results in an empirical slant towards studying the positive, consideration of the negative is also important (Hackett, Betz, Casas, & Rocha-Singh, 1992), especially in an entrepreneurial context where outcomes vary widely. Considering the mixed findings of past research on the relationship between subjective norms and entrepreneurial intentions (cf., Autio et al., 2001 vs. Shook & Bratianu, 2010), it is possible that subjective norms reduced outcome expectation beliefs if the normative belief presumed the majority of entrepreneurial ventures fail, thus explaining the inconsistent findings. Ultimately, SCCT posits that considering both positive and negative directions is needed, in large part because direction differentially influences intentions and behaviors (Fouad & Guillen, 2006).

Intentions (or goals)

As defined in Chapter 1, intentions are one's persistence to engage in a given activity or effect a given future outcome (Bandura, 1986). Intentions are an important means by which individuals exercise personal agency, in that they help to focus, guide, and sustain behaviors over time (Bandura, 1986). It is long recognized that intentions are the immediate precursor to behavior, and that intentions are the single best predictors of behavior (Fishbein & Ajzen, 1975). Given sans intention there is little to no reason to expect action, intentions are critical to the understanding of behaviors (Lee & Wong, 2004). In essence, despite the role of environment and person inputs in shaping behavior (often indirect; Baum & Locke, 2004), behavior is motivated by individual intentions and the other SCCT variables with which it interrelates (viz., outcome expectations and self-efficacy; Lent et al, 2002, 2005). Given SCCT posits intentions, outcome expectation, and self-efficacy are interrelated, and that personal and environmental factors

indirectly influence self-efficacy and outcome expectations ultimately leading to intention formation, the next section applies these interrelationships to the study of entrepreneurial intentions.

Applying SCCT to the Study of EI

Well established in vocational psychology literature, SCCT explains individual motivational processes underlying intentions and behaviors across a variety of domains and contexts, including computer science (Brown, Garavaha, Fritts, & Olson, 2006), math and science (Ferry, Fouad, & Smith, 2000), academia (Fouad, Smith, & Zao, 2002), general occupational choice (Gore & Leuwerke, 2000), career goals and aspirations (Luzzo, Hasper, Albert, Bibby, & Mattinelli, 1999), and vocational interests (Rottinghaus, Gaffey, Borgen, & Ralston, 2006), demonstrating that vocational psychology has fully embraced SCCT. This widespread acceptance is likely attributable to SCCT's ability to integrate multiple competing theories into one unifying framework by synthesizing together both conceptually similar and diverse constructs into a theoretically sound model that thus better explains outcomes (Hackett & Lent, 1992; Lent & Savickas, 1994). It is these attributes of SCCT that make it a desirable theory for use in other domains. Over the last five years SCCT successfully began its transition into the I/O domain, and researchers are just beginning to use it to explain behavior in this regard (e.g., Lent & Brown, 2006, 2008, Zikic & Saks, 2009).

Whereas most existing models of EI are underspecified in that they only consider the cognition occurring within one's head (Hindle et al., 2009), SCCT adopts a much broader, contextually informed, definition of cognition (cf., Bandura, 1977, 1986, 1999) inclusive of contextual factors such that SCCT posits that domain-specific self-efficacy should fully mediate

the person inputs – intention relationship, and should partially mediate the environmental inputs – intention relationship. In other words, SCCT holds that person inputs (i.e., individual differences and demographics) and environmental inputs (including background inputs) influence self-efficacy perceptions and outcome expectations, subsequently influencing intentions and behaviors. Past research on entrepreneurial venturing, despite its limitations, demonstrates that characteristics of the individual and characteristics of the situation matter, a view consistent with Reynolds (1991). SCCT provides a unifying framework that unites conceptually similar constructs (e.g., entrepreneurial outcome expectations, and entrepreneurial self-efficacy), offers rationale to explain entrepreneurial outcomes (e.g., entrepreneurial intentions, behavior and performance), and allows for the inclusion of other seemingly diverse constructs (e.g., generalized self-efficacy, gender, prior family business experience, work experience; i.e., characteristics of the person and characteristics of the situation) that previous models of entrepreneurial intentions do not fully or directly include. Moreover, the core elements of SCCT influence one-another bi-directionally over time (Lent et al, 2002), enabling the theory to more fully explain entrepreneurship's chaotic and non-linear processes (Neck & Greene, 2011) than do other theories employed to date (viz., TPB and SEE). It is this type of unifying theory that recent scholars claim current entrepreneurship research needs to move forward (Hindle et al., 2009; Brännback et al., 2007), thus making the application of SCCT in this regard both practical and timely.

Moreover, recent empirical work, albeit inadvertently, paves the way for SCCT's adoption into entrepreneurship. For example, multiple studies explore entrepreneurial self-efficacy (e.g., Arenius & Minniti, 2005; Forbes, 2005; Zhao et al., 2005), entrepreneurial intentions (e.g., Autio et al., 2001; Luthje & Franke, 2003; Liñán & Chen, 2009; Engle et al.,

2010), and entrepreneurial outcome expectations (Townsend, Busenitz, & Arthurs, 2010). The recent psychometric upheaval in entrepreneurship (i.e., a call for more and better developed measures; Davidsson, 2005, 2007) resulted in the development of multiple measures assessing SCCT-relevant constructs including entrepreneurial self-efficacy, entrepreneurial outcome expectations (Krueger, 2000), and entrepreneurial intentions (Thompson, 2009). Additionally, measures of many person inputs and contextual factors specific to entrepreneurship are established in the literature, including prior family business exposure (Carr & Sequeira, 2007), entrepreneurial identity aspiration (Farmer, Yao, & Kung-McIntyre, 2009), enterprise potential (Athayde, 2009), and prior entrepreneurial experience (DeTienne & Chandler, 2007), to name a few. Moreover, in looking beyond intentions at behavior and performance, scholars are developing improved measures to assess entrepreneurial behavior (Carter, Gartner, & Reynolds, 1996; McGee et al., 2009) and venture performance (Chandler & Hanks, 1994; Runyan, Droge, & Swinney, 2008). The development of these measures, many of which emerged in the last five years, establishes the infrastructure necessary to effectively build and test a SCCT-informed model within the domain of entrepreneurship. Having established SCCT as an appropriate theoretical framework for use in entrepreneurship research, in Chapter 3 I present a formal SCCT-informed conceptual scheme of entrepreneurial intention formation, and offer formal hypotheses in support of this scheme.

CHAPTER III: CONCEPTUAL SCHEME AND HYPOTHESES

Figure 5 presents the SCCT-informed conceptual scheme and Table 2 presents the study hypotheses. In the following paragraphs I follow the flow of the model, from left (person inputs) to right (entrepreneurial intentions), offering theoretical justification and formal hypotheses for each posited relationship.

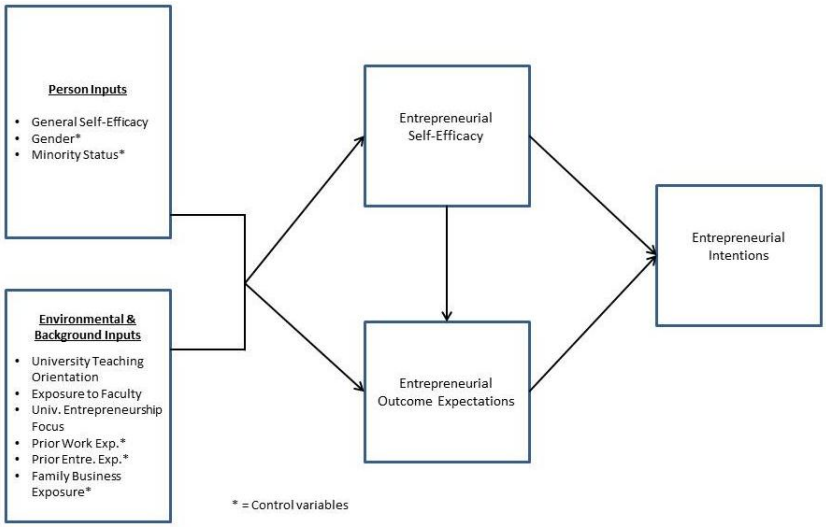

Figure 5: Conceptual Scheme

Looking at Figure 5, the first component of the conceptual scheme are person inputs. As discussed in the previous chapter, SCCT proffers that person input factors influence entrepreneurial self-efficacy and entrepreneurial outcome expectations; relationships consistent with previous research (e.g., Engle et al., 2010; Lent et al, 1994, 2000, 2008; Carter & Brush, 2004). In this regard, I focus my attention on three theoretically relevant variables: gender, minority status, and generalized self-efficacy (GSE). Gender and minority status are included as control variables because they impact individual entrepreneurial activity (e.g., Kolverid, 1997; Wang & Wong, 2004; Wilson et al., 2007) to a greater extent than other demographic variables

(e.g., age). More specifically, gender is important given women (a) tend to place more weight on their perceived self-efficacy when making career decisions than men (Bandura, 1992; Wilson et al., 2007), and (b) are more reluctant to engage in an entrepreneurial venture out of fear of failure (Chen et al., 1998). Minority status, or perceiving oneself as a non-majority individual, is important given minorities traditionally possess fewer individual assets (Gallop, 1998; MBDA, 2010), less social capital (Green & Owen, 2004), and less access to opportunities (Bates, 1997; Walker, 1998) than their peers in the majority group. Thus, under SCCT, minority status may impact self-efficacy perceptions and outcome expectations.

While many SCCT studies do not include person input variables as focal (e.g., Lent et al., 2005; Lent, Shue et al., 2008; Rogers et al., 2008), I contend under SCCT that inclusion of generalized self-efficacy is warranted in an entrepreneurial context. Generalized self-efficacy (GSE) is included as a person input in an effort to (a) provide a more full explanation of the role GSE on the formation of entrepreneurial intentions, and (b) clarify the relationship between generalized self-efficacy and entrepreneurial self-efficacy.[6] As mentioned in the definitions provided in Chapter 1, generalized self-efficacy and entrepreneurial self-efficacy represent distinct conceptualizations of self-efficacy. The traditional view of self-efficacy, in line with Bandura's definitional caveat "given situational demands," is that self-efficacy is task and domain specific (Bandura, 1989, 1992, 1997). Domain specificity is an important aspect of self-efficacy, indicating that individuals may possess high self-efficacy in one area while simultaneously possessing low self-efficacy in another. Boyd & Vozikis (1994) captured this domain specificity when they noted that self-efficacy refers to one's self-confidence in "specific tasks and situations." Individuals with high self-efficacy for a specific task are more likely to

[6] I treat GSE as a personality trait assumed to remain relatively constant over time. ESE, on the other hand, is considered a state-like conceptualization of personality, subject to context and temporal changes.

both pursue and persist in that task (Bandura, 1997; Shane, Locke, & Collins, 2003) because self-efficacy helps individuals reduce distractions and stay focused (Kanfer & Ackerman, 1996; Bandura 1982, 1989, 1992). Boyd & Vozikis (1994) note that if self-efficacy for a specific task is low, individuals may not act, even if they perceive social approval for the behavior, as the likelihood that such action produces the desired outcome is low.

While compelling, some contend that Bandura's language regarding "given situational demands" is too restrictive causing most researchers to focus on only state-like conceptualizations of the self-efficacy construct (Chen, Gully, and Eden, 2001). Accordingly, some scholars are moving away from this traditional conceptualization of domain specific self-efficacy; favoring a newer, more generalized construct (viz., generalized self-efficacy). Defined as "individuals' perception of their ability to perform across a variety of different situations," (Judge, Erez, & Bono, 1998, p. 170), generalized self-efficacy is an individual difference in the tendency to view oneself as capable of meeting task demands across a variety of situations (Chen et al., 2001). Recent research posits that the generalized self-efficacy construct sufficiently predicts individual entrepreneurial cognition given it captures one's perceived ability to successfully perform a variety of tasks across an array of life experiences (McGee et al., 2009). Advocates for the use of the generalized self-efficacy in entrepreneurship argue that because entrepreneurs must possess diverse skill sets in multiple domains (e.g., marketing, human resources, sales, finance, accounting), it is not practical to generate a list of all the specific tasks related to the entrepreneurial process (e.g., Markman et al., 2002). Whereas both sides present theoretical evidence to support their claims, my use of SCCT where generalized self-efficacy is included as a person input adopts both conceptualizations, recognizing that both conceptualizations play distinct roles in the formation of entrepreneurial intentions. Therefore,

Hypothesis 1: Individuals who possess a higher level of generalized self-efficacy will report (H1a) stronger entrepreneurial self-efficacy and (H1b) more positive entrepreneurial outcome expectations than will those with lower levels of generalized self-efficacy.

Given it is unlikely one can attain a chosen occupational status based on genetics alone, research into SCCT explores the extent to which environmental variables influence self-efficacy, outcome expectations, and intentions (e.g., Byars-Winston & Fouad, 2008; Lent, Lopez, Lopez, and Sheu, 2008). As mentioned in Chapter 2, past entrepreneurship research demonstrates that individual environmental and background inputs (e.g., prior work experience, family business exposure) shape how individuals see themselves, thus promoting stronger self-efficacy beliefs and more positive outcome expectations (Kolverid, 1997; Liñán & Santos, 2007; Matthews & Moser, 1995). Moreover, variables such as these consistently explain greater variance in intentions than person inputs (Sandberg & Hofer, 1987). Yet, little is known about the plethora of background and contextual variables that impact self-efficacy and outcome expectations (Lent et al., 2001), arguably because many past efforts focus on personality traits (Rauch & Frese, 2007). To address this opportunity, I focus on three environmental input variables (viz., university teaching orientation, student exposure to faculty, and university focus on entrepreneurship). I choose these three variables for the following reasons: (1) SCCT strongly suggests that prior educational experiences help shape self-efficacy beliefs and outcome expectations, (2) the massive expansion of entrepreneurship education curriculums globally over the last 15 years now enables exploration of these variables on a large scale, making this exploration timely, (3) recent research is beginning to demonstrate the importance and power of background variables (e.g., Borgen & Betz, 2008) explaining self-efficacy beliefs and outcome expectations, (4) pedagogical implications of use to entrepreneurship educators are likely, and

(5) scholars lament over the lack of exploration of education and training variables (e.g., Nabi et al., 2006).

To begin, every university has some focus or orientation, whether it is toward research, toward teaching, or some hybrid of teaching and research. Research universities seek to advance knowledge; teaching universities seek to enhance student knowledge, skills, and abilities (Prince, Felder, & Brent, 2007). Faculty must balance the time they spend on pedagogy with other demands on their time. In determining how to prioritize this balance, faculty take cues from their university administration on which is valued more (Flood & Moll, 1990; Salancik & Pfeffer, 1978). Not surprisingly, faculty at research-oriented universities report possessing "a significantly greater orientation to research" than their peers at teaching oriented schools (Schuster & Finkelstein, 2006, p. 89). This difference in focus is evident in the amount of time faculty devotes to their research or teaching activities. For example, Schuster & Finkelstein (2006) found that faculty at research universities spend roughly 33% of their time on teaching, whereas their counterparts at teaching universities average nearly double that (roughly 65%). These figures only illustrate a single point in time, but research shows that over the last century the divergence between teaching and research continues to increase, such that research universities' expectations for faculty research not only continue to increase, but are also the primary determinant in hiring, tenure, and promotions decisions (Prince et al., 2007). Some scholars argue that research and teaching mutually benefit each other (e.g., Jenkins, Blackman, Lindsay, & Patton-Saltzberg, 1998; Neumann, 1994), but these studies face criticism for over relying on indirect measures (Prince et al., 2007) and their often mixed findings (e.g., Gray, Diamond, & Adam, 1996; Neumann, 1992). Moreover, extant research shows that the skillsets and attributes which define a good researcher (viz., intense activity in a narrow field, countless

hours spent in lab and field study settings, etc.) are different than those which define a good teacher (e.g., dynamism, presentation skills; Felder, 1994; Flood & Moll, 1990; Rugarcia, 1991), and often excellence in one arena is considered detrimental to the excellence in the other (Sriyotha, 2004). The environment in which individuals get their education affect the way they learn, how much they learn, and how they will perform post-graduation (Flood & Moll, 1990).

Good teaching and learning require good, frequent interaction between students and faculty (Fink, 2003). Some students seek the opportunity to interact closely with faculty (Flood & Moll, 1990), and exposure to faculty has long been recognized as having a strong positive impact on student performance and achievement (Finn & Achilles, 1990; Hedges, Laine, & Greenwald, 1994; Ostroff & Schmitt, 1993) across a variety of disciplines (e.g., Glass, 1982; Iijima, 1998) and educational settings (e.g., Rivkin, Hanushek, & Kain, 2005). Ultimately, students who attend teaching oriented schools and interact more frequently and meaningfully with faculty gain additional support and feedback, more personalized instruction, and tend to be held more individually accountable; this is in large part due to the faculty prioritizing teaching over intellectual contributions. Given SCCT presumes self-efficacy consists of a continuously evolving set of self-beliefs that are in constant interaction with other person, behavior, and environmental factors, these exchanges (i.e., frequent feedback, personal accountability, etc.) directly impact self-efficacy and outcome expectation beliefs.

Moreover, as discussed in Chapter 2, SCCT contends self-efficacy and outcome expectations are developed through learning experiences (e.g., mastery experiences or vicarious experiences), and that good referent others strengthen one's self-efficacy beliefs and outcome expectations by conveying the knowledge and skills necessary to handle environmental demands (Bandura, 1999). By faculty providing frequent feedback, students are more empowered to

master course content or more realistically evaluate the outcome of a given action. Moreover, frequent feedback creates a spillover effect on vicarious experience such that the greater the mastery experience the higher likelihood of success (or avoidance of failure), with each success creating a positive vicarious experience and each avoided failure preventing a negative vicarious experience. Consider an entrepreneurship class on new venturing, whereby students receive feedback on a continual basis about their new venture idea. Assuming feedback leads to more positive outcomes, the higher the likelihood the venture launch will be successful and thus provide a vicarious experience for not only immediate peers, but also future students given spillover effects create lasting impact (Isenberg, 2010). Ultimately, increased student faculty exposure is a best practice (Apel, 1999), and much of the recent entrepreneurship education literature, both explicitly and implicitly, calls for greater student faculty interaction (e.g., Neck & Greene, 2011; Peterman & Kennedy, 2003; Sherman, 2005; St-Jean & Audet, 2009), noting that this interaction sets the tone of the relationship between the student and the faculty member (Arum & Roksa, 2011). Yet, no studies to date explore the effect of this experience on entrepreneurship education. Consistent with the core tenants of SCCT, I expect that universities with teaching orientations will produce students with higher self-efficacy perceptions and outcome expectations than their research-oriented counterparts, and that higher levels of student – faculty interaction will result in higher levels of entrepreneurial self-efficacy and more positive entrepreneurial outcome expectations. Therefore, I offer the following two hypotheses:

Hypothesis 2: Individuals educated at teaching oriented schools will report (H2a) stronger entrepreneurial self-efficacy and (H2b) more positive entrepreneurial outcome expectations than those educated at research oriented university.

Hypothesis 3: Individuals with greater exposure to university faculty will report (H3a) stronger entrepreneurial self-efficacy and (H3b) more positive entrepreneurial outcome expectations than those with less exposure to university faculty.

Environments that nurture and sustain entrepreneurship are central to fostering entrepreneurial behavior (Isenberg, 2010) given they enable a necessary synthesis of resources (e.g., human capital, financial capital, intellectual property protection, etc.; Reynolds et al., 2007; Wennekers, Uhlaner, & Thurik, 2002). Past research primarily conceptualizes these environments primarily at the local, state or national level, and then seeks to explore the factors central to environmental success. For example, in exploring Silicon Valley's success, Castilla and colleagues posit that the most critical success factor was the region's ability to cultivate social networks (Castilla, Hwang, Granovetter, & Granovetter, 2000). To cultivate entrepreneurial environments, governments are told to focus on domain development, exploit available experience, and continually experiment to find what works for their unique situation (Isenberg, 2010).

Much like governments, universities seek to stimulate entrepreneurial behavior. Also, much like governments, universities may proactively take steps to cultivate entrepreneurial ecospheres that result in higher levels of entrepreneurial activity. This is accomplished by offering entrepreneurship curriculums, having dedicated entrepreneurship faculty, developing relationships with relevant external actors (e.g., bankers, role models), dedicating centers of innovation and entrepreneurship, encouraging student entrepreneurship clubs or organizations, and a myriad of other factors. These factors impact student perceptions of efficacy and outcome expectations. For example, entrepreneurial role models support the transfer of tacit knowledge (Johannisson, Halvarsson, & Lovstal, 2001); student entrepreneurship organizations foster social learning (Pittaway, Rodriguez-Falcon, Aiyegbayo, & King, 2011), and reinforce classroom knowledge and skills (Brown & Kant, 2009). Thus, consistent with past research at the community, state, and national level, I expect that universities that take proactive steps to foster

entrepreneurship produce students with higher levels of entrepreneurial self-efficacy and entrepreneurial outcome expectations than universities who do not adopt such a focus. Therefore,

Hypothesis 4: Individuals whose university's placed a greater focus on entrepreneurship will report (H4a) stronger entrepreneurial self-efficacy and (H4b) more positive entrepreneurial outcome expectations than those whose university placed less of a focus on entrepreneurship.

As discussed in Chapter 2, SCCT proffers that self-efficacy and outcome expectations are core determinants of intentions, and that these constructs positively impact the formation of intentions. More specifically, under SCCT individual interest in a given activity results when the individual views himself or herself as competent and anticipates that performing that activity will result in desirable outcomes (Bandura, 1986; Lent, Larkin, & Brown, 1989). Similarly, individuals are unlikely to develop intentions toward a given behavior when they do not perceive themselves as competent in that regard or do not expect to receive outcomes they value (Lent et al, 2002). Given these relationships are supported by a plethora of past research across a variety of domains (e.g., Lent et al., 1994, 2002), I expect these relationships to hold in the entrepreneurial context, especially given past entrepreneurship research demonstrates a positive relationship between entrepreneurial self-efficacy and entrepreneurial intentions (Chen, Greene, & Crick, 1998; Kristiansen & Indarti, 2004; Scott & Twomey, 1988; Shook & Bratianu, 2010). Additionally, individuals who possess higher entrepreneurial outcome expectations will possess stronger entrepreneurial intentions (cf., Krueger, 2000; Wilson et al., 2007), though empirical testing of this relationship is novel given it is seldom tested in entrepreneurial contexts. Therefore,

Hypothesis 5: Individuals with (H5a) stronger entrepreneurial self-efficacy and (H5b) more positive entrepreneurial outcome expectations will report stronger entrepreneurial intentions than those with weaker self-efficacy and less positive outcome expectations.

In addition, SCCT also posits that self-efficacy mediates both the person and environmental / background inputs – outcome expectation relationship and the person and environmental / background – intentions relationship. Higher self-efficacy increases outcome expectations and intentions, and lower self-efficacy decreases outcome expectations and intentions. These mediating effects are supported by a plethora of past research spanning a variety of contexts (e.g., Fouad & Smith, 1996; Lent et al., 1994, 2008; Lent & Brown, 2006). SCCT posits that domain specific self-efficacy mediates the person and environmental / background inputs – intentions relationships and that domain specific self-efficacy will influence outcome expectations, at least to the extent outcomes are perceived to be conditional on the quality of individual performance (Lent et al., 2002). Therefore,

Hypothesis 6: Entrepreneurial self-efficacy will mediate (H6a) the relationship between person inputs and entrepreneurial outcome expectations, (H6b) the relationship between person inputs and entrepreneurial intentions, and (H6c) the relationship between environmental / background inputs and entrepreneurial intentions.

Lastly, under SCCT, outcome expectations mediate the person and environmental / background inputs – intentions relationship. As discussed in Chapter 2, outcome expectations are acquired via learning experiences, such that one's outcome expectation toward a specific career action is informed by his past outcomes in similar situations, outcomes of referent others whom he has observed, and cognitive awareness of preconceived outcomes (e.g., self-efficacy, self-awareness) within a given domain (Lent et al., 2002). Therefore,

Hypothesis 7: Entrepreneurial outcome expectations will mediate (H7a) the relationship between person inputs and entrepreneurial intentions and (H7b) the relationship between environmental / background inputs and entrepreneurial intentions.

Table 2: Summary of Study Hypotheses

Hypothesis 1: Individuals who possess a higher level of generalized self-efficacy will report (H1a) stronger entrepreneurial self-efficacy and (H1b) more positive entrepreneurial outcome expectations than those with lover levels of generalized self-efficacy.
Hypothesis 2: Individuals educated at teaching oriented schools will report (H2a) stronger entrepreneurial self-efficacy and (H2b) more positive entrepreneurial outcome expectations than those educated at research oriented university.
Hypothesis 3: Individuals with greater exposure to university faculty will report (H3a) stronger entrepreneurial self-efficacy and (H3b) more positive entrepreneurial outcome expectations than those with less exposure to university faculty.
Hypothesis 4: Individuals whose university's placed a greater focus on entrepreneurship will report (H4a) stronger entrepreneurial self-efficacy and (H4b) more positive entrepreneurial outcome expectations than those whose university placed less of a focus on entrepreneurship.
Hypothesis 5: Individuals with (H5a) stronger entrepreneurial self-efficacy and (H5b) more positive entrepreneurial outcome expectations will report stronger entrepreneurial intentions than those with weaker self-efficacy and less positive outcome expectations.
Hypothesis 6: Entrepreneurial self-efficacy will mediate (H6a) the relationship between person inputs and entrepreneurial outcome expectations, (H6b) the relationship between person inputs and entrepreneurial intentions, and (H6c) the relationship between environmental / background inputs and entrepreneurial intentions.
Hypothesis 7: Entrepreneurial outcome expectations will (H7a) mediate the relationship between person inputs and entrepreneurial intentions and (H7b) mediate the relationship between environmental / background inputs and entrepreneurial intentions.
Control Variables: Gender, Minority Status, Prior Work Experience, Prior Entrepreneurial Experience, Prior Family Business Exposure.

CHAPTER IV: METHOD

This chapter provides details regarding sample selection, data collection procedure, and the measures employed.

Sample & Procedure

Data from 40 AACSB accredited universities were retrieved from The Entrepreneurship Education Project (EEP) dataset.[7,8] The EEP consists of two distinct data sources: university response data and student response data. EEP collected the university response data first by surveying the faculty member who volunteered to serve as the EEP collaborator for their respective university. These faculty were asked to complete a questionnaire soliciting detailed information about their university, its infrastructure, and its entrepreneurial resources. Upon completion of the university survey, EEP surveyed students enrolled in entrepreneurship courses at each university. The student survey questionnaire consisted of over 15 constructs aimed at measuring student's motivational processes toward entrepreneurship (a sample student questionnaire is included as Appendix B). This data were then supplemented with additional variables (viz., student exposure to faculty, university teaching orientation) that I coded from publically available AACSB records in order to be able to test all study hypotheses. All data were collected with Institutional Review Board (IRB) approval from each respective host institution, and a copy of the LSU IRB approval paperwork and statement of informed consent is included as Appendix C.

[7] The EEP is a longitudinal data collection effort that began in 2010 by Dr. Doan Winkel (Illinois State University) and Dr. Jeff Vanevenhoven (University of Wisconsin, Whitewater). To date, the EEP dataset was compiled with the help of collaborators representing over 400 universities spanning 80 countries.

[8] The EEP limited-release Phase I student response dataset dated January 28, 2011 was used. The university survey data is not publically available but was provided for use by EEP Director Dr. Doan Winkel.

Appropriateness of the sample in investigating the phenomena of interest. Researchers lament entrepreneurship research needs more longitudinal studies as well as more multi-country, multi-source datasets (e.g., Chandler and Lyon, 2001; Crook, Shook, Morris, & Madden, 2010); the EEP, meets each of these criteria. Additionally, the use of student samples to investigate entrepreneurial intent and self-efficacy is frequently employed because undergraduate students show a higher propensity toward venture creation than the general population (Liñán & Santos, 2007), and samples of upper level students provide real-time insights into individual vocational preferences during a period of time that individuals are making career decisions (Krueger et al., 2000). Thus, whereas in some situations student samples are viewed as a deficiency or limitation, in this instance they are a focal population.

Appropriateness of the sample for use in a dissertation. The multi-country EEP database is brand new and available only to a limited number of contributors. Phase I of the data was released in February 2011. Thus, use of the EEP dataset is both timely and novel. The EEP data is consistent with best practice recommendations for entrepreneurship research set forth by Mullen, Budeva, and Doney (2009). Specifically, an adequate number and variety of variables are present, measure estimates of internal consistency can be calculated where appropriate, sample size is sufficient, multiple sources of data are used, the construct validity of each selected measure was a focal consideration, and double-back translation was used where appropriate.

Arguably, EEP is very similar in nature and scope to two previous datasets that are well-received in the literature: the Global Entrepreneurship Monitor (GEM) and the Panel Study of Entrepreneurial Dynamics (PSED). A 2011 review of the GEM working bibliography indicates that GEM data is found in 93 peer-reviewed articles (representing 461 Web of Science citations), as well as fourteen doctoral dissertations at universities such as Mississippi State University,

Purdue University, and University of North Carolina, Chapel Hill. Likewise, a 2011 review of the PSED working bibliography indicates PSED data is used in over 70 peer reviewed articles, 50 books and book chapters, and 13 doctoral dissertations, including those completed at Clemson University, University of Kentucky, University of Illinois-Chicago, and University of Cincinnati.

A point of positive differentiation between the EEP dataset and the other two datasets (GEM and PSED) is that EEP allowed for input on procedure and inclusion of specific measures requested by the various contributors. So, where GEM- and PSED-based dissertations used measures predetermined by an outside panel of scholars and not by the doctoral candidates completing their dissertations, the EEP afforded its contributors greater autonomy and discretion with regard to which measures were included, when they were included, and to some extent how they were collected. Specifically, I was able to provide input on all study variables, temporal sequencing, and data collection to date, thus enabling me to monitor and offer feedback on the measures selected and ensure I was comfortable with the underlying psychometrics.[9] Moreover, continued flexibility is afforded going forward (e.g., I have included in the Wave 2 data collection multiple measures of nascent entrepreneurial behavior, including one specifically designed to tap individual behavioral categories in line with the commonly accepted discover – evaluate – exploit paradigm).

Measures

A complete list of items for each study variable is included as Appendix C.

Entrepreneurial self-efficacy (α = .74; respondents were students). ESE was measured with 19 items from McGee et al. (2009). Representative items are "Brainstorm (come up with) a new

[9] I requested the measures of ESE and nascent behavior be included and voted to support the project coordinators proposed measures of GSE and EI.

idea for a product or service" and "Estimate customer demand for a new product or service". Responses ranged from 0 to 100, and the survey prompt stated 0 = absolutely no confidence, 50 = a moderate level of confidence, and 100 = complete confidence.

Entrepreneurial Outcome Expectations (α = .79; respondents were students). Entrepreneurial outcome expectations were assessed using 4 items derived from Krueger (2000). A representative item is "To what extent do you expect to achieve financial reward outcomes (personal wealth, increase in personal income, etc.) by starting your own venture?" Responses were anchored on Likert-type scale ranging from 1 = "Not at all" to 7 = "Very much".

Entrepreneurial intent (α = .81; respondents were students). EI was measured with 6 items from Thompson (2009). This measure was selected for two reasons: (1) it was developed following thorough scale development procedures, as opposed to the Gaicomin et al. (2010) and Wilson et al. (2007) single-item measures, each of which involved no substantive validation; and (2) it offered parsimony over other existing measures of EI (cf., Liñán & Chen, 2009; Mazzarol et al., 1999; Krueger, 1993). A representative item is "Thinking of yourself, how true is it that you spend time learning about starting a firm." Responses were anchored on a Likert-type scale ranging from 1 = "Very untrue" to 5 = "Very true".

Generalized self-efficacy (α = .75; respondents were students). GSE was measured with 8 items from Chen et al. (2001). This measure was chosen based on findings by Scherbaum, Cohen-Charash, and Kern (2006) that it possessed sound psychometrics and outperformed other GSE measures with regard to item discrimination and relative efficiency. A representative item is "I am confident that I can perform effectively on many different tasks." Responses were anchored on a Likert scale ranging from 1 = "Strongly disagree" to 5 = "Strongly agree".

University Focus on Entrepreneurship. I assessed university focus on entrepreneurship by summating responses to three dichotomous items anchored 0 = no and 1 = yes from the EEP university survey. The three items were: (1) "Does your university have an established entrepreneurship center?", (2) "Does your university have a student club or organization focused on entrepreneurship?", and (3) "Does your university have a Chair or Professorship in entrepreneurship?" Data were obtained from university faculty via the EEP university survey.

University Teaching Orientation. I coded university teaching orientation from each respective University's AACSB profile available at http://tinyurl.com/2cv5plg using the "General Orientation" matrix. I anchored universities that prioritized teaching equal to 3 (high teaching emphasis), universities that indicated teaching was their lowest priority equal to 1 (low teaching emphasis), and universities that gave teaching and intellectual contributions equal weight equal to 2 (medium teaching emphasis). Appendix D contains a matrix explaining the exact coding methodology. Data were obtained from AACSB records accessed in January of 2012.

Exposure to Faculty. I coded exposure to faculty as the number of full-time undergraduate students per faculty full-time-equivalent. This data were obtained from each respective University's AACSB profile available at http://tinyurl.com/2cv5plg and accessed in January 2012.

Control Variables. As discussed in Chapter 3, SCCT posits that gender (Carter & Brush, 2004; Florin, Kerri, & Rossiter, 2007), ethnicity (Greene & Owen, 2004; MDBA, 2010), family business exposure (Matthews & Human, 2004; Carr & Sequeira, 2007), prior entrepreneurial experience (Isenberg, 2010, 2011), and prior work experience (Liñán & Chen, 2009) may impact

entrepreneurial self-efficacy, outcome expectations, and intentions. Thus, these variables are included as controls. While age is also theoretically impactful, the sample population varies little in this regard. Thus, age is not included. All control variables were student self-reported.

CHAPTER V: RESULTS

Descriptive statistics of the respondents from the 40 universities included in the study are provided in Table 3, and variable intercorrelations are provided in Table 4.

Table 3

Sample Characteristics

	M	***SD***
Prior Work Experience (years)	4.64	2.01
Group Size	21.13	10.94
Gender (%)		
Male	49.1	
Female	45.2	
No Response	5.7	
Minority (%)		
Self-Identified Minority	16.8	
Non-minority	72.7	
No Response	10.4	
Prior Entrepreneurial Experience (%)		
Yes	12.7	
No	79.9	
No Response	7.4	
Family Business Exposure (%)		
Yes	31.8	
No	60.4	
No Response	7.7	

Note. N = 5213. University group sizes ranged from 12 to 857.

Table 4

Variable Means, Standard Deviations, & Intercorrelations

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1	GSE	3.90	.51										
2	ESE	69.73	38.03	.41**									
3	EOE	5.61	1.05	.41**	.24**								
4	UTO	1.42	.39	-.08	-.14*	.04							
5	SEF	21.19	7.81	-.12	.07	-.12	.08						
6	UEF	1.57	1.00	.07	.00	-.12	-.15*	-.26*					
7	PWE	4.64	2.01	.17**	.20**	-.12	-.10	.28**	.16*				
8	PEE	1.22	.83	.03	.13*	.11	.12	.29**	-.30*	.18**			
9	PFBE	1.92	.69	-.03	.02	.03	.12	.09	-.15*	.09	.47**		
10	Gender	.52	.50	-.04	-.04	.08	.01	.03	-.05	.13*	.15*	-.02	
11	Minority	.16	.37	.09	.10	.18**	-.08	-.17	-.02	-.03	-.12	-.01	.02

Note. N = 5213 for all correlations.

* $p < .05$, ** $p < .01$

Following recommendations from Gujarati (2003), panel data regression was used in all analyses in order to control for the effect of group (i.e., the respective university with which each respondent is affiliated). Panel data analysis enhances regression analysis by allowing for spatial (e.g., group) and / or temporal (e.g., time) dimensions (Yaffee, 2003). For hypotheses where no group effects were hypothesized fixed-effect panel regression analyses were conducted. Fixed-effect panel regression assumes constant variance and the same slope exist across all respondents, and examines group differences in intercepts (Park, 2009). For hypotheses where group effects were hypothesized random-effect panel regression analyses were conducted. This approach estimates variance components for groups and error, assuming the same slopes and intercept (Park, 2009). Given group was the only dummy variable considered (viz., time was not also a factor), all analyses were one-way. Hierarchal linear regressions were also run following procedures outlined in Pallant (2007) to verify accuracy of the findings, and results from these follow up analyses are consistent with the panel data analysis findings.

Hypothesis 1a posited that GSE will be positively related to both entrepreneurial self-efficacy (H1a) and entrepreneurial outcome expectations (H1b). To test Hypothesis 1 I used a fixed effects panel regression. Results of the fixed-effects regression of entrepreneurial self-efficacy on generalized self-efficacy (Table 5) and of entrepreneurial outcome expectations on generalized self-efficacy (Table 6) indicate that generalized self-efficacy did positively impact both entrepreneurial self-efficacy and entrepreneurial outcome expectations. Thus, Hypothesis 1 is supported. Hypothesis 2 posited that university teaching orientation will be positively related to both entrepreneurial self-efficacy (H2a) and entrepreneurial outcome expectations (H2b). Given the inclusion of teaching orientation, a group level variable, I used a random-effects panel regression to test this hypothesis (the lack of group variation makes a fixed effects model

impossible). Results of the random-effects panel regression for H2a (Table 7) and H2b (Table 8) failed to find a significant effect. Thus, Hypothesis 2 is not supported.

Table 5

Fixed-Effects Regression of Entrepreneurial Self-Efficacy on Generalized Self-Efficacy

	Coef.	Std. Err.	*t*	*p*
GSE	7.74	1.06	7.28	0.00
Minority	-3.38	2.11	-1.60	0.11
Gender	-3.59	1.05	-3.41	0.00
PWE	0.38	0.10	3.87	0.00
PEE	2.60	1.46	1.78	0.08
FBE	0.72	1.07	0.68	0.50
Constant	3.13	4.46	9.67	0.00

Note. N (obs) = 4453, N (groups) = 36; $F(7, 4410) = 14.97$, $p < .001$.
GSE = general self-efficacy; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Table 6

Fixed-Effects Regression of Entrepreneurial Outcome Expectations on Generalized Self-Efficacy

	Coef.	Std. Err.	*t*	*p*
GSE	0.60	0.03	20.25	0.00
Minority	-0.08	0.06	-1.30	0.19
Gender	0.03	0.03	1.00	0.32
PWE	-0.01	0.00	-2.81	0.01
PEE	0.04	0.04	1.08	0.28
PFBE	0.18	0.03	6.01	0.00
Constant	3.41	0.12	27.62	0.00

Note. N (obs) = 4459, N (groups) = 36; $F(7, 4416) = 68.04$, $p < .001$.
GSE = generalized self-efficacy; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Table 7

Random-Effects Regression of Entrepreneurial Self-Efficacy on Teaching Orientation

	Coef.	Std. Err.	*t*	*p*
UTO	7.08	4.57	1.55	0.12
Minority	-3.98	2.09	-1.91	0.06
Gender	-4.12	1.04	-3.97	0.00
PWE	0.42	0.10	4.41	0.00
PEE	2.88	1.44	2.00	0.05
PFBE	1.18	1.06	1.11	0.27
Constant	58.15	11.44	5.08	0.00

Note. N (obs) = 4537, N (groups) = 36; Wald $\chi^2(7) = 54.74$, $p < .001$.
UTO = university teaching orientation; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Table 8

Random-Effects Regression of Entrepreneurial Outcome Expectations on Teaching Orientation

	Coef.	Std. Err.	*t*	*p*
UTO	0.07	0.08	0.81	0.42
Minority	-0.10	0.06	-1.57	0.12
Gender	-0.01	0.03	-0.22	0.83
Prior Work Exp.	-0.00	0.00	-0.93	0.35
Prior Entre. Exp.	0.08	0.04	1.80	0.07
Prior F.B.E.	0.21	0.03	6.86	0.00
Constant	5.55	0.21	27.09	0.00

Note. N (obs) = 4546, N (groups) = 36; Wald $\chi^2(7) = 65.29$, $p < .001$.
UTO = university teaching orientation; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Hypothesis 3 posited that higher levels of student exposure to faculty should result in greater entrepreneurial self-efficacy (H3a) and entrepreneurial outcome expectations (H3b). Results from a random-effects panel regression (Tables 9 and 10, respectively) indicate that greater student exposure to faculty did not significantly impact entrepreneurial self-efficacy or entrepreneurial outcome expectations. Thus, Hypothesis 3 is not supported. Hypothesis 4 posited

that a university focus on entrepreneurship positively impacts both entrepreneurial self-efficacy (H4a) and entrepreneurial outcome expectations (H4b). Results from independent random-effects panel regressions (Tables 11 and 12, respectively) indicate that university focus on entrepreneurship did not significantly impact entrepreneurial self-efficacy or entrepreneurial outcome expectations. Thus, Hypothesis 4 is not supported.

Table 9

Random-Effects Regression of Entrepreneurial Self-Efficacy on Exposure to Faculty

	Coef.	Std. Err.	*t*	*p*
SEF	0.013	0.07	0.19	0.85
Minority	-1.47	1.04	-1.41	0.16
Gender	-3.78	0.51	-7.35	0.00
PWE	0.35	0.05	7.62	0.00
PEE	0.15	0.73	0.21	0.84
PFBE	2.76	0.52	5.29	0.00
Constant	70.39	1.63	43.07	0.00

Note. N (obs) = 3724, N (groups) = 25; Wald $\chi^2(7) = 149.06$, $p < .001$.
SEF = student exposure to faculty; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Table 10

Random-Effects Regression of Entrepreneurial Outcome Expectations on Exposure to Faculty

	Coef.	Std. Err.	*t*	*p*
SEF	-0.00	0.01	-0.38	0.70
Minority	-0.08	0.07	-1.21	0.23
Gender	-0.01	0.03	-0.31	0.76
PWE	-0.00	0.00	-0.37	0.71
PEE	0.07	0.05	1.45	0.15
PFBE	0.21	0.04	6.07	0.00
Constant	5.71	0.14	41.03	0.00

Note. N (obs) = 3717, N (groups) = 25; Wald $\chi^2(7) = 54.78$, $p < .001$.
SEF = student exposure to faculty; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Table 11

Random-Effects Regression of Entrepreneurial Self-Efficacy on University Entrepreneurship Focus

	Coef.	Std. Err.	*t*	*p*
UEF	2.50	2.24	1.11	0.27
Minority	-3.91	2.09	-1.87	0.06
Gender	-4.11	1.04	-3.95	0.00
PWE	0.42	0.10	4.43	0.00
PEE	2.92	1.44	2.03	0.04
PFBE	1.16	1.06	1.09	0.27
Constant	71.60	4.31	16.62	0.00

Note. N (obs) = 4535, N (groups) = 36; Wald $\chi^2(7) = 53.35$, $p < .001$. UEF = university entrepreneurship focus; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Table 12

Random-Effects Regression of Entrepreneurial Outcome Expectations on University Entrepreneurship Focus

	Coef.	Std. Err.	*t*	*p*
UEF	0.01	0.04	0.22	0.83
Minority	-0.09	0.06	-1.55	0.12
Gender	-0.01	0.03	-0.22	0.83
PWE	-0.00	0.00	-0.91	0.36
PEE	0.08	0.04	1.84	0.07
PFBE	0.21	0.03	6.87	0.00
Constant	5.70	0.09	66.76	0.00

Note. N (obs) = 4544, N (groups) = 36; Wald $\chi^2(7) = 64.85$, $p < .001$. UEF = university entrepreneurship focus; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Hypothesis 5 posited that entrepreneurial self-efficacy (H5a) and entrepreneurial outcome expectations (H5b) are positively related to entrepreneurial intentions. Results from the fixed-effects panel regression of entrepreneurial intentions on entrepreneurial self-efficacy (Table 13) and of entrepreneurial intentions on entrepreneurial outcome expectations (Table 14) indicate

that entrepreneurial self-efficacy and entrepreneurial outcome expectations did positively impact entrepreneurial intentions. Thus, Hypothesis 5 is supported.

Table 13

Fixed-Effects Regression of Entrepreneurial Intentions on Entrepreneurial Self-efficacy

	Coef.	Std. Err.	*t*	*p*
ESE	0.01	0.00	9.97	0.00
Minority	-0.09	0.08	-1.20	0.23
Gender	-0.39	0.04	-10.17	0.00
PWE	0.01	0.00	4.07	0.00
PEE	0.23	0.05	4.33	0.00
PFBE	0.40	0.04	10.41	0.00
Constant	4.04	0.07	57.21	0.00

Note. N (obs) = 4434, N (groups) = 36; $F(7, 4391) = 58.10$, $p < .001$. ESE = entrepreneurial self-efficacy; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Table 14

Fixed-Effects Regression of Entrepreneurial Intentions on Entrepreneurial Outcome Expectations

	Coef.	Std. Err.	*t*	*p*
EOE	0.35	0.02	19.16	0.00
Minority	-0.09	0.07	-1.19	0.23
Gender	-0.41	0.04	-11.28	0.00
PWE	0.02	0.00	5.12	0.00
PEE	0.22	0.05	4.37	0.00
PFBE	0.33	0.04	8.86	0.00
Constant	2.47	0.12	21.05	0.00

Note. N (obs) = 4441, N (groups) = 36; $F(7, 4398) = 99.37$, $p < .001$. EOE = entrepreneurial outcome expectations; PWE = prior work experience; PEE = prior entrepreneurial experience; PFBE = prior family business exposure.

Hypotheses 6 and 7 focused on mediation, so I followed Baron and Kenny's (1986) seminal four step methodology to test for mediation effects.[10] In the first step the outcome measure is regressed on the predictor in order to initially determine whether an effect exists to be mediated. Following this, the mediator is regressed on the predictor, followed by the final step where the outcome measure is regressed on both the mediator and the predictor. If all three models provide significant results, and if the coefficient is reduced from the first to the third models, significant mediation is indicated.

Hypothesis 6 posited entrepreneurial self-efficacy mediates (H6a) the relationship between person inputs and entrepreneurial outcome expectations, (H6b) the relationship between person inputs and entrepreneurial intentions, and (H6c) the relationship between environmental / background inputs and entrepreneurial intentions. Table 15 presents the results for Hypothesis 6a, Table 16 presents the results for Hypothesis 6b, and Table 17 presents the results for Hypothesis 6c. Results indicate that entrepreneurial self-efficacy mediated the relationship between person inputs and both entrepreneurial outcome expectations and entrepreneurial intentions. Thus, hypotheses 6a and 6b are supported. Results for Hypothesis 6c did not evidence a significant mediating effect.

[10] Debate exists over the best statistical approach for testing for mediation effects. MacKinnon and colleagues (2002) note "…the large number of alternative methods makes it difficult for researchers to decide which one to use." I chose Baron & Kenny's approach given it is commonly used (2,000+ studies; MacKinnon et al., 2002), well cited (over 30,000 on Google Scholar), and is a standard part of a researcher's toolkit (Zhao, Lynch, & Chen, 2010).

Table 15

Fixed-Effects Regressions of Entrepreneurial Self-Efficacy as a Mediator between Person Inputs and Entrepreneurial Outcome Expectations

	Coef.	Std. Err.	*t*	*p*
Step 1				
GSE	.627	.027	23.44	.000
Gender	.000	.028	.01	.992
Minority	-.128	.056	-2.26	.024
Step 2				
GSE	9.688	.876	11.06	.000
Minority	-4.038	1.843	-2.19	.028
Step 3				
GSE	.601	.027	22.03	.000
ESE	.002	.000	3.97	.000
Minority	-.101	.057	-1.79	.073
ESE	.003	.000	6.05	.000

Note. GSE = generalized self-efficacy; ESE = entrepreneurial self-efficacy.

Table 16

Fixed-Effects Regressions of Entrepreneurial Self-Efficacy as a Mediator between Person Inputs and Entrepreneurial Intentions

	Coef.	Std. Err.	*t*	*p*
Step 1				
GSE	.700	.034	20.60	.000
Gender	-.429	.035	-12.24	.000
Minority	-.189	.050	-3.79	.000
Step 2				
GSE	9.688	.876	11.06	.000
Gender	-4.175	.890	-4.69	.000
Minority	-3.158	1.291	-2.45	.014
Step 3				
GSE	.654	.034	18.98	.000
ESE	.006	.001	11.23	.000
Gender	-.396	.035	-11.20	.000
ESE	.007	.001	12.98	.000
Minority	-.164	.050	-3.30	.001
ESE	.007	.001	12.19	.000

Note. GSE = generalized self-efficacy; ESE = entrepreneurial self-efficacy.

Table 17

Random-Effects Regressions of Entrepreneurial Self-Efficacy as a Mediator between Environmental / Background Inputs and Entrepreneurial Intentions

	Coef.	Std. Err.	*t*	*p*
Step 1				
UTO	.247	.178	1.39	.165
SEF	-.010	.011	-.92	.356
UEF	.124	.089	1.40	.161

Note. UTO = university teaching orientation; SEF = student exposure to faculty; UEF = university entrepreneurship focus.

Hypothesis 7 posited entrepreneurial outcome expectations mediates (H7a) the relationship between person inputs and entrepreneurial intentions, and (H7b) the relationship

between environmental / background inputs and entrepreneurial intentions. Table 18 presents the results for Hypothesis 7a and Table 19 presents the results for Hypothesis 7b. Results indicate that entrepreneurial outcome expectations mediated the relationship between person inputs and entrepreneurial intentions, but not between environmental / background inputs and entrepreneurial intentions. Thus, hypothesis 7a was supported and 7b was not supported.

Table 18

Fixed-Effects Regressions of Entrepreneurial Outcome Expectations as a Mediator between Person Inputs and Entrepreneurial Intentions

	Coef.	Std. Err.	*t*	*p*
Step 1				
GSE	.700	.034	20.60	.000
Gender	-.429	.035	-12.24	.000
Minority	-.189	.050	-3.79	.000
Step 2				
GSE	.627	.027	23.44	.000
Gender	.000	.028	.01	.992
Minority	-.134	.040	-3.38	.001
Step 3				
GSE	.517	.035	14.74	.000
EOE	.267	.017	15.75	.000
Minority	-.142	.048	-2.93	.003
EOE	.346	.017	20.20	.000

Note. GSE = generalized self-efficacy; EOE = entrepreneurial outcome expectations.

Table 19

Fixed-Effects Regressions of Entrepreneurial Outcome Expectations as a Mediator between Environmental Experiences and Entrepreneurial Intentions

	Coef.	Std. Err.	*t*	*p*
Step 1				
UTO	.247	.178	1.39	.165
SEF	-.010	.011	-.92	.356
UEF	.124	.089	1.40	.161

Note. UTO = university teaching orientation; SEF = student exposure to faculty; UEF = university entrepreneurship focus.

CHAPTER VI: DISCUSSION AND CONCLUSION

The goal of this dissertation was to apply social cognitive career theory to entrepreneurship to (a) explore self-efficacy as it relates to entrepreneurial intentions and entrepreneurial outcome expectations, (b) reconcile the roles of both domain-specific and generalized self-efficacy in this regard, and (c) explore how a new set of contextual variables (university teaching orientation, university focus on entrepreneurship, and student exposure to faculty) impact the formation of individual entrepreneurial career intentions. A summary of all study findings is presented in Table 20.

Table 20

Summary of Empirical Results

H		Supported
1a	GSE will be positively related to ESE.	Yes
1b	GSE will be positively related to EOE.	Yes
2a	University teaching orientation will be positively related to ESE.	No
2b	University teaching orientation will be positively related to EOE.	No
3a	Student exposure to faculty will be positively related to ESE.	No
3b	Student exposure to faculty will be positively related to EOE.	No
4a	University focus on entrepreneurship will be positively related to ESE.	No
4b	University focus on entrepreneurship will be positively related to EOE.	No
5a	ESE will be positively related to EI.	Yes
5b	EOE will be positively related to EI.	Yes
6a	ESE will mediate the person inputs – EOE relationship.	Yes
6b	ESE will mediate the person inputs – EI relationship.	Yes
6c	ESE will mediate the environ. /background inputs – EI relationship.	No
7a	EOE will mediate the person inputs – EI relationship.	Yes
7b	EOE will mediate the environ. / background inputs – EI relationship.	No

Note. *H* = Hypothesis. GSE = generalized self-efficacy; ESE = entrepreneurial self-efficacy; EOE = entrepreneurial outcome expectations; EI = entrepreneurial intentions.

Overall, the results generally supported the SCCT-informed hypotheses: Person inputs (GSE, gender, minority status) and some environmental / background inputs (prior work experience, prior entrepreneurship experience, and prior family business exposure) significantly impact entrepreneurial self-efficacy and entrepreneurial outcome expectations; entrepreneurial self-efficacy mediates the person input – entrepreneurial outcome expectations and person input – entrepreneurial intentions relationships, and entrepreneurial outcome expectations mediates the person inputs – entrepreneurial intentions relationship. Arguably, the results suggest the use of SCCT in entrepreneurial contexts is appropriate, thus adding to the domains in which the theory is applicable (cf., Graves, 2003; Stajkovic & Luthans, 1998; Benight & Bandura, 2004).

Next I discuss the role of a specific person input, generalized self-efficacy, seeking to better understand how generalized self-efficacy impacted entrepreneurial outcome expectations, entrepreneurial self-efficacy, and entrepreneurial intentions. As mentioned in Chapter 2, inconsistent findings plagued much of the past research into the relationship between person inputs and entrepreneurial intentions. Recent research (e.g., Baum et al., 2001; Baum & Locke, 2004; Shook et al., 2003) suggests this is because person inputs impact entrepreneurial intentions indirectly, a sentiment consistent with the results from this study. More specifically, results showed that generalized self-efficacy was positively related to entrepreneurial self-efficacy and entrepreneurial outcome expectations, that entrepreneurial self-efficacy and entrepreneurial outcome expectations mediated the generalized self-efficacy – entrepreneurial intentions relationship, and that entrepreneurial self-efficacy mediated the generalized self-efficacy – entrepreneurial outcome expectations relationship. Moreover, results support entrepreneurial self-efficacy and generalized self-efficacy as distinct constructs in entrepreneurship, each of which makes significant and individual contributions to the formation of entrepreneurial

outcome expectations and entrepreneurial intentions, and person inputs impact entrepreneurial intentions indirectly.

Results provided no support for the notion that university characteristics or context directly or indirectly affect entrepreneurial self-efficacy, entrepreneurial outcome expectations, or entrepreneurial intentions. Thinking this is a methodological artifact, I sought to explore if alternate operationalizations of the university teaching orientation and university entrepreneurship focus variables produced different results (Appendix E shows the post-hoc respecification details for both variables), but still no significant effects were detected. Thus, perhaps alternate interpretations of the general lack of findings are plausible.

First, it is possible that despite the best efforts of faculty and departments to foster these outcomes, the bureaucracy of universities as a whole inhibit the fostering of entrepreneurial intentions, a view that is consistent with some recent research (e.g., Fayolle & Byrne, 2010; Pilegaard, Moroz, & Neergaard, 2010). Similarly, perhaps operationalizing these variables from university self-report data fails to account for individual faculty differences. For example, I presumed all faculty at a given type of university possess similar teaching philosophies (i.e., faculty at research oriented universities were presumed to be research focused). Consider the typical research university employs both tenure track faculty and non-tenure track faculty (e.g., adjuncts, instructors, lecturers). While one could posit full time tenure track faculty are in alignment with university teaching orientation using Schneider's (1987) attraction-selection-attrition model (ASA), this presumption is likely inappropriate for non tenure track faculty who are predominantly part time employees or independent contractors hired primarily to teach a specific course or content area. That said, it is possible that university tenure policies weaken the role of attrition, and even if the ASA model holds, it is still also a jump to presume that because a

given faculty member wants to be teaching focused they possess the dynamism and presentation skills necessary for success (cf., Felder, 1994; Flood & Moll, 1990; Rugarcia, 1991).

Another possible explanation, assuming the implicit goal of entrepreneurship education is to produce more and better entrepreneurs (Ronstadt, 1985), is that perhaps the non-significant results indicate where we are today (i.e., universities are simply not making the impact society expects them to make). If this is the case, researchers' calls (e.g., Henderson & Robertson, 2000; Liñán et al., 2010; Raposo & do Paco, 2010) to implement more ambitious education initiatives (e.g., awareness seminars, institutional restructuring, beginning to teach entrepreneurial skills at earlier ages, etc.) are especially prudent. Lastly, while from a purely statistical standpoint the sample size was adequate for the tests performed, only 40 universities were included in the analyses, perhaps limiting the generalizability of the finding. The Entrepreneurship Education Project operates on a rolling completion basis with only complete university data being added to the published datasets. Currently there are over 250 universities involved, yet the most recent dataset available contains only 80 universities that completed the Phase I data collection. Of the 80, 40 were excluded from the analyses because they were not AACSB accredited and/or did not yet complete the university survey.

Limitations & Future Research

Although the present study (a) helps to reconcile the generalized self-efficacy – entrepreneurial self-efficacy relationship, (b) adopts a fresh theoretical approach (viz., SCCT) in the process, and (c) explores the impact of new contextual variables on individual entrepreneurial career intentions, the limitations of the results must be considered. First, despite student sample appropriateness for testing the hypotheses posited, it is possible that the sample possessed some

range restriction given students have a higher propensity for firm creation (Liñán & Santos, 2007). Second, the present study shares a common limitation with much of the existing research into entrepreneurial self-efficacy and entrepreneurial intentions: the link between entrepreneurial intentions and behavior goes unexplored. Going forward, the longitudinal nature of the EEP will enable this linkage to be tested (e.g., behavior variables are included beginning in the Phase II EEP data collection).[11] Third, in the present study a multitude of variables known to be relevant to the development of entrepreneurial self-efficacy and intentions (e.g., optimism, affect, social skill, etc.) were omitted thus prohibiting the testing of a fully specified model. Unfortunately this is, in part, a consequence of the EEP dataset as it stands today: inclusion of all potential variables was not possible in the Phase I data collection. While the EEP Phase I data collection construct selection process was driven by the core tenants of SCCT (i.e., all core SCCT variables were included), selection of more peripheral variables (i.e., the exact person inputs included) were determined by majority vote of the collaborators and subject to survey space limitations (see Elstrott's 1987 survey length considerations for entrepreneurship research). Ultimately, a conscious choice was made to defer collecting additional person inputs until the Phase II and III data collections rather than truncating some of the longer measures (e.g., 18-item ESE scale) to make room. A fourth limitation of the present study is the possibility that a form of common method bias influenced some of the reported results. While the overarching Entrepreneurship Education Project design intentionally relies on multi-source data collected at different points in time to minimize common method concerns, some hypotheses tested in this study contained variables collected at a single point in time from a self-report questionnaire. Arguably in these

[11] Given the EEP is only 18 months in the making collecting behavior variables is premature. Research suggests within a student population time needs to elapse in order for students to marshal the necessary resources (e.g., human capital, financial capital, social capital) to launch a venture (Reynolds, Camp, Bygrave, Autio, & Hay, 2001; Sternberg & Wennekers, 2005).

instances the individual respondent is the best source of the information sought, thus strengthening the validity of the data while simultaneously opening the door for common method bias concerns. While much disagreement exists as to what, if any, effect common methods actually pose (cf., Crampton & Wagner, 1994; Lindell & Whitney, 2001; Spector, 2006), the mere existence of common method bias potential is enough to warrant rejection by reviewers at some top-tier outlets (Baugh, Hunt, & Scandura, 2006). Regardless, going forward a more multimodal measurement approach would ease common method concerns thus adding greater credibility (Hoyt, Warbasse, & Chu, 2006), as the best time to address common method concerns is ex-ante given ex-post statistical control approaches are limited and thus not recommended (Conway & Lance, 2010). Future research should look to explore moderating relationships (e.g., gender as a moderator of the entrepreneurial self-efficacy – intentions relationship) and to empirically test the hypotheses simultaneously, perhaps using a structural or path model.

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APPENDIX A: SAMPLE EEP STUDENT SURVEY

LSU LOUISIANA STATE UNIVERSITY

A GLOBAL LOOK AT UNDERGRADUATE EDUCATION

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Purpose of the study: To assess the impact of individual difference variables (e.g., personality, attitudes, politics, perceptions) on motivation and work outcomes.

Inclusion Criteria: Students majoring and minoring in entrepreneurship and management will be solicited to voluntary participate in this study by their course instructor.

Study Procedures: Study participants will be asked to complete a serious of various personality and intention measures.

Benefits: As benefits to the participants they will have the option of receiving a summary of the study findings. Since findings will also be reviewed in class during the latter part of the given semester, students will also benefit for a more comprehensive understanding of entrepreneurial behavior as well as exposure to the types of personality testing instruments they are likely to encounter in a work setting upon graduation. Students will be rewarded for their field data collection experience with the extra credit approximately equivalent to a ½ letter grade increase on their final exam (or equivalent to be determined by individual course instructors).

Risks/Privacy: Those participating in this study authorize the researchers to collect confidential information for research use, such as name, age, etc. The data are stored in password protected computers and will not be accessible other than to the researchers. Only the researchers will have access to the database. This database will be kept in a locked/secure location. Once all study data is collected and entered into the database, all names will be deleted from the database. Only aggregate data will be reported in any study. This is a confidential study. Data will be kept confidential unless release is legally compelled.

Right to Refuse: Participation in the study is voluntary and subjects may change their mind and withdraw from the study at any time without penalty or loss of any benefit to which they are otherwise entitled.

Alternatives: Students, if they choose to pursue extra credit, have the option of writing a three page, double-spaced paper (12 pt Times New Roman) on a topic relevant to the course they are enrolled and selected by the course instructor. The course instructor will grade all papers as satisfactory and unsatisfactory, unsatisfactory papers will have to make suggested revisions prior to receiving extra credit. The amount of extra credit awarded for completion of this alternative is exactly equivalent to the amount earned for participating above.

Withdrawal: If you choose not to participate in the whole or a part of the study, subjects will not be penalized or lose any benefits to which they are otherwise entitled.

Signature: The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics in to the investigators. If I have questions about subjects' rights or other concerns, I can contact Robert C. Mathews, Chairman, LSU Institutional Review Board, (225) 578-8692. I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with an electric or a paper copy of this consent form if signed by me. I have read and I understand the procedure described above. I agree to participate in the procedure and I have received a copy of this statement.

As a way to show our appreciation for your support of this project, we hope you enter our drawing for **$10,000.00** worth of Visa Gift Cards by providing your name and e-mail address at the end of the survey. You might win one of one hundred **$100.00 Visa Gift Cards** (100 prizes, verifiable retail value of $100.00 each). 100 prizes will be awarded out of approximately 10,000 potential applicants. As such, you will have a 1 in 100 chance of receiving this prize. No purchase or participation in the study is necessary in order to be eligible to enter the drawing. You may still enter the prize drawing by providing your e-mail address at the end of this survey without having completed the survey. Limit one entry per person.

Do you agree to participate in this survey?

☐ **Yes** ☐ **No**

Name_____ Signature_____ Date_____

Have you started a new venture/business that is currently operating? (Please check one box):

☐ Yes (***please answer the questions in Section A below***) ☐ No (***Please skip to Section B***)

A. *The following section asks you about the most recent venture/business you have started (please check only one box for each question).*

1) Did you start this new venture:

☐ In your hometown ☐ In your university town ☐ Elsewhere

2) Did you start this new venture:

☐ On your own ☐ With partners

3) If you started this new venture with partners, were these partners:

☐ Family members ☐ Friends from home ☐ Friends from school

☐ Other (please specify): _____

4) Which of the following best describes your working situation when you started your new venture:

☐ I started a full-time venture (i.e., I did ***not*** have a job in addition to working for your new venture)

☐ I started a part-time venture (i.e., I did have a job in addition to working for your new venture)

5) Did you start this venture internationally (i.e., started operations in more than one country)?

☐ Yes ☐ No

6) As of the last day of the previous month, how many of each of the following types of employees (including yourself) work for your venture?

Full-time paid employees_____

Part-time paid employees_____

Interns (unpaid employees)_____

7) For your 2010 fiscal year, what is the projected gross revenue you expect for your venture?

☐ Under $25,000 ☐ $25,001-$100,000 ☐ $100,001-$500,000

☐ $500,001-$1,000,000 ☐ $1,000,001-$5,000,000 ☐ $5,000,001 or more

If you have answered the questions above, please skip to the questions in Section C

B. *The following section asks you about your plans to start your own venture/business (please check only one box for each question).*

1) Are you considering starting a new venture? (Please check one box):

☐ Yes *(please answer the questions below)* ☐ No *(Please skip to Section C)*

2) Are you considering starting this new venture:

☐ In your hometown ☐ In your university town ☐ Elsewhere

3) Are you considering starting this new venture:

☐ On your own ☐ With partners

4) If you are considering starting this new venture with partners, would these partners be:

☐ Family members ☐ Friends from home ☐ Friends from school

☐ Other (please specify): _____

5) Are you considering:

☐ Starting a full-time venture (i.e., you intend to ***not*** have a job in addition to working for your new venture)

☐ Starting a part-time venture (i.e., you intend to have a job in addition to working for your new venture)

C *The following section asks you about your general attitudes. For each of the following, please indicate the extent to which you agree or disagree using the following scale.*

		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1)	People should be willing to help others who are less fortunate.	☐1	☐2	☐3	☐4	☐5
2)	Those in need have to learn to take care of themselves and not depend on others.	☐1	☐2	☐3	☐4	☐5
3)	Personally assisting people in trouble is very important to me.	☐1	☐2	☐3	☐4	☐5
4)	These days people need to look after themselves and not overly worry about others.	☐1	☐2	☐3	☐4	☐5

For each of the following, when thinking of yourself, how true is it that you:

		Very Untrue	Untrue	Somewhat Untrue	Neither True or Untrue	Somewhat True	True	Very True
1)	Never search for business start-up opportunities	☐1	☐2	☐3	☐4	☐5	☐6	☐7
2)	Are saving money to start a new venture	☐1	☐2	☐3	☐4	☐5	☐6	☐7
3)	Do not read books on how to set up a venture	☐1	☐2	☐3	☐4	☐5	☐6	☐7
4)	Have no plans to launch your own venture	☐1	☐2	☐3	☐4	☐5	☐6	☐7
5)	Spend time learning about starting a new venture	☐1	☐2	☐3	☐4	☐5	☐6	☐7
6)	Intend to set up a new venture in the future	☐1	☐2	☐3	☐4	☐5	☐6	☐7

Indicate the opinions of the following people regarding your choice to start a new venture/business. Please indicate "Not Applicable" if you do not have a particular relationship (i.e., spouse/significant other)

		Extremely Negative	Negative	Slightly Negative	Neither Negative or Positive	Slightly Positive	Positive	Extremely Positive	Not Applicable / I don't know
1)	My parent(s)	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
2)	My spouse/significant other	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
3)	My sibling(s)	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
4)	My relatives	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
5)	My close friends	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
6)	In general my acquaintances	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8

Indicate how important the opinions of the following people are to you in your choice of employment status. Please indicate "Not Applicable" if you do not have a particular relationship (i.e., spouse/significant other):

		Not At All Important	Low Importance	Slightly Important	Neutral	Moderately Important	Very Important	Extremely Important	Not Applicable / I don't know
1)	My parent(s)	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
2)	My spouse/significant other	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
3)	My sibling(s)	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
4)	My relatives	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
5)	My close friends	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
6)	In general my acquaintances	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8

The following statements ask about your thoughts and feelings in various situations. For each statement indicate how well it describes you.

		Does Not At All Describe Me	Describes Me Slightly	Describes Me Somewhat	Describes Me Well	Describes Me Very Well
1)	I often have tender, concerned feelings for people less fortunate than me.	☐1	☐2	☐3	☐4	☐5
2)	Sometimes I don't feel very sorry for other people when they are having problems.	☐1	☐2	☐3	☐4	☐5
3)	When I see someone being taken advantage of, I feel kind of protective toward them.	☐1	☐2	☐3	☐4	☐5
4)	Other people's misfortunes do not usually disturb me a great deal.	☐1	☐2	☐3	☐4	☐5
5)	When I see someone treated unfairly, I sometimes don't feel very much pity for them.	☐1	☐2	☐3	☐4	☐5
6)	I am often quite touched by things that I see happen.	☐1	☐2	☐3	☐4	☐5
7)	I would describe myself as a pretty soft-hearted person.	☐1	☐2	☐3	☐4	☐5

D. *This section lists various activities. On the line to the right of each activity, please rate how confident you are in your ability to accomplish it at the present time. Rate your degree of confidence by writing a number between 0 and 100, where 0 indicates you have absolutely no confidence in your ability, 50 indicates you are moderately certain you can successfully complete the activity, and 100 indicates you are completely confident in your ability.*

How much confidence do you have in your ability to _____?

1. *Come up with a new idea for a product or service on your own*_____
2. *Brainstorm with others to come up with a new idea for a product or service.*_____
3. *Identify the need for a new product or service.*_____
4. *Design a product or service that will satisfy customer needs and wants.*_____
5. *Estimate customer demand for a new product or service.*_____
6. *Determine a competitive price for a new product or service.*_____
7. *Estimate the amount of start-up funds and working capital necessary to start a new venture.*_____
8. *Design an effective marketing/advertising campaign for a new product or service.*_____
9. *Get others to identify with and believe in my vision and plans for a new venture.*_____
10. *Network (i.e., make contact with and exchange information with others)*_____
11. *Clearly and concisely explain verbally/in writing my new venture ideas in everyday terms.*_____
12. *Supervise employees.*_____
13. *Recruit and hire employees.*_____
14. *Delegate tasks and responsibilities to employees in my venture.*_____
15. *Deal effectively with day-to-day problems and crises.*_____
16. *Inspire, encourage, and motivate my employees.*_____
17. *Train employees.*_____
18. *Organize and maintain the financial records of my venture.*_____
19. *Manage the financial assets of my venture.*_____
20. *Read and interpret financial statements.*_____

E *The following section asks you about your general attitudes and past experiences. For each of the following, please indicate the extent to which you agree or disagree using the following scale.*

		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1)	I'd rather depend on myself than others.	☐1	☐2	☐3	☐4	☐5
2)	I rely on myself most of the time; I rarely rely on others.	☐1	☐2	☐3	☐4	☐5
3)	I often do "my own thing."	☐1	☐2	☐3	☐4	☐5
4)	My personal identity, independent of others, is very important to me.	☐1	☐2	☐3	☐4	☐5
5)	It is important that I do my job better than others.	☐1	☐2	☐3	☐4	☐5
6)	Winning is everything.	☐1	☐2	☐3	☐4	☐5
7)	Competition is the law of nature.	☐1	☐2	☐3	☐4	☐5
8)	When another person does better than I do, I get tense and aroused.	☐1	☐2	☐3	☐4	☐5

		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
9)	If a coworker gets a prize, I would feel proud.	☐1	☐2	☐3	☐4	☐5
10)	The well-being of my coworkers is important to me.	☐1	☐2	☐3	☐4	☐5
11)	To me, pleasure is spending time with others.	☐1	☐2	☐3	☐4	☐5
12)	I feel good when I cooperate with others.	☐1	☐2	☐3	☐4	☐5
13)	Parents and children must stay together as much as possible.	☐1	☐2	☐3	☐4	☐5
14)	It is my duty to take care of my family, even when I have to sacrifice what I want.	☐1	☐2	☐3	☐4	☐5
15)	Family members should stick together, no matter what sacrifices are required.	☐1	☐2	☐3	☐4	☐5
16)	It is important to me that I respect the decisions made by my groups.	☐1	☐2	☐3	☐4	☐5

We are interested in the entrepreneurial experiences of your family members. In the first column, please insert the number corresponding to the following answers: 1=Yes, 2=No, or 3=I don't know

*In the second column, we are interested in whether exposure to your own or others' entrepreneurial activities added to or detracted from **your own** confidence in your ability to successfully start and run an entrepreneurial business/venture. So in the second column, please insert the number corresponding to the following answers (so, for instance, in the first row, if your parents started a new venture, did your exposure to their experience impact your confidence?)*

1=Added to your confidence, 2=detracted from your confidence, 3=had no impact on your confidence, 4=not applicable/no such experience

*In the third column, please indicate whether **the particular individual(s) identified in the first column** have owned a business that failed, where "failure" implies being forced to cease operations as an organization due to lack of resources and/or financial distress. This excludes selling one's business, merging, or stopping it because there are better alternatives. So in the third column, please insert the number corresponding to the following answers: 1=Yes, 2=No, or 3=I don't know*

		Presence of Experience	Experience Rating	Business Failure
1)	Did your parents/guardians ever start a new venture?	_____	_____	_____
2)	Did any of your siblings ever start a new venture?	_____	_____	_____
3)	Did any of your grandparents ever start a new venture?	_____	_____	_____
4)	Have you ever held a paying position in a new company / entrepreneurial venture?	_____	_____	[redacted]
5)	Have you ever held a non-paying position (such as intern) at a new company / entrepreneurial venture?	_____	_____	

To what extent do you expect to achieve the following outcomes by starting your own venture?

		Not At All	Very Little	Somewhat	Unsure	Moderately	A Good Deal	Very Much
1)	Financial rewards (personal wealth, increase personal income, etc.)	☐1	☐2	☐3	☐4	☐5	☐6	☐7
2)	Independence/Autonomy (personal freedom, be your own boss, etc.)	☐1	☐2	☐3	☐4	☐5	☐6	☐7
3)	Personal rewards (public recognition, personal growth, to prove I can do it, etc.)	☐1	☐2	☐3	☐4	☐5	☐6	☐7
4)	Family security (to secure future for family members, to build a business to pass on, etc.)	☐1	☐2	☐3	☐4	☐5	☐6	☐7
5)	*Other (please specify)*							

For each of the following questions, please indicate the extent to which you agree or disagree using the following scale

		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1)	I can always manage to solve difficult problems if I try hard enough.	☐1	☐2	☐3	☐4	☐5
2)	If someone opposes me, I can find the means and ways to get what I want.	☐1	☐2	☐3	☐4	☐5
3)	It is easy for me to stick to my aims and accomplish my goals.	☐1	☐2	☐3	☐4	☐5
4)	I am confident that I could deal efficiently with unexpected events.	☐1	☐2	☐3	☐4	☐5
5)	Thanks to my resourcefulness, I know how to handle unforeseen situations.	☐1	☐2	☐3	☐4	☐5
6)	I can solve most problems if I invest the necessary effort.	☐1	☐2	☐3	☐4	☐5
7)	I can remain calm when facing difficulties because I can rely on my coping abilities.	☐1	☐2	☐3	☐4	☐5
8)	When I am confronted with a problem, I can usually find several solutions.	☐1	☐2	☐3	☐4	☐5
9)	If I am in trouble, I can usually think of a solution.	☐1	☐2	☐3	☐4	☐5
10)	I can usually handle whatever comes my way.	☐1	☐2	☐3	☐4	☐5
11)	I often think about becoming an entrepreneur.	☐1	☐2	☐3	☐4	☐5
12)	I would like to see myself as an entrepreneur.	☐1	☐2	☐3	☐4	☐5
13)	Becoming an entrepreneur would be an important part of who I am.	☐1	☐2	☐3	☐4	☐5
14)	When I think about it, the term "entrepreneur" would fit me pretty well.	☐1	☐2	☐3	☐4	☐5
15)	I am always thinking about becoming an entrepreneur.	☐1	☐2	☐3	☐4	☐5
16)	It is important for me to express my entrepreneurial aspirations.	☐1	☐2	☐3	☐4	☐5

List all the types of businesses/ventures you have started (by yourself or with others) that have created new wealth (i.e., indicate the industry in which the venture operated):

_____

_____

_____

Have you ever owned a business/venture that failed, where "failed" implies being forced to cease operations as an organization due to lack of resources and/or financial distress? This excludes selling one's venture, merging, or stopping it because there are better alternatives

☐ Yes ☐ No

F. *This section lists various activities. On the line to the right of each activity, please rate how confident you are in your ability to accomplish it at the present time. Rate your degree of confidence by writing a number between 0 and 100, where 0 indicates you have absolutely no confidence in your ability, 50 indicates you are moderately certain you can successfully complete the activity, and 100 indicates you are completely confident in your ability.*

How much confidence do you have in your ability to _____?

1) Take a focused stand on social issues_____
2) Be strongly committed to a social vision_____
3) Not be easily distracted to pursue other non-social issues_____
4) Clearly be able to identify a social need _____
5) Create a clear social vision_____
6) Be strongly motivated to defend a social need_____
7) Be an agent of social change _____
8) Be determined to meet a social need _____
9) Improve quality of life in the long run _____
10) Create a business that is environmentally friendly_____
11) Improve a long term social need _____
12) Promote a balance of economic, social and environmental concerns_____
13) Promote a balance between social mission and social value. _____
14) Promote solutions that are ethical_____

G. *This last section asks for information about you, your family, and your current student status.*

1. *What is your gender?*
   ☐ *Male* ☐ *Female*
2. *How old are you?* _____
3. *In what country were you born?* _____
4. *Are you attending school in your home country?*
   ☐ *Yes* ☐ *No*
5. *Is your university:*
   ☐ *A public institution* ☐ *A private institution*
6. *At the present time, what is:*
   *Your degree program*_____
   *Your major, if appropriate*_____

7. *Please indicate which courses you have taken or are currently registered for:*

- ☐ *2000 Innovation and Creativity*
- ☐ *3010 Family Business Management*
- ☐ *3111 Entrepreneurship*
- ☐ *3115 Financing and Legal Aspects of Entrepreneurship*
- ☐ *3120 Social Entrepreneurship*
- ☐ *3280 Management Internship*
- ☐ *4010 Special Topics in Entrepreneurship*
- ☐ *4020 Internship in Entrepreneurship*
- ☐ *4030 Independent Study in Entrepreneurship*
- ☐ *4100 Consulting Field Project*
- ☐ *4113 Small Business Management*
- ☐ *4114 Franchising Management*
- ☐ *4701 Technological Entrepreneurship*
- ☐ *4702 Managing Technology Transfer*

8. *In what year do you plan on graduating?* _____

9. *For each person listed below, please indicate in which country they were born:*

1) *Your father* _____
2) *Your mother* _____
3) *Your paternal grandfather* _____
4) *Your paternal grandmother* _____
5) *Your maternal grandfather* _____
6) *Your maternal grandmother* _____

10. *Consider the area where you were raised. Was it:*

☐ *Urban* ☐ *Rural* ☐ *Suburban* ☐ *Mixed*

11. *In terms of financial wealth relative to others in your country, would you consider your family to be:*

☐ *Below the poverty level* ☐ *Average (middle-class)* ☐ *Above average (upper-class)*

12. *Do you belong to a minority group in the country in which you are currently studying?*

☐ *Yes* ☐ *No* ☐ *I don't know*

13. *What is your marital status?*

☐ *Partnered (married, cohabitating, de facto)* ☐ *Not partnered (single, divorced, widowed)*

14. *What is your current student status?*

☐ *Full-time* ☐ *Part-time*

15. *What is your current employment status?*

☐ *Full-time* ☐ *Part-time* ☐ *Not employed* ☐ *Self-employed*

16. *How many years of work experience (including part-time and full-time work) do you have?* _____

17. *We would like to follow-up with you in approximately one year to find out how your educational experience has progressed. If you choose to participate at that time, you will be entered in another raffle in exchange for completing another short survey. If you would like to continue to participate, please provide your name, student ID, and an e-mail address that we can use next year to contact you:*

    (Note: We will only use this information to match your responses here with those from subsequent surveys. We will not share your name or any personal identifying information with anyone for any reason.)

    Name: _____

    Student ID: _____

    E-mail Address: _____

Thank you very much for taking time to complete our survey. If you would like to be entered in the raffle for one of the one hundred $100USD Visa Gift Cards, please indicate this below. Please note, if you would like to be included in the raffle, we must have your name and e-mail address above in order to contact you should you win.

☐ *Yes, please enter me in the raffle* ☐ *No, please do not enter me in the raffle*

APPENDIX B: INSTRUCTIONAL REVIEW BOARD APPROVAL

Study Approved By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb
Approval Expires: 2-13-2012

Informed Consent

Study Title: THE ENTREPRENEURSHIP EDUCATION PROJECT: ENHANCING ENTREPRENEURIAL SELF-EFFICACY

Contacts: Eric Liguori, eliguo1@lsu.edu, 578-6155; M-F 9am-4pm
Dr. Mark Weaver, mweaver@lsu.edu

Purpose of the study: To assess the impact of individual difference variables (e.g. personality, attitudes, politics perceptions) on motivation and work outcomes.

Inclusion Criteria: Students majoring and minoring in entrepreneurship and management will be solicited to voluntary participate in this study by their course instructor.

Number of Subjects: approximately 400

Study Procedures: Study participants will be asked to complete a series of various personality and intention measures.

Benefits: As benefit to the participants they will have the option of receiving a summary of the study findings. Since findings will also be reviewed in class during the latter part of the given semester, students will also benefit for a more comprehensive understanding of entrepreneurial behavior as well as exposure to the types of personality testing instruments they are likely to encounter in a work setting upon graduation. Students will be rewarded for their field data collection experience with the extra credit approximately equivalent to a ½ letter grade increase on their final exam (or equivalent to be determined by individual course instructors).

Risks/Privacy: Those participating in this study authorize the researchers to collect confidential information for research use, such as name, age, etc. The data are stored in password protected computers and will not be accessible other than to the researchers. Only the researchers will have access to the database. This database will be kept in a locked/secure location. Once all study data is collected and entered into the database, all names will be deleted from the database. Only aggregate data will be reported in any study. This is a confidential study. Data will be kept confidential unless release is legally compelled.

Right to Refuse: Participation in the study is voluntary and subjects may change their mind and withdraw from the study at any time without penalty or loss of any benefit to which they are otherwise entitled.

Alternatives: Students, if they choose to pursue extra credit, have the option of writing a three page, double-spaced paper (12pt Times New Roman) on a topic relevant to the course they are enrolled and selected by the course instructor. The course instructor will grade all papers as satisfactory and unsatisfactory, unsatisfactory papers will have to make suggested revisions prior to receiving extra credit. The amount of extra credit awarded for completion of this alternative is exactly equivalent to the amount earned for participating above.

Withdrawal: If you choose not to participate in the whole or a part of the study, subjects will not be penalized or lose any benefits to which they are otherwise entitled.

Signature: The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Robert C. Mathews, Chairman, LSU Institutional Review Board, (225)578-8692. I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with an electric or a paper copy of this consent form if signed by me. I have read and I understand the procedure described above. I agree to participate in the procedure and I have received a copy of this statement.

Do you agree to participate in this survey?

- O Yes
- O No

Name _____ Signature _____ Date _____

APPENDIX C: STUDY MEASURES

Entrepreneurial self-efficacy (McGee et al., 2009)

Prime: How much confidence do you have in your ability to _____?
Anchored: 0 = absolutely no confidence, 50 = a moderate level of confidence, and 100 = complete confidence

1. Brainstorm (come up with) a new idea for a product or service.
2. Identify the need for a new product or service.
3. Design a product or service that will satisfy customer needs and wants.
4. Estimate customer demand for a new product or service.
5. Determine a competitive price for a new product or service.
6. Estimate the amount of start-up funds and working capital necessary to start my business.
7. Design an effective marketing/advertising campaign for a new product or service.
8. Get others to identify with and believe in my vision and plans for a new business.
9. Network (i.e., make contact with and exchange information with others)
10. Clearly and concisely explain verbally/in writing my business ideas in everyday terms.
11. Supervise employees.
12. Recruit and hire employees.
13. Delegate tasks and responsibilities to employees in my business.
14. Deal effectively with day-to-day problems and crises.
15. Inspire, encourage, and motivate my employees.
16. Train employees.
17. Organize and maintain the financial records of my business.
18. Manage the financial assets of my business.
19. Read and interpret financial statements.

Entrepreneurial Outcome Expectations (derived from Krueger, 2000)

Prime: To what extent do you expect to achieve the following outcomes by starting your own venture?
Anchored: 1 = "not at all" to 7 = "very much"

1. Financial rewards (personal wealth, increase personal income, etc.)
2. Independence/autonomy (personal freedom, be your own boss, etc.)
3. Personal rewards (public recognition, personal growth, to prove I can do it, etc.)
4. Family security (to secure future for family members, to build a business to pass on, etc.)

Entrepreneurial Intentions (Thompson, 2009)

Prime: Thinking of yourself, how true is it that you…
Anchored: 1 = "very untrue" to 6 = "very true"

1. Intend to set up a company in the future
2. Never search for business start-up opportunities
3. Are saving money to start a business
4. Do not read books on how to set up a firm
5. Have no plans to launch your own business
6. Spend time learning about starting a firm

Generalized self-efficacy (Chen et al., 2001)

Prime: Please indicate the extent to which you agree with each of the following…
Anchored: 1 = "Strongly disagree" to 5 = "Strongly agree"

1. I will be able to achieve most of the goals that I have set for myself.
2. When facing difficult tasks, I am certain that I will accomplish them.
3. In general, I think that I can obtain outcomes that are important to me.
4. I believe I can succeed at most any endeavor to which I set my mind.
5. I will be able to successfully overcome many challenges.
6. I am confident that I can perform effectively on many different tasks.
7. Compared to other people, I can do most tasks very well.
8. Even when things are tough, I can perform quite well.

Control Variables

1. Gender
2. Minority status
3. Prior family business exposure
4. Prior entrepreneurial experience
5. Prior work experience

APPENDIX D: UNIVERSITY TEACHING ORIENTATION VARIABLE CODING

Study Variable Coding Anchors:

Low Teaching Emphasis = 1
Medium Teaching Emphasis = 2
High Teaching Emphasis = 3

AACSB General Orientation Matrix[12]:

†General Orientation

Code	High Emphasis	Medium Emphasis	Low Emphasis
A	Teaching	Intellectual Contributions	Service
B	Intellectual Contributions	Teaching	Service
C	Teaching	Service	Intellectual Contributions
D	Intellectual Contributions	Service	Teaching
E	Equal for Teaching and Intellectual Contributions		Service
F	Teaching	Equal for Intellectual Contributions and Service	
G	Equal for Teaching, Intellectual Contributions, and Service		

Study Coding:

AACSB Code	Study Variable Code
A	3
B	2
C	3
D	1
E	2
F	3
G	2

[12] Figure adapted from AACSB posting for public use at: https://datadirect.aacsb.edu/public/misc/clients/aacsb/help_orientation_codes.cfm.

APPENDIX E: POST HOC VARIABLE REOPERATIONALIZATION

University Teaching Orientation

Recoded to low and high; moderate category was removed.

Low Teaching Emphasis = 1
High Teaching Emphasis = 2

AACSB General Orientation Matrix[13]:

†General Orientation

Code	High Emphasis	Medium Emphasis	Low Emphasis
A	Teaching	Intellectual Contributions	Service
B	Intellectual Contributions	Teaching	Service
C	Teaching	Service	Intellectual Contributions
D	Intellectual Contributions	Service	Teaching
E	Equal for Teaching and Intellectual Contributions		Service
F	Teaching	Equal for Intellectual Contributions and Service	
G	Equal for Teaching, Intellectual Contributions, and Service		

Study Coding:

AACSB Code	Study Variable Code
A	2
B	1
C	2
D	1
E	Omitted
F	2
G	Omitted

University Entrepreneurship Focus

University focus on entrepreneurship was reoperationalized and assessed by summating responses to five dichotomous items anchored 0 = no and 1 = yes from the EEP university survey. The items are: (1) "Does your university have an established entrepreneurship center?", (2) "Does your university have a student club or organization focused on entrepreneurship?", (3) "Does your university have a chair or professorship in entrepreneurship?", (4) "Does your university have a chair or professorship in small business?", and (5) "Does your school or university have a graduate program in entrepreneurship?"

[13] Figure adapted from AACSB posting for public use at: https://datadirect.aacsb.edu/public/misc/clients/aacsb/help_orientation_codes.cfm.

VITA

Eric William Liguori, born in Bridgeport, CT, grew up in Clearwater, FL. Eric earned a Bachelor of Science in Human Resource Management from Florida State University (2002) and a Master of Business Administration (2004) from the University of South Florida. Prior to his doctoral work at Louisiana State University, Eric worked in industry for Eckerd Corporation (6 years), the Florida Small Business Development Center Network (2 years), Eckerd Youth Alternatives (2 years), and Paychex, Inc. (1 year). In 2010, Eric's work on social organizing at the turn of the century was recognized as the Best Doctoral Paper in the Management History Track at the Annual Meeting of the Southern Management Association. In 2012, his experiential exercise on entrepreneurial social networks, authored with colleague Josh Bendickson, won 3rd place in the Center for Entrepreneurial Excellence's annual 3e competition. Eric's research has been published in multiple journals, books, and encyclopedias including the *Journal of Managerial Issues, Journal of Management History, Career Development International,* Contemporary Perspectives on Technological Innovation, Management and Policy, and Encyclopedia of New Venture Management. Likewise, Eric has presented his research at numerous conferences including the annual meetings of the Academy of Management, the United States Association of Small Business and Entrepreneurship, the Society for Industrial and Organizational Psychology, the Southern Management Association, and the Academy of International Business. Eric is currently employed as an Assistant Professor of Management & Entrepreneurship in the Craig School of Business at California State University, Fresno where he teaches a variety of entrepreneurship courses and directs the university's Collegiate Entrepreneurs' Organization.