

The Dark Triad and Nascent Entrepreneurship: An Examination of Unproductive versus Productive Entrepreneurial Motives

by Keith M. Hmieleski and Daniel A. Lerner

This study examined relationships of the dark triad personality characteristics (i.e., narcissism, psychopathy, and Machiavellianism) with entrepreneurial intentions and motives. Results from samples of business undergraduates (N = 508) and MBA students (N = 234) found narcissism to be positively related to entrepreneurial intentions. In addition, results from subgroups of business undergraduates and MBA students high in entrepreneurial intentions (i.e., early-stage nascent entrepreneurs) indicated differences in motives for engaging in the startup process. Specifically, we found all facets of the dark triad to be positively associated with unproductive entrepreneurial motives, and observed differential associations of the dark triad characteristics with productive entrepreneurial motives.

Introduction

New venture creation is typically thought to be a positive or even heroic endeavor (Anderson and Warren 2011; Malach-Pines et al. 2005). This view is logical when considering that startups often provide employment, innovative products/services, and tax revenues that help to stabilize, grow, and revitalize economies (Van Praag and Versloot 2007). Perhaps partly for these reasons, the literature considering why individuals intend to become entrepreneurs has focused primarily on the “good in people”—such as positive psychological characteristics (e.g., optimism, dispositional positive affect, and generalized self-efficacy; Zhao, Seibert, and Lumpkin 2010) and virtuous motives (e.g., a desire to engage in meaningful work and deliver products/services that address important individual and societal problems; Cooper and

Artz 1995) as drivers of entry into entrepreneurship within developed economies.

Only recently has there begun to build a concerted movement toward exploring the darker sides of entrepreneurship (Baron, Zhao, and Miao 2015; DeNisi 2015; Klotz and Neubaum 2016; Shepherd, Patzelt, and Baron 2013; Webb et al. 2009). The current study builds on this movement by asking: “Are there dark psychological characteristics and unproductive motives (e.g., a desire to appropriate value) that drive persons’ intentions to enter into entrepreneurship?” This is an important question because organizations founded on the basis of such drivers are likely to produce counterproductive workplace dynamics and negative long-term societal and economic effects (Kets de Vries 1985; Lewin and Stephens 1994). Thus, with respect to theory, policy, and practice, it is arguably as important to identify

Keith M. Hmieleski is Associate Professor of Entrepreneurship at the Neeley School of Business, Texas Christian University.

Daniel A. Lerner is Assistant Professor at Deusto Business School, University of Deusto, Bilbao, Spain, and Visiting Professor at Universidad de Desarrollo, Chile.

Address correspondence to: K. M. Hmieleski, Department of Management, Entrepreneurship and Leadership, Texas Christian University, Fort Worth, TX 76129. E-mail: k.hmieleski@tcu.edu.

individual characteristics relating to unproductive entrepreneurship (which appropriates economic and societal value) as it is to uncover antecedents of productive entrepreneurship (which generates economic and societal value).¹

Our research question is examined using a two-step process. First, we consider the relationship of the dark triad (i.e., a collection of three malevolent and ego-centric personality characteristics: *narcissism*, *psychopathy*, and *Machiavellianism*; Jonason and Webster 2010) with individuals' entrepreneurial intentions. Next, within our primary samples, we then focus on those individuals high in entrepreneurial intentions (i.e., persons who are actively preparing to launch a new venture, and thereby qualifying as early-stage nascent entrepreneurs; Reynolds and White 1997) in order to examine the relationship of the dark triad with individuals' motives for starting a new business. In other words, for those who have begun the initial stages of starting a new business, we consider "why" they are doing so—what are their underlying motives for engaging in the entrepreneurial process?

The findings are intended to make two primary contributions. First, the results are expected to shed light on the dark triad as a previously under-examined set of personality characteristics within the entrepreneurship literature—ones that are not only relevant for vocational and organizational behavior of existing firms (O'Boyle et al. 2012), but that also may have effects on the intentions of individuals to start new ventures (Kets de Vries 1996). The dark triad has become the leading paradigm for the study of dark personality traits within the fields of psychology (Adrian, Richards, and Paulhus 2013) and business management research (Smith, Wallace, and Jordan 2016). Moreover, entrepreneurship scholars have recently pointed to the need for research on dark personality characteristics and how they relate to entrepreneurial entry and performance (DeNisi 2015; Klotz and Neubaum 2016; Shepherd 2015). Even though a dark side to the personality of entrepreneurs has long been

suggested and speculated about (e.g., Kets de Vries 1985), little empirical research has been conducted to investigate such dispositions among those with entrepreneurial inclinations. This type of research is needed in order to capture a more complete and balanced view of would-be entrepreneurs' personality characteristics and how they relate to both unproductive and productive entrepreneurial motives.

Second, responding to recent calls for the study of motives underlying nascent venturing (e.g., Carsrud and Brännback 2011), the results are expected to reveal meaningful differences regarding *why* individuals engage in the startup process. The literature on individual difference characteristics relating to entry into entrepreneurship has largely *assumed* positive underlying motives (Zhao, Seibert, and Lumpkin 2010), and that the creation of new ventures is inherently beneficial to society (Baron 2015). Notwithstanding Baumol's (1990) theoretical consideration of *institutional factors* that encourage unproductive versus productive entrepreneurship, research has yet to examine differences in *individual-level factors* leading to unproductive (i.e., value-appropriating) versus productive (i.e., value-creating) orientations to entrepreneurship. Thus, a large gap exists in the literature regarding why *within* a particular institutional context (especially one conducive to productive entrepreneurship), some entrepreneurial individuals would be motivated to pursue unproductive versus productive venture activity (Shepherd 2015). This issue is of fundamental importance to the field, as *value creation* has become an elemental component in most conceptualizations of entrepreneurship (Bryant and Julien 2001).

Theoretical Development and Hypotheses

Theoretical Underpinnings of the Dark Triad

The dark triad is comprised of three malevolent and ego-centric personality characteristics:

¹Consistent with general economics, our discussion of value appropriation versus value creation is based on whether value is extracted or generated. An example of value appropriation can be seen with *patent trolls* (i.e., individuals or companies that pursue opportunistic litigation to capture existing value, rather than generating new value. Our arguments do not suggest that profit-motive is unproductive; on the contrary, unprofitable firms fail, thereby failing to create or appropriate value. In line with this point, our argument is not inconsistent with the *potential* of self-interest to benefit other parties at the heart of neoclassical economics. In essence, we simply suggest that the higher an individual is in the dark triad (i.e., psychological characteristics characterized by malevolent self-interest), the more the individual's motives for venturing will be to appropriate, rather than generate, value.

narcissism, psychopathy, and Machiavellianism.² These characteristics are distinguishable, but overlap with respect to an underlying propensity for self-serving, callous, and exploitative behavior (Jonason and Webster 2010). Persons high in the dark triad tend to be achievement-oriented and skilled at accumulating power and extracting resources from their environment (Jonason, Li, and Teicher 2010; Jones and Figueredo 2013). They generally have a competitive nature and lack altruistic or prosocial ideals. The dark triad has been referred to as the “James Bond” personality-type because individuals high in its facets tend to be more confident, extraverted, and agentic than others when operating in challenging and uncertain situations (Jonason et al. 2009). For these reasons, it is not surprising that research has found individuals high in dark triad characteristics to be commonly found, and arguably overrepresented, in leadership positions, such as among politicians and CEOs (Chatterjee and Hambrick 2007; Deluga 2001; Furtner, Rauthmann, and Sachse 2011; Lewin and Stephens 1994; O’Reilly et al. 2014). It similarly reasons that individuals entering entrepreneurship—a vocation that requires high levels of self-confidence, leadership and agentic behavior, and involves a high degree of uncertainty—may also be disproportionately high in the dark triad (Mathieu and St-Jean 2013).

To evaluate the extent to which dark triad personality characteristics relate to entry into entrepreneurship and the potential underlying motives for engaging in this activity, we draw from two complementary theories: life history theory and social exchange theory. *Life history theory* is a middle-range theory proposing that individuals select behavioral strategies in accordance with the demands of their environment, so as to maximize fitness and the likelihood of survival (Buss 2009; Roff 2001). According to this theory, when environmental conditions are brutish and the future is highly uncertain, a fast-life strategy in which individuals focus on immediate needs and short-term relationships is the most effective behavioral orientation. In contrast, under less harsh environmental conditions and when the future is

somewhat more predictable, a dedicated-life strategy in which individuals focus on long-term needs and relationships is generally most effective. Individuals high in the dark triad are known to adopt a fast-life strategy toward relationships (Carter et al. 2015), and, more generally, a short-term view of the world that influences how they regulate their behavior and allocate resources (Jonason et al. 2012).

The adoption of a fast-life approach is associated with low behavioral inhibition and a lack of concern for long-term consequences (Sherman, Figueredo, and Funder 2013). To the extent persons high in the dark triad personality characteristics regulate their behavior through a fast-life approach, they may take on risky endeavors such as new venture creation and do so without requisite experience, connections, or resources (Jonason, Koenig, and Tost 2010). Their confidence, lack of fear, preference for agentic endeavors, disdain for authority and the status quo, and general comfort operating in unstructured and dynamic environments would presumably make entrepreneurship an attractive occupational choice for such persons (Jonason, Li, and Teicher 2010). Moreover, it should be pointed out that even though a fast-life approach is generally viewed as a counterproductive mode of self-regulation in modern society, it may prove to be an adaptive and even superior strategy in certain situations, particularly in the short-term (Jonason, Koenig, and Tost 2010).

A fast-life strategy has important implications for social exchange, in terms of individuals’ perception of exchange relationships and social exchange behavior. *Social exchange theory* suggests that the value of a relationship is equal to its benefits minus the costs (Cook and Rice 2003). Social exchange is particularly relevant in domains where markets do not exist or are at best incomplete, such as in interpersonal relationships and in nascent organizing. Social exchange differs from economic exchange in that contracts are not explicit or subject to rule of law, instead it rests upon the expectation of reciprocity over time. According to social exchange theory, individuals foster relationships and engage in reciprocal transactions with persons whom they perceive as offering value.

²Consistent with the personality literature and with other organizational research involving normal (non-clinical) populations (e.g., Chatterjee and Hambrick 2007; Jonason and Webster 2010), no suggestion or assumption is made as to whether individuals high in the continuous personality constructs of narcissism, psychopathy, or Machiavellianism would be so high as to qualify for clinical disorders/diagnoses.

Thus, in general, social exchange theory predicts that people are more likely to help those who they expect to receive reciprocal benefit from in the future. While on the surface such reasoning may *appear* consistent with the ego-centricity associated with the dark triad, it typically is not. Reciprocal exchange is not anticipated by persons high in the dark triad; instead, such individuals view relationship value as being maximized through interactions of taking without giving (O'Boyle et al. 2012). Moreover, since individuals high in the dark triad will shirk reciprocity if given the opportunity, such persons expect others to do the same. Thus, individuals high in the dark triad do not nurture long-term relationships, instead they develop many superficial short-term relationships—extracting resources from one relationship and quickly moving on once it has served them.³ In so doing, such individuals tend to advance through life largely based on the efforts and resources of others (Jones 2014).

Even though a fast-life approach is consistent with each of the dark triad personality characteristics, having similar implications for social exchange, there are important differences with respect to how self-regulatory behavior is manifest through each individual characteristic. Persons high in narcissism possess an excessive need for adoration that manifests in egotism, vanity, pride, and selfishness (Twenge et al. 2008). Their sense of superiority and entitlement leads them to believe that others should give to them without expectation of receiving anything in return (Hotchkiss 2003). Individuals high in psychopathy are emotionally callous (Decuyper et al. 2009). This allows them to coldly, and sometimes aggressively, take without giving in return (Ermer and Kiehl 2010). People high in Machiavellianism are characterized by duplicity—believing that the ends justify the means, and placing a particularly high priority on power, money, and competition (Zettler and Solga 2013). Taking from others without reciprocation is viewed by such persons as acceptable (and expected) when so doing furthers progress toward the achievement of their goals (Gunnthorsdottir, McCabe, and Smith 2002).

³This does not preclude individuals high in Machiavellianism from superficially investing in relationships or deferring immediate value extraction, so as to further their manipulation of others (e.g., as *pawns* and *patrons*). Similarly, those high in narcissism and psychopathy may superficially maintain a relationship while it serves their ego-centric interests of admiration, dominance, or parasitic lifestyle.

In the following section we elaborate on this logic, explicated through life history theory, to develop hypotheses regarding the relationship of the dark triad with intentions to enter into entrepreneurship. We then make linkages with social exchange theory to hypothesize about why the motives underlying such intentions are likely to be based on relatively unproductive, rather than productive, orientations toward entrepreneurship.

The Dark Triad and Entrepreneurial Entry

The adoption of a fast-life approach implies a short-term orientation in which individuals choose to take on bold tasks without full consideration of the effort, experience, and resources needed to produce lasting success (Sherman, Figueredo, and Funder 2013). Since persons who are high in the dark triad tend to regulate their behavior through a fast-life approach, they may choose to take on risky endeavors such as new venture creation (Jonason, Koenig, and Tost 2010). Drawing from this perspective and based on life history theory, we now consider in detail how each facet of the dark triad is likely to be associated with entrepreneurial intentions.

Narcissism. Individuals who are high in narcissism are self-centered and continually seek the attention and admiration of others (Twenge et al. 2008). They also tend to be charismatic, and are skilled at acquiring resources and getting others to adopt their plans (O'Reilly et al. 2014). In addition, they are known to engage in grandiose thinking and expect others to adopt their world view (Hotchkiss 2003). In relation to nascent entrepreneurship, by launching a venture, individuals high in narcissism can live the fast-life by immediately becoming leader and CEO—bypassing the need to start below others and to patiently climb the corporate ladder. Moreover, entrepreneurship has become an admired and even sexy vocational choice (Magister 2013)—befitting the self-presumed greatness of narcissistic individuals. Finally, research has found persons high in narcissism to have a bias toward risk-taking, being prone to gambling (Jones 2013) and making risky financial investments (Foster et al. 2011)—

characteristics associated with persons engaged in nascent venturing and with following a fast-life strategy (Buss 2009). For these reasons, it is not surprising that narcissism has been identified in recent research as being positively related to possessing entrepreneurial intentions (Mathieu and St-Jean 2013).

Psychopathy. Persons high in psychopathy lack normal levels of emotional arousal.⁴ Given their relatively limited ability to experience all but the most superficial and primal emotions, combined with cynicism, they are incapable of experiencing affective empathy. This, however, does not preclude them from understanding what drives people (i.e., cognitive empathy), and makes them well suited to take advantage of others (Jonason and Krause 2013). Individuals who are high in psychopathy excel in highly stressful and uncertain situations, being able to focus and perform well under conditions in which others persons typically breakdown (Dutton 2012). Moreover, people high in psychopathy are often attracted toward sensation-seeking activities and get bored easily (Hunt et al. 2005), thus fueling a fast-life behavioral orientation (Jonason, Koenig, and Tost 2010; Jonason, Li, and Teicher 2010). In addition, they abhor social norms and enjoy going against the status quo (Mathieu et al. 2013). In relation to nascent entrepreneurship, by starting a business, persons high in psychopathy can avoid having to report to others and needing to adhere to the social norms that exist within a corporate setting (Rindova, Barry, and Ketchen 2009). They can instead shape the culture and norms for their startup without undergoing the scrutiny and monitoring faced by those entering an established organization as an employee (Staw 1991). Entrepreneurship also offers the opportunity to hit it big, aligning with their “all or nothing” sensation-seeking desires that characterize the fast-life. Moreover, the wide range of activities in which entrepreneurs must take on would likely prevent persons who are high in psychopathy from getting bored (cf. Nicolaou et al. 2011). In addition, their ability to read people could help them to identify opportunities for new products/services or stakeholders to exploit

(Humphrey 2013). Finally, their lack of fear and relative insensitivity to loss/punishment stands to reduce or eliminate any venturing inhibition related to high startup mortality or general fear of failure (Morgan and Sisak 2016); thus, psychopathy may facilitate entry into entrepreneurship—even for those without sufficient preparation or experience.

Machiavellianism. People who are high in Machiavellianism are driven by the perspective that the ends justify the means and have a strong need for money, power and competition (Zettler and Solga 2013). They are known for their desire to win at the expense of others (Buckels, Jones, and Paulhus 2013). Moreover, they have no compunction about engaging in socially deviant behaviors (e.g., lying, stealing, and cheating) in order to win, and are experts at masking their true objectives (Côté et al. 2011). Such persons also discount future consequences and have a need for immediate gratification—characteristics closely linked with the fast-life (Jonason and Tost 2010). In relation to nascent entrepreneurship, for such persons venturing may serve as a vehicle to aggressively compete, and if successful, quickly acquire inordinate amounts of wealth and power. Whereas excessive tenacity and competitiveness are often viewed as counterproductive among workers within traditional organizational setting (Lu, Tjosvold, and Shi 2010), such characteristics are more commonly revered among entrepreneurs and considered necessary in order to overcome high mortality odds and to win business away from incumbent firms (Robinson 2014). Further, the brutish conditions that startups often face and the potential benefits that new ventures provide (e.g., jobs, tax revenues) can be used by Machiavellian entrepreneurs to obfuscate or justify questionable competitive tactics and behaviors that characterize a short-term view and fast-life approach.

In sum, consistent with general suggestions regarding the presence of pathological characteristics and tendencies among entrepreneurs (Kets de Vries 1985, 1996; Lerner 2016; Verheul et al. 2016), we suggest that each facet of the dark triad may yield an attraction toward launching a new venture, driven at least in part

⁴We refer to *psychopathy* as per the dark triad and personality literature (e.g., Jonason and Webster 2010; Paulhus and Williams 2002). This largely overlaps with *psychopathy* as well as *psychopaths* in the forensic and clinical literatures (e.g., Hare 1991; Hare and Neumann 2006). Yet as *psychopathy* within the dark triad of personality is more parsimonious and germane to non-clinical populations, use of the term here should not be conflated with clinical models of *psychopathy*.

by a desire to live the fast-life. We therefore offer our first hypothesis:

H1. Individuals' levels of narcissism (H1a), psychopathy (H1b), and Machiavellianism (H1c) will be positively associated with their intentions to start a new venture.

The Dark Triad and Unproductive versus Productive Entrepreneurial Motives

In many respects entrepreneurship can be seen as a series of social and economic exchanges between parties who mutually expect to benefit as result of transacting with one another (e.g., Goss 2008). For example, founders hire employees and offer financial and other benefits in exchange for expertise and labor. In addition, they sell products/services to customers who expect to receive value from interactions and transactions that are made in good faith. Productive relationships exist when exchange increases value for those involved, whereas unproductive relationships exist when one party appropriates value from others (Cook and Rice 2003). Many entrepreneurs begin new ventures for productive reasons, desiring to deliver products and services that generate value beyond just for the entrepreneur (Cooper and Artz 1995). Yet other entrepreneurs launch new ventures to engage in rent-seeking or value-extracting behavior—appropriating existing value, externalizing costs, and potentially reducing others' overall welfare in the process (Baumol 1990). Building from social exchange theory, we now argue why the dark triad personality characteristics are likely to be positively linked with unproductive entrepreneurial motives and negatively associated with productive entrepreneurial motives.

Narcissism. Individuals who are high in narcissism feel that they are superior and too important to be bothered by others' needs (Twenge et al. 2008). Their self-presumed greatness leads them to believe that people should admire and serve them without expectation of reciprocation. As such, they see no moral dilemma in engaging in rent-seeking behavior that involves taking without giving in return (i.e., value appropriation) (Brown et al. 2010). Narcissistic entrepreneurs, much like narcissistic CEOs, are apt to view their business as a direct reflection of their own greatness (Chatterjee and Hambrick 2007). To this end, they are unlikely to want their venture to be viewed by others as being unscrupulous, but behind closed doors

would be unfazed in doing whatever it takes to be successful (e.g., so that they receive what they are, in their own mind, *entitled* to). Moreover, their charisma and social adeptness facilitate shirking from reciprocation in social exchange relationships, enhancing their potential to engage in rent-seeking and personal value appropriation via their firm.

Psychopathy. Persons high in psychopathy are callous, insensitive to the needs of others, and lack remorse (Jonason and Krause 2013). These individuals consider life from the perspective of *every man for himself*, viewing people as either prey or fellow predators (Babiak and Hare 2006). They therefore do not have any problem engaging in rent-seeking behavior and externalizing all costs. Such behavior would in fact be considered the norm for persons high in psychopathy (Dutton 2012). In their minds, only fools care about the needs of others; dominance and coercion are the way to achieve cooperation and for an individual to maximize his/her gains. Not surprisingly, studies of individuals high in psychopathy have found that such persons choose to gamble with others' money if the opportunity presents itself (Jones 2013). Moreover, the ability of persons who are high in psychopathy to pick out individuals who are vulnerable or easily dominated would allow them to identify stakeholders whom they can take advantage of (e.g., employees, customers, suppliers) while offering little in return (Wilson, Demetriooff, and Porter 2008). In sum, we expect that the entrepreneurial motives of individuals high in psychopathy will be positively oriented toward appropriating value for themselves, and negatively oriented toward creating value more broadly for others.

Machiavellianism. People who are high in Machiavellianism tend to be cynical and do not believe that individuals or societies care about their well-being (Zettler and Solga 2013). As a result, they tend to have little concern for the well-being of others. In addition, they fail to reciprocate in social exchanges once the other party has been used and is no longer convenient to their own goals, and are motivated to win at all costs (Côté et al. 2011). Judgment and decision-making for individuals high in Machiavellianism is weighted in favor of maximizing personal gain and short-term profits, with little thought given to broader and/or long-term repercussions (Sherman, Figueredo, and Funder 2013). Therefore, in the startup context, faced with entrepreneurial uncertainty, such persons

are unlikely to be motivated to invest resources in productive entrepreneurial strategies that *might only* generate long-term value; they are instead likely to be motivated to pursue unproductive entrepreneurial strategies that appropriate value in the present or near future. As long-term resource investments are uncertain, individuals high in Machiavellianism can benefit with greater certainty by focusing on short-term wins (Jonason, Koenig, and Tost 2010). This is likely to result in an appropriative rent-seeking orientation in which relationships involve taking as much as possible while minimizing reciprocity. Such self-interest with guile could manifest in various ways, including: taking shortcuts on product quality, overcharging for services, taking advantage of employees, or use of a litigatory competitive strategy. We therefore anticipate that Machiavellian nascent entrepreneurs will be high in unproductive entrepreneurial motives and low in productive entrepreneurial motives.

Taken together we have argued that, driven by a fast-life approach, individuals high in dark triad personality characteristics who intend to become firm founders, will be motivated to use venturing as a pathway to by-in-large appropriate value rather than create it (i.e., engage in exchange relationships with a focus on taking and externalizing). In addition, we have suggested that there may be subtle differences regarding how each facet of the dark triad relates to motives for venturing. Overall, we posit that the dark triad personality characteristics are each positively associated with unproductive entrepreneurial motives and negatively associated with productive motives. Specifically, we offer the following hypotheses:

H2. Individuals' levels of narcissism (H2a), psychopathy (H2b), and Machiavellianism (H2c) will be positively associated with their level of unproductive entrepreneurial motives.

H3. Individuals' levels of narcissism (H3a), psychopathy (H3b), and Machiavellianism (H3c) will be negatively associated with their level of productive entrepreneurial motives.

Method

Data Collection Procedures and Sample

In order to assess the relationship of the dark triad with entrepreneurial intentions, it would

not be logical to sample full-time entrepreneurs. Instead, a business-oriented population with variance in entrepreneurial intentions is needed. Accordingly, college business students were selected as the sample population for the current research. Given concerns about the use of students as proxies for other populations, it is important to underscore the following points. First, business students as a whole do not broadly proxy nascent entrepreneurs; rather they offer a general business-oriented population from which to attempt to distinguish between those who are high versus low in entrepreneurial intentions. Thus, for research questions seeking to predict entrepreneurial intentions, sampling business students is appropriate (Krueger 1993). It is also worth noting that unlike more heterogeneous full-time workers with existing careers (e.g., persons who have already become employees or entrepreneurs), business students offer a population less subject to omitted variable bias and endogeneity threats. Additionally, many individuals begin the entrepreneurial process while a student, and nearly all business students are on the verge of entering the full-time workforce as (co)founders, employees of a startup firm, or employees of existing organizations. Finally, to address concerns relating to the generalizability of undergraduate business student populations to older and more experienced adult populations, we used samples of both business undergraduates and MBA students (Hmieleski and Corbett 2006).

Two primary data collections ($N = 508$ and $N = 234$) were conducted for the current research. In addition, a supplementary data collection ($N = 130$) was performed in order to examine the validity and temporal stability of a number of the study's measures. Participants in both primary data collections completed a survey instrument containing the measures described below, as well as several demographic items. The first primary data collection (*Sample 1*) was with undergraduate business students, obtained from subject pools at two business schools in the United States. Subjects were not graded on their participation and had no other incentive to respond in any particular way. These subjects simply received one participation point for completing the survey, with all responses being anonymous. The sample was comprised of 508 business undergraduates, with an average age of 21.5 (Standard Deviation [S.D.] = 3.22) and slightly more males ($n = 296$)

than females ($n = 212$). Eighty-one percent of participants identified as Caucasian ($n = 411$), 14 percent had started a venture ($n = 71$), 30 percent had worked for a startup ($n = 150$), and 36 percent had taken a course in entrepreneurship ($n = 181$).

The second primary data collection (*Sample 2*) consisted of MBA students recruited through courses they were attending at U.S. business schools. The MBA sample did not receive participation points or other incentive for completing the survey. It was composed of 234 MBA students, with an average age of 29.6 (S.D. = 6.61) and approximately twice as many males ($n = 160$) than females ($n = 74$). Seventy-four percent of participants identified as Caucasian ($n = 173$), 23 percent had started a venture ($n = 53$), 24 percent had worked for a startup ($n = 55$), and 23 percent had taken a course in entrepreneurship ($n = 53$).

A supplemental data collection was conducted in order to evaluate validity for the measures of entrepreneurial motives, including the test-retest reliabilities (temporal stability) of the focal study measures. The protocol used for this sample was similar to the others. However, these participants were surveyed twice, at time 1 (t_1) and then four weeks later at time 2 (t_2). In order to link a particular subject's test-retest responses, a four-digit identification number was used (matching t_1 to t_2). This *supplemental* sample was composed of 130 business undergraduates at t_1 , with 118 of those participants also completing t_2 . These participants had an average age of 21.0 (S.D. = 1.85), and included slightly more males ($n_{t1} = 80$; $n_{t2} = 72$) than females ($n_{t1} = 50$; $n_{t2} = 46$). The majority of participants identified as Caucasian ($n_{t1} = 110$; $n_{t2} = 100$), 13 percent had started a venture ($n_{t1} = 17$; $n_{t2} = 15$), 29 percent had worked for a startup ($n_{t1} = 38$; $n_{t2} = 34$), and approximately 30 percent had taken a course in entrepreneurship ($n_{t1} = 42$; $n_{t2} = 34$).

Measures

Unless otherwise noted, all measures were rated on a five-point Likert-type response scale, with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Dark Triad. The dark triad was examined using a 12-item measure developed and validated by Jonason and Webster (2010). It includes 4 items each for narcissism (example item: "I tend to want others to admire me"), psychopathy (example item: "I tend to lack remorse") and

Machiavellianism (example item: "I tend to manipulate others to get my way"). Scores were averaged for each construct, with higher scores reflecting greater levels of narcissism, psychopathy and Machiavellianism, respectively.

In alignment with theory and previous empirical evidence of each facet being relatively stable across time and situation (i.e., trait-like), Jonason and Webster (2010) found the test-retest correlation over a three-week period to range from 0.76 to 0.87 for narcissism, psychopathy, and Machiavellianism. Results from our supplementary sample found the measure to produce similar temporal stability, with test-retest correlations over a four-week period ranging from 0.69 to 0.84 for narcissism, psychopathy, and Machiavellianism. The internal consistency of the measure was found to be acceptable in both of our primary data collections, with Cronbach's coefficient alpha (α) scores of 0.76 and 0.73 for narcissism, 0.71 and 0.73 for psychopathy, and 0.82 and 0.79 for Machiavellianism for the primary samples of business undergraduates and MBAs, respectively.

Entrepreneurial Intentions. This construct was examined using a 5-item measure developed by Chen, Greene, and Crick (1998). Example items include "I have begun planning for starting my own business," and "I am going to set up my own business in the near future." Responses to items were averaged, such that higher scores represent greater levels of entrepreneurial intentions. Results from the supplementary sample found the measure to produce good temporal stability, with a test-retest correlation of 0.88 over a four-week period. The measure produced high levels of internal consistency, with Cronbach's coefficient alpha (α) scores of 0.92 and 0.93 for the primary samples of business undergraduates and MBAs, respectively.

Entrepreneurial Motives. Measures were developed by the authors based on the general theoretical consideration of unproductive and productive entrepreneurship made by Baumol (1990) and input from other entrepreneurship scholars. Consistent with prior individual-level research and recent calls to examine individual entrepreneurial motives (Carsrud and Brännback 2011), we focused on individuals' motivation to pursue both unproductive (i.e. value-appropriating) and productive (i.e., value-creating) entrepreneurial activities. The measures consist of five items for *unproductive entrepreneurial motives* and five items for *productive entrepreneurial motives*. The items and

results of principal components confirmatory factor analysis using Varimax rotation are included in Appendix. Item responses were averaged, such that higher scores represent greater levels of unproductive and productive entrepreneurial motives, respectively. Results from our supplementary sample found the measures to produce reasonable temporal stability, with test-retest correlations over a four-week period of 0.75 for each type of entrepreneurial motive. The measures also showed reasonable levels of internal consistency, with Cronbach's coefficient alpha (α) scores of 0.76 and 0.75 for unproductive entrepreneurial motives, and 0.79 and 0.84 for productive entrepreneurial motives, in the primary samples of business undergraduates and MBAs, respectively. The measures also appeared to show reasonable convergent and discriminant validity.⁵

Control Variables. Several demographic control variables were used in the current research. These included the age, and a series of dummy variables (yes = 1) indicating if a subject was male, Caucasian, married, had children, had previously taken an entrepreneurship course, and was enrolled at a private university. Age was included because older students generally have more work experience and broader connections that could afford them a better position to

consider starting a new business (Kautonen, Gelderen and Fink 2015). Males have historically been found to be more likely to start businesses than females (Gupta, Turban, and Bhawe 2008; Zhao, Seibert, and Hills 2005). Ethnic minorities tend to have a high rate of startup intentions due to perceptions of having a decreased opportunity to find employment and make career advancements through traditional employment routes (Fairlie 2004). Individuals who are married and who have children are likely to have lower entrepreneurial intentions due to the risk involved in the startup process (Schiller and Crewson 1997). Those who have taken an entrepreneurship course are more likely to start a new business due to their enhanced knowledge and motivation for partaking in entrepreneurial activities (Piperopoulos and Dimov 2015). Finally, students from private schools may, on average, have greater access to capital than students from public schools, thus enhancing the perceived feasibility of starting a business.

Statistical Procedures

Regression analysis was used to examine all hypotheses (Cohen et al. 2003). Two models are presented for each hypothesis. In each case, Model 1 corresponds to Sample 1 (business undergraduates) and Model 2 corresponds to

⁵Convergent validity for the measures of entrepreneurial motives was first examined by considering the degree to which items within their respective factors were highly correlated across the combined primary samples (i.e., as a general rule factor loadings should be greater than 0.4; Tabachnick and Fidell 2001). As shown in Appendix, factor loadings ranged from 0.61 to 0.79 for unproductive entrepreneurial motives (Mean factor loading = 0.70) and from 0.61 to 0.86 for productive entrepreneurial motives (Mean factor loading = 0.73). These results support the convergent validity of the measures. Second, convergent validity was more broadly investigated by comparing the association of the measures with a number of scales included in the supplementary data collection that were expected to be theoretically related to unproductive and productive entrepreneurial motives. Specifically, the measures used for comparison included the negative and positive reciprocity scales developed by Perugini et al. (2003) to examine personal norms of reciprocity, as well as the profit-seeking and fairness scales developed by Leybman, Zuroff, and Fournier (2011) to examine social exchange styles. In support of convergent validity: the measure of unproductive entrepreneurial motives was positively correlated with negative reciprocity ($r = 0.26, p < 0.01$) and with profit-seeking in social exchange ($r = 0.27, p < 0.01$); additionally, the measure of productive entrepreneurial motives was positive correlated with positive reciprocity ($r = 0.31, p < 0.01$) and with fairness in social exchange ($r = 0.21, p < 0.05$). These results provide additional support for the convergent validity of the measures.

Discriminant validity was evaluated in two ways. First, we considered the between-factor loading of items for the unproductive and productive measures, which should differ by 0.2 or more from within-factor loadings (Hair et al. 2010). The differences in the absolute values of the between-factor loadings ranged from 0.35 to 0.65 for unproductive entrepreneurial motives (mean difference in between-factor loadings = 0.56) and from 0.42 to 0.75 for productive entrepreneurial motives (mean difference in between-factor loadings = 0.61). Second, we evaluated the correlations between the items for the two measures (no correlations should be greater than 0.7, since this level of association would indicate a majority of shared variance). The absolute values of the correlations ranged from 0.04 to 0.32, with an average correlation of 0.15. Thus, the measures appear to demonstrate reasonable discriminant validity.

Sample 2 (MBAs). Due to recent arguments that control variables can distort relationships between focal variables of interest (Becker 2005; Lance and Vandenberg 2009; Schjoedt and Bird 2014; Spector and Brannick 2011), the hypotheses were evaluated both with and without controls. Since there was no change in the statistical significance or pattern of results according to whether the controls were included, the full models including the controls are presented and used to test the study hypotheses. All independent variables were mean-centered in order to reduce the potential for multicollinearity. The change in *R*-squared is presented for each model in terms of additional variance accounted for by the main effects above and beyond the control variables.

The first hypothesis, regarding entrepreneurial intentions was examined using the full samples of 508 business undergraduates and 234 MBAs. The remaining hypotheses, regarding unproductive and productive entrepreneurial motives, were examined using the respective subsets of 281 business undergraduates and 145 MBAs high in entrepreneurial intentions (i.e., those scoring an average of 3 or higher; that is endorsing the statements, and thus effectively qualifying as early-stage nascent entrepreneurs; Reynolds and White 1997). This approach was used because it was considered most appropriate to examine the entrepreneurial motives of *only* those persons who showed behavioral intentions toward starting a new venture (i.e., those involved in the nascent stages of planning to launch a business). Correlation tables for the full samples and the entrepreneurial subsamples are presented as Tables 1 and 3. Tables 2, 4, and 5 present the regression results for H1–H3.

Common Method Variance Analyses and Social Desirability Bias

Multiple steps were taken as part of the research design to reduce the threat of common method variance and social desirability. First, the dependent variable of entrepreneurial intentions involved nonsubjective behavior—specifically, whether a participant had begun the entrepreneurial process (e.g., has started business planning). The dependent variables regarding an individual's *motives* for starting the entrepreneurial process, are necessarily within the purview of the individual—that is, an individual's motives are an intraindividual phenomenon. As a result, the actors in question are necessarily informants of this variable. Second, participant responses

were anonymous, thus eliminating any reason to misrepresent one's motives and reducing the likelihood of social desirability bias.

The above points notwithstanding, two steps were taken to evaluate the threat of common method variance and social desirability bias. First, we assessed the amount of variance accounted for by loading all of the items from the study's focal variables onto a single factor. This accounted for 20.44 percent of the variance for the undergraduate sample and 21.42 percent of the variance for the MBA sample, which in each case is well below the 50 percent threshold that is needed to be a distinct construct. Second, as part of our supplemental data collection ($n = 130$), we examined the relationship of our dependent variables with a 5-item measure of social desirability ($\alpha = 0.75$) developed by Hays, Hayashi, and Stewart (1989). To do so, we regressed entrepreneurial intentions ($B = -0.06$, $p > .10$), unproductive entrepreneurial motives ($B = 0.13$, $p > .10$), and productive entrepreneurial motives ($B = -0.17$, $p > .10$) onto the measure of social desirability. Each of the regression coefficients was nonsignificant, indicating that none of the focal dependent variables (i.e., entrepreneurial intentions, unproductive entrepreneurial motives, productive entrepreneurial motives) are significant predictors of social desirability. Taken together, the above noted evidence suggests that neither common method variance nor social desirability biases threatened our ability to test the study's hypotheses.

Results

Prior to our hypothesis testing, we first consider the potential threat of multicollinearity. The possibility of multicollinearity was examined using variance inflation factor (VIF) and conditional index (CI) scores for models used to test each of the hypotheses. The largest VIF score across both samples was 1.42, which is well below the cutoff value of 10 that is considered to be a problematic (Neter et al. 1996). In addition, the highest CI score across both samples was 1.86, which is well below the value of 30 that is seen as an indicator of multicollinearity (Tabachnick and Fidell 2001). Accordingly, multicollinearity does not appear to be a threat to our hypothesis testing. We now turn to the formal tests of our hypotheses.

H1 predicted that individuals' levels of narcissism (H1a), psychopathy (H1b), Machiavellianism (H1c) would be positively associated with

Table 1
Descriptive Statistics and Variable Intercorrelations for Full Samples

Undergraduates (N = 508)												
	r											
Variable	Mean	S.D. ^a	1	2	3	4	5	6	7	8	9	10
Age	21.52	3.22										
Sex	0.58	0.49	0.00									
Caucasian	0.81	0.39	0.01	0.02								
Married	0.05	0.22	0.51**	0.03	0.04							
Children	0.03	0.16	0.47**	-0.03	0.46**	0.02						
Entrepreneurship course	0.36	0.48	0.15**	0.08	-0.08	-0.02	0.03					
Private school	0.70	0.46	0.27**	-0.10*	-0.01	0.11*	0.08	0.40**				
Narcissism	3.50	0.76	-0.09*	0.07	0.03	-0.01	-0.05	0.02	-0.06			
Psychopathy	2.14	0.75	0.05	0.28**	-0.03	-0.01	0.02	-0.03	-0.15**	0.16**		
Machiavellianism	2.42	0.88	-0.07	0.28**	0.02	-0.08	-0.10*	-0.01	-0.14**	-0.29**	0.50**	
Entrepreneurial intentions	3.11	1.23	0.12**	0.19**	-0.16**	0.08	0.03	0.27**	0.09*	0.09*	-0.02	-0.01

MBAs (N = 234)												
	r											
Variable	Mean	S.D. ^a	1	2	3	4	5	6	7	8	9	10
Age	29.62	6.61										
Sex	0.68	0.47	-0.03									
Caucasian	0.74	0.44	-0.11	0.08								
Married	0.42	0.49	0.34**	0.00	0.01							
Children	0.24	0.43	0.57**	-0.03	0.06	0.50**						
Entrepreneurship course	0.23	0.42	-0.10	-0.01	-0.03	-0.17**	-0.09					
Private school	0.79	0.41	0.25**	0.16*	-0.00	0.15*	0.15*	-0.17*				
Narcissism	3.09	0.75	-0.14*	0.20**	0.08	-0.04	-0.17**	-0.05	0.09			
Psychopathy	2.10	0.81	-0.20**	0.24**	0.17**	-0.13*	-0.15*	0.02	-0.04	0.18**		
Machiavellianism	2.30	0.87	-0.14*	0.17*	0.17*	-0.16*	-0.12	0.07	-0.07	-0.07	0.48**	
Entrepreneurial intentions	3.31	1.21	0.05	0.18**	-0.03	0.05	0.07	0.11	-0.02	0.16**	0.11	0.07

^aS.D., standard deviation.

* $p < .05$.

** $p < .01$.

Table 2
Regression Models of Entrepreneurial Intentions for Full Samples

Variable	Entrepreneurial Intentions	
	Undergraduates (<i>N</i> = 508)	MBAs (<i>N</i> = 234)
	Model 1 <i>B</i> (<i>SE</i> ^a)	Model 2 <i>B</i> (<i>SE</i>)
Control variables		
Age	0.03 (0.02)	0.01 (0.02)
Sex	0.49** (0.11)	0.41* (0.18)
Caucasian	-0.46** (0.13)	-0.16 (0.18)
Married	0.29 (0.29)	0.06 (0.19)
Children	-0.20 (0.37)	0.25 (0.25)
Entrepreneurship course	0.60** (0.12)	0.35 (0.19)
Private school	-0.05 (0.13)	-0.19 (0.20)
Main effects		
Narcissism	0.17* (0.07)	0.26* (.11)
Psychopathy	-0.11 (0.08)	0.13 (.11)
Machiavellianism	-0.07 (0.07)	-0.05 (.11)
<i>F</i> -Ratio	8.45**	2.10*
<i>R</i> ²	0.15	0.09
<i>F</i> -Change	2.95*	2.24
ΔR^2	0.02	0.03

^aS.E., standard error.

**p* < .05.

***p* < .01.

their intentions to start a new venture. As shown in Models 1 and 2 of Table 2, in both samples, narcissism was found to have a significant positive relationship with entrepreneurial intentions ($B_{ugrad} = 0.17$, $p < .05$; $B_{MBA} = 0.26$, $p < .05$), whereas psychopathy ($B_{ugrad} = -0.11$, $p > .10$; $B_{MBA} = 0.13$, $p > .10$) and Machiavellianism ($B_{ugrad} = -0.07$, $p > .10$; $B_{MBA} = -0.05$, $p > .10$) were not significantly related to entrepreneurial intentions. Overall, these results support H1a, and do not support H1b or H1c.

H2 predicted that individuals' levels of narcissism (H2a), psychopathy (H2b), and Machiavellianism (H2c) would be positively associated with their level of unproductive entrepreneurial motives. As shown in Models 1 and 2 of Table 4, narcissism was indeed positive and significant in the undergraduate sample ($B_{ugrad} = 0.14$, $p < .05$), and nonsignificant in the MBA sample

($B_{MBA} = 0.00$, $p > .10$); as predicted, psychopathy ($B_{ugrad} = 0.25$, $p < .01$; $B_{MBA} = 0.17$, $p < .05$) and Machiavellianism ($B_{ugrad} = 0.19$, $p < .01$; $B_{MBA} = 0.23$, $p < .01$) were significantly linked to higher unproductive entrepreneurial motives across both samples. Overall, these results offer partial support for H2a, and full support for H2b and H2c.

H3 predicted that individuals' levels of narcissism (H3a), psychopathy (H3b), and Machiavellianism (H3c) would be negatively associated with their level of productive entrepreneurial motives. As shown in Models 1 and 2 of Table 5: narcissism was significant but positive in the undergraduate sample ($B_{ugrad} = 0.10$, $p < .05$) and nonsignificant in the MBA sample ($B_{MBA} = 0.03$, $p > .10$); psychopathy, as expected, had a significant negative relationship with productive entrepreneurial motives in both samples

Table 3
Descriptive Statistics and Variable Intercorrelations for Subsamples of Early-Stage Nascent Entrepreneurs

Variable	Mean	S.D. ^a	<i>r</i>														
			1	2	3	4	5	6	7	8	9	10	11				
1. Age	21.75	3.43															
2. Sex	0.66	0.48	-0.04														
3. Caucasian	0.77	0.43	0.01	0.10													
4. Married	0.01	0.24	0.51**	-0.01	0.07												
5. Children	0.03	0.18	0.42**	-0.04	0.01	0.46**											
6. Entrepreneurship course	0.44	0.50	0.13*	0.08	-0.12	0.04	0.04										
7. Private school	0.72	0.45	0.28**	-0.11	-0.05	0.07	0.46**	0.07									
8. Narcissism	3.57	0.74	-0.10	0.03	0.02	0.03	-0.09	-0.09	-0.01	-0.05							
9. Psychopathy	2.16	0.77	0.01	0.24**	0.01	-0.01	0.02	-0.06	-0.06	-0.18**	0.09						
10. Machiavellianism	2.44	0.80	-0.03	0.25**	0.02	-0.08	-0.07	-0.10	-0.10	-0.23**	0.18**	0.41**					
11. Unproductive entrepreneurial motives	2.55	0.75	-0.05	0.14*	-0.12*	-0.08	-0.10	-0.10	-0.09	-0.02	0.20**	0.34**	0.33**				
12. Productive entrepreneurial motives	4.37	0.56	-0.20**	-0.15*	-0.12*	-0.16**	0.01	0.12	0.12	0.04	0.12	-0.26**	-0.06	-0.18**			

Table 3
Continued

		MBAs (<i>n</i> = 145)											
		<i>r</i>											
Variable	Mean	S.D. ^a	1	2	3	4	5	6	7	8	9	10	11
1. Age	29.75	6.66											
2. Sex	0.75	0.43	-0.05										
3. Caucasian	0.75	0.43	-0.15	0.11									
4. Married	0.43	0.50	0.28**	-0.02	0.05								
5. Children	0.26	0.44	0.56**	-0.03	0.08	0.49**							
6. Entrepreneurship course	0.26	0.44	-0.09	0.04	-0.10	-0.22**	-0.13						
7. Private school	0.79	0.41	0.28**	0.02	0.02	0.20*	0.14	-0.13					
8. Narcissism	3.18	0.76	-0.17*	0.14	0.10	0.02	-0.11	-0.07	0.07				
9. Psychopathy	2.17	0.83	-0.21**	0.15	0.20*	-0.11	-0.14	0.02	-0.10	0.22**			
10. Machiavellianism	2.34	0.90	-0.17*	0.15	0.16*	-0.16*	-0.09	0.06	-0.16	0.31**	0.50**		
11. Unproductive entrepreneurial motives	2.36	0.75	-0.12	0.19*	0.04	-0.01	-0.03	-0.12	0.05	0.17*	0.33**	0.36**	
12. Productive entrepreneurial motives	4.12	0.73	0.00	-0.22**	-0.25**	-0.02	-0.11	0.18*	-0.15	-0.10	-0.32**	-0.23**	-0.47**

^aS.D., standard deviation.

**p* < .05.

***p* < .01.

Table 4
Regression Models of Unproductive Entrepreneurial Motives for
Subsamples of Early-Stage Nascent Entrepreneurs

Variable	Unproductive Entrepreneurial Motives	
	Undergraduates (<i>n</i> = 281)	MBAs (<i>n</i> = 145)
	Model 1 <i>B</i> (<i>SE</i> ^{<i>a</i>})	Model 2 <i>B</i> (<i>SE</i>)
Control variables		
Age	-0.00 (0.02)	-0.02 (0.01)
Sex	0.11 (0.09)	0.22 (0.14)
Caucasian	-0.25** (0.10)	-0.17 (0.14)
Married	-0.11 (0.21)	0.03 (0.14)
Children	-0.24 (0.27)	0.11 (0.18)
Entrepreneurship course	-0.21* (0.09)	-0.24 (0.14)
Private school	0.27* (0.11)	0.22 (0.15)
Main effects		
Narcissism	0.14* (0.06)	0.00 (0.08)
Psychopathy	0.25** (0.06)	0.17* (0.08)
Machiavellianism	0.19** (0.05)	0.23** (0.08)
<i>F</i> -Ratio	7.73**	3.80**
<i>R</i> ²	0.22	0.20
<i>F</i> -Change	18.23**	8.44**
ΔR^2	0.16	0.15

^aS.E., standard error.

**p* < .05.

***p* < .01.

($B_{ugrad} = -0.19$, $p < .01$; $B_{MBA} = -.22$, $p < .01$); and Machiavellianism showed a nonsignificant relationship with productive entrepreneurial motives in both samples ($B_{ugrad} = 0.04$, $p > .10$; $B_{MBA} = -0.08$, $p > .10$). Accordingly, the results fully support H3b, and do not support H3a and H3c.

Discussion

This study sought to examine dark psychological predictors of entrepreneurial intentions and associated motives for engaging in nascent entrepreneurial activity. Overall, the findings demonstrate a consistent pattern in which narcissism was positively related to entrepreneurial intentions, and psychopathy and Machiavellianism being neither over- nor under-represented characteristics in those with entrepreneurial

intentions. With regard to participants high in entrepreneurial intentions, those at the beginning of the entrepreneurial process and thus qualifying as early-stage nascent entrepreneurs, the results indicate a general pattern in which psychopathy and Machiavellianism were positively associated with unproductive entrepreneurial motives, and psychopathy was negatively related to productive entrepreneurial motives. We now discuss the results in greater detail, followed by implications, limitations and future directions, and concluding thoughts.

The Dark Triad and Entrepreneurial Intentions

Drawing from life history theory, we anticipated that the propensity for individuals high

Table 5
Regression Models of Productive Entrepreneurial Motives for
Subsamples of Early-Stage Nascent Entrepreneurs

Variable	Productive Entrepreneurial Motives	
	Undergraduates (<i>n</i> = 281)	MBA's (<i>n</i> = 145)
	Model 1 <i>B</i> (<i>SE</i> ^{<i>a</i>})	Model 2 <i>B</i> (<i>SE</i>)
Control variables		
Age	-0.03** (0.01)	0.00 (0.01)
Sex	-0.13 (0.07)	-0.27* (0.13)
Caucasian	-0.12 (0.07)	-0.22 (0.13)
Married	-0.28 (0.16)	0.11 (0.13)
Children	0.52* (0.20)	-0.26 (0.17)
Entrepreneurship course	0.14* (0.07)	0.27* (0.13)
Private school	-0.01 (0.08)	-0.30* (0.15)
Main effects		
Narcissism	0.10* (0.04)	0.03 (.08)
Psychopathy	-0.19** (0.05)	-0.22** (0.08)
Machiavellianism	0.04 (0.04)	-0.08 (0.07)
<i>F</i> -Ratio	6.06**	4.29**
<i>R</i> ²	0.18	0.24
<i>F</i> -Change	7.44**	5.09**
ΔR^2	0.07	0.09

^aS.E., standard error.

**p* < .05.

***p* < .01.

in the dark triad to follow a “fast life” behavioral strategy would result in such persons having higher intentions to become entrepreneurs. However, our results did not find each facet of the dark triad to individually predict entrepreneurial intentions. Narcissism was the only individual facet of the dark triad that had a significant relationship with entrepreneurial intentions across both samples. This finding replicates other research demonstrating a positive linkage of narcissism with entrepreneurial intentions (Mathieu and St-Jean 2013). Our results extend previous findings by providing evidence of this relationship within the context of the full dark triad; that is, we find that narcissism *uniquely* explains significant

variance in entrepreneurial intentions above-and-beyond (controlling for) psychopathy and Machiavellianism.

As noted, psychopathy and Machiavellianism were not found to be significant individual predictors of entrepreneurial intentions. The lack of a relationship for psychopathy and Machiavellianism with entrepreneurial intentions could theoretically be explained by subtle differences between the dark triad characteristics. Whereas narcissism inflates self-perceptions of ability and makes attention and admiration an ends in itself, this is not the case for psychopathy or Machiavellianism. Absent narcissistic beliefs or delusions of grandeur, it takes considerable work to start a venture—and entrepreneurial

success is inherently uncertain. Thus, it may be at least as preferable for individuals high in psychopathy or Machiavellianism to join existing ventures or organizations, where there are already resources and rents to appropriate, and other individuals (e.g., coworkers) to be used for unreciprocated social exchange. The underlying (over)confidence and attention-seeking characteristics associated with narcissism may partly explain why it was related to entrepreneurial intentions while psychopathy and Machiavellianism were not. Although psychopathy's emotional callousness and Machiavellianism's capacity for manipulation may be useful to an individual *once* entering entrepreneurship, it appears they do not significantly relate to entrepreneurial intentions. In addition, it should be underscored that neither psychopathy nor Machiavellianism had a significant negative relationship with entrepreneurial intentions. This suggests that these characteristics are neither over- nor under-represented in those with entrepreneurial intentions. In other words, early-stage nascent entrepreneurs may, on average, be a bit more narcissistic than their peers, but are not distinguishably higher or lower in Machiavellian and psychopathy than business-oriented peers.

The Dark Triad and Unproductive versus Productive Entrepreneurial Motives

For early-stage nascent entrepreneurs (i.e., those endorsing high entrepreneurial intentions, including having begun business planning), we applied social exchange theory to predict that the dark triad would be positively related to unproductive entrepreneurial motives and negatively related to productive entrepreneurial motives. In so doing, we suggested that the entrepreneurial motives of those higher in the various facets of the dark triad would be characterized by value appropriation rather than value creation.

The findings yielded results generally consistent with predictions for unproductive entrepreneurial motives, and were mixed for productive entrepreneurial motives. Psychopathy and Machiavellianism were found to each have a positive relationship with unproductive entrepreneurial motives across both samples, whereas the relationship of narcissism with unproductive entrepreneurial motives was positive and significant for the undergraduate sample but nonsignificant for the MBA sample (narcissism did, however, have a significant positive correlation

with unproductive entrepreneurial motives in the MBA sample: $r = 0.17$, $p < .05$; the relationship was nonsignificant only after controlling for psychopathy and Machiavellianism). Thus, consistent with a value appropriating approach to relationships and broadly toward life, the dark triad—and particularly the darkest traits in the triad (i.e., psychopathy and Machiavellianism; Rauthmann and Kolar 2012)—were strongly linked with an unproductive approach toward entrepreneurship.

In terms of productive entrepreneurial motives, psychopathy was the only consistent predictor across both samples—operating in alignment with our general expectations in terms of the dark triad having a negative relationship with such motives. Considering that a callous lack of emotion and wanton disregard for others are the most defining markers of psychopathy (Dutton 2012), it is not surprising that this facet of the dark triad stood apart as being the characteristic that was most negatively related to productive entrepreneurial motives. This is consistent with the general callous nature of such persons and research indicating a negative relationship of psychopathy with social-oriented entrepreneurship (Akhtar, Ahmetoglu, and Chamorro-Premuzic 2013).

In contrast, within the undergraduate sample, narcissism was found to have a positive relationship with productive entrepreneurial motives. This might be explained by the narcissistic desire for attention and admiration, considering the social appeal of productive value creation—particularly among idealistic undergraduates who are currently part of a generation that has grown up with models of prosocial-oriented startups being viewed as cool by their peers (Mycoskie 2012).

In terms of the other nonsignificant finding, individuals who are high in Machiavellianism may not be motivated by value creation for anyone other than themselves, as admiration is not a valued end for such persons; yet being perceived as a socially oriented entrepreneur might facilitate their duplicitous theater, offering an explanation for why such individuals do not demonstrate negative inclinations toward productive orientations.

Implications for Entrepreneurship Theory

The entrepreneurship literature on individual difference characteristics has been dominated by positive traits, particularly with respect to those linked with entrepreneurial intentions and

motives (Antonicic et al. 2015; Zhao, Seibert, and Lumpkin 2010). The current research set out to alternatively consider potential negative or dark individual difference characteristics. Our motivation was to examine potential unproductive (i.e., value-appropriating) and productive (i.e., value-creating) drivers of individuals' interest starting a new venture. The reason being that it is arguably as important to identify unproductive drivers of entrepreneurship as it is to identify productive drivers, so that we not only know what to promote, but also what should be re-channeled or discouraged (Shepherd 2015). While the vast majority of existing theory on entrepreneurial entry and associated policy presumes value-creating entrepreneurship, our results suggest that some degree of caution should be taken. For example, individuals high in psychopathy and/or Machiavellianism were neither more nor less likely to possess entrepreneurial intentions than others; however, among such persons high in psychopathy and/or Machiavellianism with entrepreneurial intentions, when entering this vocation, they are likely to do so with unproductive motives aimed at appropriating value rather than creating it.

The findings also surface a potentially counter-intuitive upside of narcissism among undergraduates, an individual characteristic on the rise within this population (Twenge et al. 2008). The significant positive relationship of narcissism with entrepreneurial intentions, and moreover with value-creating entrepreneurial motives, suggests that this otherwise egocentric characteristic holds productive potential and could be channeled for good. Considering increasing levels of narcissism in society and among undergraduate students in particular (Twenge and Campbell 2010), if properly directed, it may be a psychological resource instrumental for entry into productive entrepreneurship in the face of long odds. Future research is necessary to further examine "how much" narcissism may be beneficial, as well as how it can be most constructively channeled.

Similarly, future research is needed to determine the interplay and effects of the dark triad on new venture survival and performance. On one hand, it reasons that having "just enough" of the dark triad characteristics may be helpful (or adaptive) with respect to certain aspects of entrepreneurship such as resource mobilization, resistance to stress, and even innovation (Jonason, Koenig, and Tost 2010; Jonason, Li, and Teicher 2010). Yet on the other hand, venture

creation, let alone survival and performance, typically requires a long-term view and focused persistence (Baron, Franklin, and Hmieleski 2016; Hmieleski, Corbett, and Baron 2013)—which may be at odds with key aspects of the dark triad. Thus, similar to other double-edged characteristics such as optimism and positive affect (Baron, Hmieleski, and Henry 2012; Baron, Tang and Hmieleski 2011; Hmieleski and Baron 2009) or behavioral disinhibition (Lerner 2016), it is possible that aspects of the dark triad could be positively related to interest and entry into entrepreneurship, while—at high levels—negatively related to sustained performance in developing and leading new ventures. Future research is needed to explicitly test these and other questions relating to the double-edged nature of personality characteristics (DeNisi 2015; Klotz and Neubaum 2016).

Implications for Education, Policy, and Practice

Our findings offer several potential implications for education, policy, and practice. In terms of education, it appears that business school faculty may need to become increasingly accustomed to interacting with students high on the dark triad personality characteristics—as these dispositions are on the rise among this population (Bergman, Westerman, and Daly 2010; Webster and Harmon 2002). At first thought, this fact may seem unfortunate and even daunting; yet in terms of entrepreneurship there may be a silver lining. Such students may have less fear than typical students in terms of launching ventures and may be naturally skilled at acquiring resources and bootstrapping (Jonason, Koenig, and Tost 2010; Jonason, Li, and Teicher 2010). The self-centered nature of individuals who are high on facets of the dark triad, particularly those who are high on narcissism, however, creates the need to move students' mindsets from "I" and "me" (which has become the norm for students due to the rise in social media; Twenge and Campbell 2010) to "we" and "us." This point is of crucial importance considering the need for entrepreneurs to build teams and lead employees (Hmieleski, Cole, and Baron 2012; Klotz et al. 2014). The development of self-regulation skills will be especially important for business school students high in the dark triad, such that they may be able to capitalize on its adaptive aspects while avoiding its socially counter-productive

downside that could diminish the chances of achieving long-term success.

In terms of practice, it might be important for investors who are betting on mid- to long-term returns from startups to be weary of those that are led by entrepreneurs who possess psychopathic, and to a lesser extent Machiavellian, characteristics. Such individuals appear to be motivated by appropriative strategies that might be advantageous for producing short-term results, but could become less viable in the long-run if their self-interested behavior eventually tarnishes their reputation. Thus, problems of agency are likely to be heightened when dealing with such persons—requiring tightly aligning interests, appropriate organizational policies and procedures, and independent external oversight. In contrast, those high in narcissism may be partly driven by a productive orientation that could be effective at producing long-term results if properly channeled. Importantly, consideration of the dark triad (and associated motives) by investors when evaluating aspiring entrepreneurs should not preclude evaluation of other factors that have been previously identified as predictors of individuals' potential for creating profitable new ventures. Rather, we suggest that traditional factors (e.g., entrepreneurial experience) should be considered hand-in-hand with the underlying dispositions and motives of nascent entrepreneurs so as to maximize both financial performance and overall value creation.

From a policy perspective, it may prove useful for grant programs intending to foster entrepreneurship to be strategic in terms of focusing toward the communal aspects of venture creation and away from a more celebrity-oriented view of entrepreneurship. Government agencies and universities that award grants and prize money to startup ventures should be careful to avoid “fast-life” entrepreneurs high in the dark triad (particularly, psychopathy and Machiavellianism), because such persons may be likely to recklessly run through resources quickly without providing any long-term societal benefits. In practice, very simple adjustments to the design of competitions and awards could potentially help. For example: independent third-party evaluations (e.g., customers) of the entrepreneur/startup could be included as part of judging criteria as well as interviews with startup subordinates (looking for evidence of abusive or other nondevelopmental interactions); awards could deemphasize cash prizes and instead focus on

nonpecuniary awards (e.g., free enrollment in training programs and mentorships, aversive to the narcissist) and distribute prize money over a period of time; and press-releases and ceremonies could present the award to the startup *team* (versus the entrepreneur) ideally alongside the customers/stakeholders that the venture seeks to serve.

Limitations and Future Directions

We now address a few limitations of the current research, and offer some suggestions for future directions. First, it could be questioned as to whether our findings generalize to older or more experienced business professionals. For research examining predictors of entrepreneurial intentions, business undergraduate and MBA samples are seemingly at least as appropriate as other populations such as full-time employees. Many individuals begin the entrepreneurial process while in college, and most business undergraduates and MBA students are on the verge of making vocational choices—to become (co)founders, employees of a startup firm, or employees of existing organizations. Additionally, the increase of dark triad characteristics among college students made this an interesting population for examining the study's research question. It is also important to note that a number of participants in our study did have some degree of entrepreneurial experience. For example, many had been employed by a startup ($n_{ugrad} = 150$, $n_{MBA} = 55$) and several had previously launched a new venture ($n_{ugrad} = 71$, $n_{MBA} = 53$). It would, however, be interesting for future research to examine similar research questions using samples of participants that represent a broader range of life stages.

Another potential limitation is that our research used a cross-sectional design. Our approach in this regard seemed warranted considering that there is considerable evidence that intentions are a strong predictor of future actions (Ajzen 1991), entrepreneurship is an agentic activity that cannot begin without intentions (Krueger, Reilly, and Carsrud 2000), and because we examined entrepreneurial intentions from a behavioral perspective that evaluated the extent to which actual steps were taken toward the launch of a new venture (e.g., whether the participant had considered the type of business to be started, whether the participant had begun planning to start a business). Nonetheless, it would be useful for future studies to track the extent to which participants' dark triad

characteristics are associated with the actual launching of new ventures.

Considering that the study's measures were gathered from a single source, there is a possibility that our results could be partly influenced by common method variance and social desirability bias. Our findings do, however, appear robust—based on the fact that they held even after including a range of controls, were generally consistent across two different samples, and that the results did not appear to be biased by social desirability (according to our supplemental data collection and analysis). Despite these facts, the opportunity remains for future research to use other designs and sources of data.

The fact that we used a relatively short measure of the dark triad (the Dirty Dozen; Jonason and Webster 2010) could be viewed as another limitation of the current research. We selected this measure for use because it is concise, has good psychometric properties, and contains items that are worded in such a way as to be relatively inoffensive as compared to other established measures of the dark triad. These factors are even more important when considering measures for studies involving full-time founders, as other longer and more intrusive measures may be less practical for use among such populations. With these advantages stated, it should also be noted that a downside of using Dirty Dozen is that its brevity tends to limit its predictive power as compared to other lengthier measures of the dark triad (Miller et al. 2012). As an alternative to the Dirty Dozen, the 27-item Short Dark Triad (SD3) measure recently developed by Jones and Paulhus (2014) is another option for entrepreneurship researchers to consider.

It is also important to underscore that our development of measures for unproductive and productive entrepreneurial intentions is only intended to be a first step at assessing these constructs. As such, we encourage researchers to develop more in-depth scales to measure these, as well as other types, of entrepreneurial motives. The development of such measures will be critical to build a more extensive base of knowledge regarding *why* individuals intend to engage in entrepreneurial activity (Carsrud and Brännback 2011; Shepherd 2015).

Next, the fact we did not observe the dark triad to explain a great deal of variance in entrepreneurial intentions within the current study (albeit not much less than other dispositional predictors of entrepreneurial intentions reported within the literature; e.g., Zhao, Seibert, and

Lumpkin 2010) leaves open the related question of whether such characteristics might be more prevalent among later-stage entrepreneurs. There are a few plausible reasons why the dark triad may indeed be higher among later-stage entrepreneurs than incipient nascent entrepreneurs. First, the uncertain and challenging nature of the entrepreneurial environment may activate dark triad traits within individuals, thus enhancing or further developing these characteristics within individuals who possess such dispositions (much like individuals born with genetic characteristics for athleticism become fitter more quickly and to higher levels when exercising than persons not possessing such characteristics). Another possibility is that dark triad characteristics may be advantageous in helping to survive the brutish conditions and challenges associated with early-stage venturing. In such case, the proportion of entrepreneurs who are high in the dark triad might increase among those in the later stages of the nascent venturing process, as individuals low in the dark triad may (initially) be disproportionately selected out (or exit from) the population. In the long-run, however, such a trend would likely reverse, as the short-term (fast-life) orientation of those high in the dark triad is likely to be counter-productive for the long-term growth and sustainability of firms. These conjectures represent potentially interesting opportunities for future research.

We should also clarify that life history theory and social exchange theory were applied in the current research due to the natural linkages between these theories, their appropriateness with examining entrepreneurial intentions and motives, and because these theories have arguably been the most commonly used frameworks applied for the study of the dark triad (Jonason, Koenig, and Tost 2010; O'Boyle et al. 2012). With this said, other theories may also be appropriate for examining the dark triad within the context of new venture creation and development. For example, person-job fit theory and contingency theories might be particularly useful frameworks for examining whether the dark triad is an adaptive set of personality characteristics for entrepreneurs in general (Kristof-Brown, Zimmerman, and Johnson 2005; Markman and Baron 2003) and within certain entrepreneurial contexts in particular (Hmieleski and Baron 2008; Hmieleski, Carr, and Baron 2015). More generally, future research involving the dark triad could bridge relatively dissonant or cross-

level theoretical perspectives on organizing. For example: whether, when, or which actors resemble Schumpeterian opportunity entrepreneurs, versus *self-interest with guile* opportunists common to strategy and economics.

Finally, our consideration of entrepreneurial motives and intent presumed formal economy venturing. Our theory and findings suggest the opportunity for future research illuminating the role of the dark triad in more *shadowy* types of entrepreneurial activity such as that which takes place in the underground economy (Webb et al. 2009).

Conclusions

Moving beyond the largely taken-for-granted view of entrepreneurship as source of value creation, the current research considered individual-level factors relating to unproductive versus productive venturing. Our findings suggest that, even within an institutional context suitable for productive entrepreneurship, individual differences may motivate actors to pursue unproductive motives for venturing. Previous research on entrepreneurial intentions has typically assumed that *the more new ventures started, the better*—thus, attempting to discover levers (e.g., entrepreneurial self-efficacy) that might be used to increase entrepreneurial intentions of the general population. Our nuanced view suggests that not all such levers are likely to be equal (e.g., some may attract/enable individuals high in the dark triad, inadvertently increasing the entry of individuals with unproductive motives). For these reasons, policy makers and potential new venture stakeholders ought to be vigilant in terms of the design of incentives and in managing their relationships with individuals potentially high in the dark triad. While individuals high in the dark triad may not be greatly over-represented in the pool of aspiring entrepreneurs, those who do possess entrepreneurial intentions may stand to use entrepreneurship as a vehicle for appropriating value rather than creating it.

References

- Adrian, R., S. C. Richards, and D. L. Paulhus (2013). "The Dark Triad of Personality: A 10 Year Review," *Social and Personality Psychology Compass* 7, 199–216.
- Ajzen, I. (1991). "The Theory of Planned Behavior," *Organizational Behavior and Human Decision Processes* 50, 179–211.
- Akhtar, R., G. Ahmetoglu, and T. Chamorro-Premuzic (2013). "Greed Is Good? Assessing the Relationship between Entrepreneurship and Subclinical Psychopathy," *Personality and Individual Differences* 54, 420–425.
- Anderson, A. R., and L. Warren (2011). "The Entrepreneur as Hero and Jester: Enacting the Entrepreneurial Discourse," *International Small Business Journal* 29, 589–609.
- Antoncic, B., T. Bratkovic Kregar, G. Singh, and A. F. DeNoble (2015). "The Big Five Personality-Entrepreneurship Relationship: Evidence from Slovenia," *Journal of Small Business Management* 53, 819–841.
- Babiak, P., and R. D. Hare (2006). *Snakes in Suits: When Psychopaths Go to Work*. New York: HarperCollins Publishing.
- Baron, R. A. (2015). *Essentials of Entrepreneurship: Evidence and Practice*. Northampton, MA: Edward Elgar.
- Baron, R. A., R. J. Franklin, and K. M. Hmieleski (2016). "Why Entrepreneurs Often Experience Low, Not High, Levels of Stress: The Joint Effects of Selection and Psychological Capital," *Journal of Management* 42(3), 742–768.
- Baron, R. A., K. M. Hmieleski, and R. A. Henry (2012). "Entrepreneurs' Dispositional Positive Affect: The Potential Benefits—and Potential Costs—of Being 'Up'," *Journal of Business Venturing* 27, 310–324.
- Baron, R. A., J. Tang, and K. M. Hmieleski (2011). "The Downside of Being 'Up': Entrepreneurs' Dispositional Affect and Firm Performance," *Strategic Entrepreneurship Journal* 5(2), 101–119.
- Baron, R. A., H. Zhao, and Q. Miao (2015). "Personal Motives, Moral Disengagement, and Unethical Decisions by Entrepreneurs: Cognitive Mechanisms on the 'Slippery Slope'," *Journal of Business Ethics* 128(1), 107–118.
- Baumol, W. (1990). "Entrepreneurship: Productive, Unproductive, and Destructive," *Journal of Political Economy* 98, 893–921.
- Becker, T. E. (2005). "Potential Problems in the Statistical Control of Variables in Organizational Research: A Qualitative Analysis with Recommendations," *Organizational Research Methods* 8, 274–289.
- Bergman, J. Z., J. W. Westerman, and J. P. Daly (2010). "Narcissism in Management Education," *Academy of Management Learning and Education* 9, 119–131.

- Brown, T., J. Sautter, L. Littvay, A. Sautter, and B. Bearnes (2010). "Ethics and Personality: Empathy and Narcissism as Moderators of Ethical Decision Making in Business Students," *Journal of Education for Business* 85, 203–208.
- Bruyat, C., and P. A. Julien (2001). "Defining the Field of Research in Entrepreneurship," *Journal of Business Venturing* 16, 165–180.
- Buckels, E. E., D. N. Jones, and D. L. Paulhus (2013). "Behavioral Confirmation of Everyday Sadism," *Psychological Science* 24, 2201–2209.
- Buss, D. M. (2009). "How Can Evolutionary Psychology Successfully Explain Personality and Individual Differences?," *Perspectives on Psychological Science* 4, 359–366.
- Carsrud, A., and M. Brännback (2011). "Entrepreneurial Motivations: What Do We Still Need to Know?," *Journal of Small Business Management* 49, 9–26.
- Carter, G. L., A. C. Campbell, S. Muncer, and K. A. Carter (2015). "A Mokken Analysis of the Dark Triad 'Dirty Dozen': Sex and Age Differences in Scale Structure and Issues with Individual Items," *Personality and Individual Differences* 83, 185–191.
- Chatterjee, A., and D. C. Hambrick (2007). "It's All About Me: Narcissistic Chief Executive Officers and Their Effects on Company Strategy and Performance," *Administrative Science Quarterly* 52, 351–386.
- Chen, C. C., P. G. Greene, and A. Crick (1998). "Does Entrepreneurial Self-Efficacy Distinguish Entrepreneurs from Managers?," *Journal of Business Venturing* 13, 295–316.
- Cohen, J., P. Cohen, S. G. West, and L. S. Aiken (2003). *Applied Multiple Regression/Correlation Analysis for the Behavior Sciences*, 3rd ed. Mahwah, NJ: Lawrence Erlbaum Associates.
- Cook, K. S., and E. Rice (2003). "Social Exchange Theory," in *The Handbook of Social Psychology*. Ed. J. DeLamater. New York: Kluwer Academic/Plenum Publishers, 53–76.
- Cooper, A. C., and K. W. Artz (1995). "Determinants of Satisfaction for Entrepreneurs," *Journal of Business Venturing* 10, 439–457.
- Côté, S., K. A. DeCelles, J. M. McCarthy, G. A. Van Kleef, and I. Hideg (2011). "The Jekyll and Hyde of Emotional Intelligence: Emotion-Regulation Knowledge Facilitates both Prosocial and Interpersonally Deviant Behavior," *Psychological Science* 22, 1073–1080.
- Decuyper, M., S. De Pauw, F. De Fruyt, M. De Bolle, and B. J. De Clercq (2009). "A Meta-Analysis of Psychopathy, Antisocial PD, and FFM Associations," *European Journal of Personality* 23, 531–565.
- Deluga, R. J. (2001). "American Presidential Machiavellianism: Implications for Charismatic Leadership and Rated Performance," *The Leadership Quarterly* 12, 339–363.
- DeNisi, A. S. (2015). "Some Further Thoughts on the Entrepreneurial Personality," *Entrepreneurship Theory and Practice* 39, 997–1003.
- Dutton, K. (2012). *The Wisdom of Psychopaths: What Saints, Spies, and Serial Killers Can Teach Us about Success*. New York: Farrar, Straus and Giroux.
- Ermer, E., and K. A. Kiehl (2010). "Psychopaths Are Impaired in Social Exchange and Precautionary Reasoning," *Psychological Science* 21, 1399–1405.
- Fairlie, R. W. (2004). "Recent Trends in Ethnic and Racial Business Ownership," *Small Business Economics* 23, 203–218.
- Foster, J. D., D. E. Reidy, T. A. Misra, and J. S. Goff (2011). "Narcissism and Stock Market Investing: Correlates and Consequences of Cocksure Investing," *Personality and Individual Differences* 50, 816–821.
- Furter, M. R., J. F. Rauthmann, and P. Sachse (2011). "The Self-Loving Self-Leader: An Examination of the Relationship between Self-Leadership and the Dark Triad," *Social Behavior and Personality* 39, 369–380.
- Goss, D. (2008). "Enterprise Ritual: A Theory of Entrepreneurial Emotion and Exchange," *British Journal of Management* 19, 120–137.
- Gunnthorsdottir, A., K. McCabe, and V. Smith (2002). "Using the Machiavellianism Instrument to Predict Trustworthiness in a Bargaining Game," *Journal of Economic Psychology* 23, 49–66.
- Gupta, V. K., D. B. Turban, and N. M. Bhawe (2008). "The Effect of Gender Stereotype Activation on Entrepreneurial Intentions," *Journal of Applied Psychology* 93, 1053–1061.
- Hair, J., W. Black, B. Babin, and R. Anderson (2010). *Multivariate Data Analysis*, 7th ed. Upper Saddle River, NJ: Prentice-Hall.
- Hare, R. D. (1991). *The Hare Psychopathy Checklist-Revised*. Toronto: Multi-Health Systems.

- Hare, R. D., and C. S. Neumann (2006). "The PCL-R Assessment of Psychopathy: Development, Structural Properties, and New Directions," in *Handbook of Psychopathy*. Ed. C. Patrick. New York: Guilford, 58–88.
- Hays, R. D., T. Hayashi, and A. L. Stewart (1989). "A Five-Item Measure of Socially Desirable Response Set," *Educational and Psychological Measurement* 49, 629–636.
- Hotchkiss, S. (2003). *Why Is It Always about You?: The Seven Deadly Sins of Narcissism*. New York: Free Press.
- Hunt, M. K., D. R. Hopko, R. Bare, C. W. Lejuez, and E. V. Robinson (2005). "Construct Validity of the Balloon Analog Risk Task (BART): Associations with Psychopathy and Impulsivity," *Assessment* 12, 416–428.
- Hmieleski, K. M., and R. A. Baron (2008). "Regulatory Focus and New Venture Performance: A Study of Entrepreneurial Opportunity Exploitation Under Conditions of Risk versus Uncertainty," *Strategic Entrepreneurship Journal* 2(4), 285–299.
- (2009). "Entrepreneurs' Optimism and New Venture Performance: A Social Cognitive Perspective," *Academy of Management Journal* 52, 473–488.
- Hmieleski, K. M., J. C. Carr, and R. A. Baron (2015). "Integrating Discovery and Creation Perspectives of Entrepreneurial Action: The Relative Roles of Founding CEO Human Capital, Social Capital, and Psychological Capital in Contexts of Risk versus Uncertainty," *Strategic Entrepreneurship Journal* 9(4), 289–312.
- Hmieleski, K. M., M. S. Cole, and R. A. Baron (2012). "Shared Authentic Leadership and New Venture Performance," *Journal of Management* 38(5), 1476–1499.
- Hmieleski, K. M., and A. C. Corbett (2006). "Proclivity for Improvisation as a Predictor of Entrepreneurial Intentions," *Journal of Small Business Management* 44(1), 45–63.
- Hmieleski, K. M., A. C. Corbett, and R. A. Baron (2013). "Entrepreneurs' Improvisational Behavior and Firm Performance: A Study of Dispositional and Environmental Moderators," *Strategic Entrepreneurship Journal* 7(2), 138–150.
- Humphrey, R. H. (2013). "The Benefits of Emotional Intelligence and Empathy to Entrepreneurship," *Entrepreneurship Research Journal* 3, 287–294.
- Jonason, P. K., B. L. Koenig, and J. Tost (2010). "Living a Fast Life: The Dark Triad and Life History Theory," *Human Nature* 21, 428–442.
- Jonason, P. K., and L. Krause (2013). "The Emotional Deficits Associated with the Dark Triad Traits: Cognitive Empathy, Affective Empathy, and Alexithymia," *Personality and Individual Differences* 55, 532–537.
- Jonason, P. K., N. P. Li, and E. A. Teicher (2010). "Who Is James Bond? The Dark Triad as an Agentic Social Style," *Individual Differences Research* 8, 111–120.
- Jonason, P. K., N. P. Li, G. D. Webster, and D. P. Schmitt (2009). "The Dark Triad: Facilitating a Short-Term Mating Strategy in Men," *European Journal of Personality* 23, 5–18.
- Jonason, P. K., and J. Tost (2010). "I Just Cannot Control Myself: The Dark Triad and Self-Control," *Personality and Individual Differences* 49(6), 611–615.
- Jonason, P. K., and G. D. Webster (2010). "The Dirty Dozen: A Concise Measure of the Dark Triad," *Psychological Assessment* 22, 420–432.
- Jonason, P. K., G. D. Webster, D. P. Schmitt, N. P. Li, and L. Crysel (2012). "The Antihero in Popular Culture: Life History Theory and the Dark Triad Personality Traits," *Review of General Psychology* 16, 192–199.
- Jones, D. N. (2013). "What's Mine Is Mine and What's Yours Is Mine: The Dark Triad and Gambling with Your Neighbor's Money," *Journal of Research in Personality* 47, 563–571.
- (2014). "Risk in the Face of Retribution: Psychopathic Individuals Persist in Financial Misbehavior Among the Dark Triad," *Personality and Individual Differences* 67, 109–113.
- Jones, D. N., and A. J. Figueredo (2013). "The Core of Darkness: Uncovering the Heart of the Dark Triad," *European Journal of Personality* 27, 521–531.
- Jones, D. N., and D. L. Paulhus (2014). "Introducing the Short Dark Triad (SD3): A Brief Measure of Dark Personality Traits," *Assessment* 21, 28–41.
- Kautonen, T., M. Gelderen, and M. Fink (2015). "Robustness of the Theory of Planned Behavior in Predicting Entrepreneurial Intentions and Actions," *Entrepreneurship Theory and Practice* 39, 655–674.
- Kets de Vries, M. F. R. (1985). "The Dark Side of Entrepreneurship," *Harvard Business Review* 63, 160–167.

- (1996). "The Anatomy of the Entrepreneur: Clinical Observations," *Human Relations* 49, 853–883.
- Klotz, A. C., K. M. Hmieleski, B. H. Bradley, and L. W. Busenitz (2014). "New Venture Teams: A Review of the Literature and Roadmap for Future Research," *Journal of Management* 40, 226–255.
- Klotz, A. C., and D. O. Neubaum (2016). "Research on the Dark Side of Personality Traits in Entrepreneurship: Observations from an Organizational Behavior Perspective," *Entrepreneurship Theory and Practice* 40, 7–17.
- Kristof-Brown, A. L., R. D. Zimmerman, and E. C. Johnson (2005). "Consequences of Individual's Fit at Work: A Meta-analysis of Person-Job, Person-Organization, Person-Group, and Person-Supervisor Fit," *Personnel Psychology* 58, 281–342.
- Krueger, N. F. (1993). "The Impact of Prior Entrepreneurial Exposure on Perceptions of New Venture Feasibility and Desirability," *Entrepreneurship Theory and Practice* 15, 5–21.
- Krueger, N. F., M. D. Jr., Reilly, and A. L. Carsrud (2000). "Competing Models of Entrepreneurial Intentions," *Journal of Business Venturing* 15, 411–432.
- Lance, C. E., and R. J. Vandenberg (2009). *Statistical and Methodological Myths and Urban Legends: Doctrine, Verity, and Fable in the Organizational and Social Sciences*. New York: Routledge.
- Lerner, D. (2016). "Behavioral Disinhibition and Nascent Venturing: Relevance and Initial Effects on Potential Resource Providers," *Journal of Business Venturing* 31, 234–252.
- Lewin, A. Y., and C. U. Stephens (1994). "CEO Attitudes as Determinants of Organization Design: An Integrated Model," *Organization Studies* 15, 183–212.
- Leybman, M. J., D. C. Zuroff, and M. A. Fournier (2011). "A Five-Dimensional Model of Individual Differences in Social Exchange Styles," *Personality and Individual Differences* 51, 940–945.
- Lu, J. F., D. Tjosvold, and K. Shi (2010). "Team Training in China: Testing and Applying the Theory of Cooperation and Competition," *Journal of Applied Social Psychology* 40, 101–134.
- Magister, H. (2013). "The 4 People Who Made Entrepreneurship Sexy," *Forbes*. Retrieved from <http://www.forbes.com/sites/hollymagister/2013/10/01/the-4-people-who-made-entrepreneurship-sexy>
- Malach-Pines, A., H. Levy, A. Utasi, and T. L. Hill (2005). "Entrepreneurs as Cultural Heroes: A Cross-Cultural, Interdisciplinary Perspective," *Journal of Managerial Psychology* 20, 541–555.
- Markman, G. D., and R. A. Baron (2003). "Person-Entrepreneurship Fit: Why Some People Are More Successful as Entrepreneurs than Others," *Human Resource Management Review* 13, 281–301.
- Mathieu, C., R. D. Hare, D. N. Jones, P. Babiak, and C. S. Neumann (2013). "Factor Structure of the B-Scan 360: A Measure of Corporate Psychopathy," *Psychological Assessment* 25, 288–293.
- Mathieu, C., and É. St-Jean (2013). "Entrepreneurial Personality: The Role of Narcissism," *Personality and Individual Differences* 55, 527–531.
- Miller, J. D., L. R. Few, L. A. Seibert, A. Watts, A. Zeichner, and D. R. Lynam (2012). "An Examination of the Dirty Dozen Measure: A Cautionary Tale About the Costs of Brief Measures," *Psychological Assessment* 24, 1048–1053.
- Morgan, J., and D. Sisak (2016). "Aspiring to Succeed: A Model of Entrepreneurship and Fear of Failure," *Journal of Business Venturing* 31, 1–21.
- Mycoskie, B. (2012). *Start Something That Matters*. New York: Random House.
- Neter, J., M. H. Kutner, W. Wasserman, and C. J. Nachtsheim (1996). *Applied Linear Regression Models*. New York: McGraw-Hill/Irwin.
- Nicolaou, N., S. Shane, G. Adi, M. Mangino, and J. Harris (2011). "A Polymorphism Associated with Entrepreneurship: Evidence from Dopamine Receptor Candidate Genes," *Small Business Economics* 36(2), 151–155.
- O'Boyle, E. H., Jr., D. R. Forsyth, G. C. Banks, and M. A. McDaniel (2012). "A Meta-Analysis of the Dark Triad and Work Behavior: A Social Exchange Perspective," *Journal of Applied Psychology* 97, 557–579.
- O'Reilly III., C. A., B. Doerr, D. F. Caldwell, and J. A. Chatman (2014). "Narcissistic CEOs and Executive Compensation," *The Leadership Quarterly* 25(2), 218–231.
- Paulhus, D. L., and K. M. Williams (2002). "The Dark Triad of Personality: Narcissism, Machiavellianism and Psychopathy," *Journal of Research in Personality* 36(6), 556–563.
- Perugini, M., M. Gallucci, F. Presaghi, and A. P. Ercolani (2003). "The Personal Norm of Reciprocity," *European Journal of Personality* 17, 251–283.

- Piperopoulos, P., and D. Dimov (2015). "Burst Bubbles or Build Steam? Entrepreneurship Education, Entrepreneurial Self-Efficacy, and Entrepreneurial Intentions," *Journal of Small Business Management* 53, 970–985.
- Rauthmann, J. F., and G. P. Kolar (2012). "How 'Dark' Are the Dark Triad Traits? Examining the Perceived Darkness of Narcissism, Machiavellianism, and Psychopathy," *Personality and Individual Differences* 53, 884–889.
- Reynolds, P. D., and S. White (1997). *The Entrepreneurial Process: Economic Growth, Men, Women, and Minorities*. Westport, CT: Quorum Books.
- Rindova, V., D. Barry, and D. J. Ketchen (2009). "Entrepreneurship as Emancipation," *Academy of Management Review* 34, 477–491.
- Robinson, J. (2014). "Do You Have What it Takes?," *Entrepreneur* 42, 46–49.
- Roff, D. A. (2001). *Life History Evolution*. Sunderland, MA: Sinauer Associates.
- Schiller, B. R., and P. E. Crewson (1997). "Entrepreneurial Origins: A Longitudinal Inquiry," *Economic Inquiry* 35, 523–531.
- Schjoedt, L., and B. Bird (2014). "Control Variables: Use, Misuse and Recommended Use," in *Handbook of Research Methods and Applications in Entrepreneurship and Small Business*. Eds. M. Brännback and A. L. Carsrud. Northampton, MA: Edward Elgar Publishing, 136–155.
- Shepherd, D. A. (2015). "Party On! A Call for Entrepreneurship Research That Is More Interactive, Activity Based, Cognitively Hot, Compassionate, and Prosocial," *Journal of Business Venturing* 30, 489–507.
- Shepherd, D. A., H. Patzelt, and R. A. Baron (2013). "I Care About Nature But... Disengaging Sustainable Development Values to Exploit Opportunities that Harm the Natural Environment," *Academy of Management Journal* 56, 1251–1273.
- Sherman, R. A., A. J. Figueredo, and D. C. Funder (2013). "The Behavioral Correlates of Overall and Distinctive Life History Strategy," *Journal of Personality and Social Psychology* 105, 873–888.
- Smith, M. B., J. C. Wallace, and P. Jordan (2016). "When the Dark Ones Become Darker: How Promotion Focus Moderates the Effects of the Dark Triad on Supervisor Performance Ratings," *Journal of Organizational Behavior* 37(2), 236–254.
- Spector, P. E., and M. T. Brannick (2011). "Methodological Urban Legends: The Misuse of Statistical Control Variables," *Organizational Research Methods* 14, 287–305.
- Staw, B. M. (1991). "Dressing Up Like an Organization: When Psychological Theories Can Explain Organizational Action," *Journal of Management* 17, 805–819.
- Tabachnick, B. G., and L. S. Fidell (2001). *Using Multivariate Statistics*. Boston: Allyn and Bacon.
- Twenge, J. M., and W. K. Campbell (2010). *The Narcissism Epidemic: Living in the Age of Entitlement*. New York: Simon and Schuster.
- Twenge, J. M., S. Konrath, J. D. Foster, W. K. Campbell, and B. J. Bushman (2008). "Egos Inflating Over Time: A Cross-Temporal Meta-Analysis of the Narcissistic Personality Inventory," *Journal of Personality* 76, 875–902.
- Van Praag, C. M., and P. Versloot (2007). "What Is the Value of Entrepreneurship: A Review of Recent Research," *Small Business Economics* 29(4), 351–382.
- Verheul, I., J. Block, H. Larsson, I. Franken, and A. R. Thurik (2016). "Attention-Deficit/Hyperactivity Symptoms and Self-Employment," *European Journal of Epidemiology* 31(8), 793–801.
- Webb, J. W., L. Tihanyi, R. D. Ireland, and D. G. Sirmon (2009). "You Say Illegal, I Say Legitimate: Entrepreneurship in the Informal Economy," *Academy of Management Review* 34, 492–510.
- Webster, R. L., and H. A. Harmon (2002). "Comparing Levels of Machiavellianism of Today's College Students with College Students of the 1960s," *Teaching Business Ethics* 6, 435–445.
- Wilson, K., S. Demetrio, and S. Porter (2008). "A Pawn by Any Other Name? Social Information Processing as a Function of Psychopathic Traits," *Journal of Research in Personality* 42, 1651–1656.
- Zettler, I., and M. Solga (2013). "Not Enough of a 'Dark' Trait? Linking Machiavellianism to Job Performance," *European Journal of Personality* 27, 545–554.
- Zhao, H., S. E. Seibert, and G. E. Hills (2005). "The Mediating Role of Self-Efficacy in the Development of Entrepreneurial Intentions," *Journal of Applied Psychology* 90, 1265–1272.
- Zhao, H., S. E. Seibert, and G. T. Lumpkin (2010). "The Relationship of Personality to Entrepreneurial Intentions and Performance: A Meta-Analytic Review," *Journal of Management* 36, 381–404.

Appendix

Confirmatory Principal Components Matrix of Unproductive and Productive Entrepreneurial Motives Using Varimax Rotation for Subsamples of Early-Stage Nascent Entrepreneurs^{a,b,c}

Item	Unproductive Entrepreneurial Motives		Productive Entrepreneurial Motives	
	Undergraduates	MBA's	Undergraduates	MBA's
	(n = 281)	(n = 145)	(n = 281)	(n = 145)
<i>If I were to start a new venture, my motivation for the business would include wanting it to:</i>				
1. Achieve financial success, even if it is a little destructive to society	0.79	0.71	-0.20	-0.36
2. Maximize profits, even at the cost of employees' well-being	0.79	0.78	-0.19	-0.23
3. Grow quickly, even if that means sacrificing quality	0.67	0.67	-0.06	-0.02
4. Earn a financial profit at all costs	0.65	0.69	0.02	-0.20
5. Outsource work to reduce costs as much as possible	0.65	0.61	0.07	-0.04
6. Generate value for society	-0.14	-0.28	0.74	0.70
7. Produce products/services that enrich the lives of people	0.03	-0.26	0.76	0.71
8. Develop a culture in which its employees value their work	0.01	-0.17	0.69	0.74
9. Be admired for the value that it adds to the community	-0.04	-0.00	0.76	0.61
10. Attract employees who value the mission of the company as though it were their own	-0.17	-0.11	0.73	0.86

^aIn relation to the items associated with value appropriation, no assertion is being made about profit-driven entrepreneurship being necessarily unproductive. Simply, with value appropriation characterizing unproductive entrepreneurship and motives, seeking to externalize costs appropriates others' value. In relation to the items associated with value creation: no suggestion is made that these are the only possible means to creative value, that the profit-motive cannot be productive, or that for entrepreneurship to be productive it must achieve all these ends. Simply, it is unambiguous that said items indicate value creation rather than appropriation motives. Overall, in terms of the central thesis of the paper, new ventures formed to differing degrees on the basis these two sets of motivations, are apt to generate (or appropriate) value to different degrees.

^bThe question stem was phrased generally such that the items could be applied to all individuals: those having not begun the entrepreneurial process, those considering venturing, and those who have begun the entrepreneurial process (independent of whether they have reached associated operational milestones).

^cThe items representing unproductive entrepreneurial motives (items 1-5) and productive entrepreneurial motives (items 6-10) are respectively indicated by their corresponding bold factor loadings.