

# Overconfidence

## A common psychological attribute of entrepreneurs which leads to firm failure

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Entrepreneurs  
and their  
overconfidence

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### Abstract

**Purpose** – There has been significant growth in entrepreneurship research over the past several decades. Yet with all of the knowledge gained and presumably improved training of would-be entrepreneurs, firm failure rates remain persistently high. It is argued here that the historical and continued research focus on successful entrepreneurs has limited the field. Entrepreneurs are often considered to possess uniquely positive capabilities relative to the general population; this paper explores the possibility that the majority of entrepreneurs suffer from overconfidence and that this leads most entrepreneurs to make “bad bets” that result in underperformance and firm failure.

**Design/methodology/approach** – In this paper, a qualitative review of the literature was performed.

**Findings** – Based on the literature review, three formal propositions are developed. The first two suggest that the majority of entrepreneurs are overconfident in their personal capabilities and the prospects for their new ventures. It is then proposed that this overconfidence leads to errors in judgment that results in financial underperformance and failure found among most new ventures.

**Originality/value** – This paper makes an important contribution to the entrepreneurship literature by arguing that overconfidence negatively impacts pre-founding decision-making such that entrepreneurs pursue flawed opportunities. Studying the issues raised in this paper may spur new lines of research and knowledge that lead to better entrepreneurial outcomes.

**Keywords** Entrepreneurial overconfidence, Firm failure, Cognitions

**Paper type** Conceptual paper

### Introduction

Entrepreneurship and new venture creation shape economies and advance societies (Schumpeter, 1934; Wennekers and Thurik, 1999). Schumpeter (1934) believed there is no more important economic actor than the entrepreneur. This is supported by research that has shown that small businesses owned and operated by entrepreneurs create most net new jobs in the US economy (Birch, 1987; Kirchoff, 1997; Kirchoff and Phillips, 1988; Van Stel and Storey, 2004), and entrepreneurial activity may be responsible for up to half of the US gross domestic product (Cornwall, 2008).

Given their importance to the society, entrepreneurs are often held in high regard and are viewed as economic heroes. Kirzner (1973, 1979) suggested that entrepreneurs have a unique innate ability to recognize economic disequilibria that leads to entrepreneurial opportunities. The view that entrepreneurs were somehow special relative to the general population guided early research (Brockhaus, 1980; Kirzner, 1973; McClelland, 1961, 1965, 1987; Schumpeter, 1934; Sexton, 2001). More specifically, the focus of early entrepreneurship research was on the presumed positive psychological traits entrepreneurs had relative to the general population



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such as the need for achievement (McClelland, 1961, 1987), risk taking propensity (Brockhaus, 1980), perseverance (Markman *et al.*, 2005; McGrath, 1999), locus of control (Brockhaus, 1982; Van de Ven *et al.*, 1984) and alertness to opportunities (Kaish and Gilad, 1991; Kirzner, 1973).

However, decades of study and search for unique psychological traits within entrepreneurs yielded weak (Aldrich and Wiedenmayer, 1993; Baum and Locke, 2004; Gartner, 1989) or at best mixed and inconclusive results (Busenitz and Barney, 1997; Minor and Raju, 2004; Stewart and Roth, 2001). Yet the pursuit and study of individual traits continues (Leutner *et al.*, 2014; Obschonka and Stuetzer, 2017; Zhao *et al.*, 2010), as researchers have tried to apply social cognitive theories to explore whether entrepreneurs use distinctive patterns of thinking in the new venture creation process (Baron and Ward, 2004; Fischer and Reuber, 2011). Similarly, popular entrepreneurship textbooks continue to describe entrepreneurs as having unique skills such as enhanced levels of imagination (Mariotti and Glackin, 2015), cognitive adaptability (Hisrich *et al.*, 2019) and future orientation and tolerance for ambiguity (Scarborough and Cornwall, 2019), even as the fact remains that no unique profile of a successful entrepreneur has emerged.

One of the few certainties among the majority of entrepreneurs is that they are likely to fail (Aldrich, 1999; Cader and Leatherman, 2009; Sarasvathy *et al.*, 2013). Consider that in 2016, 12.3 *m* firms were founded, but there were 10.6 *m* firm deaths (BLS, 2018). Based on US government statistics over the past 25 years, the failure rate of new ventures is 20% within one year and after five years only about half survived (BLS, 2016). Within six years of founding, 60% of firms will close (Scarborough and Cornwall, 2019). Research has also found that surviving firms often do not meet the financial expectations of founding entrepreneurs (Gimeno *et al.*, 1997; Nobel, 2011). Thus, most entrepreneurs and their firms are doomed to failure and/or financial underperformance. Recognizing this, a natural question that researchers should ask is why the majority of entrepreneurs fail? Further, might it be that entrepreneurs have a common psychological attribute that explains the likelihood of failure? This possibility has been largely ignored in the literature.

There are many approaches to studying entrepreneurs but a common thread in the extant body of entrepreneurship research is the assumption that entrepreneurs are special or unique in a positive way. The central thesis of this paper is that the unsuccessful effort to find a common trait among entrepreneurs may be because there is no common positive trait. Rather, there may be a common negative trait that leads most entrepreneurs to fail. Using research and theory from the cognitive and psychological perspectives, as well as empirical results from the entrepreneurship literature, this paper proposes that the majority of entrepreneurs suffer from elevated rates of overconfidence (Adams and Adams, 1961; Busenitz and Barney, 1997; Cassar, 2010; Cooper *et al.*, 1988; Koellinger *et al.*, 2007; Singh, 2008). It is further argued that this is a psychological attribute that leads most entrepreneurs to make “bad bets” that will result in firm failure. More specifically, they are not able to properly assess market opportunities or their abilities to execute on these (flawed) opportunities, which results in firm failure. This possibility is explored in this paper as three formal propositions are developed and discussed, and the paper closes with suggestions for both practice and future research.

### **Self-efficacy and overconfidence**

From a cognitive perspective, it is likely that to be successful, an entrepreneur must have high self-efficacy (Baum *et al.*, 2001; Drnovsek *et al.*, 2010; Segal *et al.*, 2005; Shane *et al.*, 2003). There is support for a positive relationship between self-efficacy and performance outcomes (Bandura, 1997; Gist, 1987; Markman *et al.*, 2002; Stajkovic and Luthans, 1998). It is hard to imagine an entrepreneur investing time and resources into a venture when he/she does not believe it will be successful or does not believe in his/her capability to make it happen. However, there is also a growing body of research within the psychology literature that has found the relationship

between self-efficacy and performance to be more complicated (Schmidt and DeShon, 2010; Vancouver and Purl, 2017), with elevated levels of self-efficacy often having a negative effect on performance (Vancouver and Kendall, 2006; Vancouver and Purl, 2017; Vancouver *et al.*, 2001, 2002; Yeo and Neal, 2006). Schmidt and DeShon (2010) explored the negative relationship and found that task ambiguity played a moderating role. More specifically, when task ambiguity was high, self-efficacy was negatively related to performance; but for the low task ambiguity condition, self-efficacy was positively related to performance (Schmidt and DeShon, 2010). These results have direct implications for entrepreneurship which is often fraught with ambiguity. Based on Schmidt and DeShon's (2010) findings, we would expect firm performance to be negatively related to self-efficacy. In addition, the literature would seem to suggest that there is a point at which elevated levels of self-efficacy cross over to an unhealthy level and negatively affects performance (Vancouver *et al.*, 2001, 2002; Yeo and Neal, 2006). Put another way, elevated self-efficacy morphs into overconfidence.

Fischoff *et al.* (1977) define overconfidence as the tendency to exaggerate the extent of what one knows is correct. Entrepreneurs may be particularly susceptible to the pitfalls of overconfidence. Research has shown that entrepreneurs have a tendency to overestimate their decision-making abilities (Busenitz and Barney, 1997; Koellinger *et al.*, 2007; Trevelyan, 2008, 2011) and exaggerate the strengths of their firms relative to the competition (Moore and Cain, 2007; Simon *et al.*, 2000). Even when they have experienced failures in the past, serial entrepreneurs continue to remain optimistic about new firm success (Ucbasaran *et al.*, 2010). These factors are likely to explain why entrepreneurs have been found to overestimate the chances for firm success (Cassar, 2010; Cooper *et al.*, 1988; Singh, 2008), manage their firms poorly once in the market (Invernizzi *et al.*, 2017) and operate their firms too long when it would be better to leave the market (Chen *et al.*, 2018). For this paper, two types of entrepreneurial overconfidence that impact pre-founding decisions are discussed – overconfidence in one's own abilities and overconfidence in the potential of their firm relative to competition. These are expanded upon in the following sections.

#### *Entrepreneurs' overconfidence in their own skills and abilities*

It is common for individuals to believe successes to be the result of personal abilities, but failures to be caused by external issues such as bad luck (Wortman *et al.*, 1973). Further, people often believe they can control situations that are largely governed by chance (Langer, 1975) and overestimate the probability of favorable outcomes as a result of their actions (Dunning *et al.*, 1989; Weinstein, 1980). There is ample research to suggest that the average person thinks of him/herself as "above average," (Alicke, 1985; Brown, 1986; Dunning *et al.*, 1989; Weinstein, 1980). This is obviously not possible in reality – we cannot all be above average – yet similar findings hold true across all walks of life. More than 40% of engineers believed their work to be among the top 5% of their peer co-workers (Zenger, 1992). In a study of firm managers, only 25% of respondents believed their firm's sales would be below the industry average (Larwood and Whittaker, 1977). Even college professors show their confidence in their abilities as 94% believed themselves to do "above average" work (Cross, 1977).

Although most people believe themselves superior than their peers and have great confidence in their abilities, research has consistently found that one's own assessment of personal knowledge and abilities is only modestly correlated with objective performance (Dunning, 2005; Dunning *et al.*, 1990; Falchikov and Boud, 1989; Harris and Schaubroeck, 1988; Mabe and West, 1982). The latter is particularly true when a task is more difficult to achieve (Plous, 1993; Schmidt and DeShon, 2010; Schraw and Roedel, 1994).

These findings have clear implications for entrepreneurship as new venture creation is a complex, non-linear, open-ended process. Successfully founding a new venture requires knowledge in a number of functional areas such as marketing, finance, accounting and

strategic planning. Given the complexity and the lack of clearly defined tangible measures for success, it is not surprising that entrepreneurs exhibit strong confidence in their skills and abilities (Cooper *et al.*, 1988; Forbes, 2005; Koellinger *et al.*, 2007; Moore and Swift, 2010; Tipu and Arain, 2011), and studies have found entrepreneurs to suffer from overconfidence (Camerer and Lovo, 1999; Robinson and Marino, 2015; Simon and Kim, 2017; Trevelyan, 2008, 2011). This is especially true among nascent entrepreneurs (NEs) – those in the process of founding their firms (Koellinger *et al.*, 2007) – and entrepreneurs who founded their own firms (Forbes, 2005; McCarthy *et al.*, 1993), as opposed to becoming an owner of an established business and operating such ventures (Koellinger *et al.*, 2007). They are also more likely to demonstrate higher levels of overconfidence than managers (Amit *et al.*, 2000; Busenitz and Barney, 1997). It should also be noted that overconfidence is not unique to American entrepreneurs, as studies have found overconfidence to be a common trait among entrepreneurs in many other countries (Koellinger *et al.*, 2007; Tipu and Arain, 2011).

Given the research showing entrepreneurial overconfidence, as well as the need for startup entrepreneurs to remain confident in themselves to overcome the risks and challenges of new venture creation, the following is proposed:

*Proposition 1.* Entrepreneurs who are pursuing new venture creation are overconfident in their professional skills and abilities.

#### *Entrepreneurs' overconfidence in their firms' chances of success*

Given its uncertainty, inherent risks and high probability of failure, entrepreneurship can be likened to gambling. The illusion of control (Langer, 1975) – a belief that one can determine the outcome of an uncertain event – has been used to explain gambling behavior. This has been found to be a major cognitive factor among pathological gamblers (Griffiths, 1990; Rosenthal, 1986). Given the high failure rate of entrepreneurs and the similarities between betting and new venture creation, similar unhealthy cognitive issues may exist for entrepreneurs. While entrepreneurs control some aspects of the new venture creation process, they essentially place a bet on an uncertain future, much of which is beyond their control. Entrepreneurs may feel they have full control over whether their new ventures will be successful, but economic, social and cultural forces are examples of factors beyond their control (Long and McMullan, 1984).

Overconfident entrepreneurs tend to ignore the competition and the strengths of direct competitors (Moore and Cain, 2007), to introduce riskier products with lower success rates (Simon *et al.*, 2000), to under-resource the venture, to engage less in legitimacy gaining activities and to rely less on external networks for relational resources (Hayward *et al.*, 2006), all of which are considered critical for firm survival. These are all issues that are likely a result of not fully understanding the markets they are entering.

Cooper and his associates (1988) reported that over 80% of entrepreneurs in their study estimated their chances for success to be 70% or higher, with almost a third putting their chances at 100%. Singh (2008) found a similar level of confidence among NEs within the Panel Study of Entrepreneurial Dynamics (PSED) dataset (for more information on the PSED, see Reynolds, 2000). On average, the NEs within the PSED placed the odds that their firms would be operating in five years at 81.5%. More than 93% of the NEs in the PSED sample believed that there was a better than 50% chance that their firm would be operating in five years. Adding to the unrealistic nature of these beliefs is the fact that there was no difference between those NEs who had completed a business plan and those who had not; both were equally (over)confident in the viability of their ventures (Singh, 2008). Obviously, these figures do not comport with the true survival rates of new firms. They suggest a certain level of delusion that many entrepreneurs have about their ventures and the chances for success.

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Overconfidence may cause entrepreneurs to fail to appreciate the difficulty of achieving success with their new ventures. This may be due to errors in one's command of the relevant facts of the situation (Busenitz and Barney, 1997), and the tendency to overestimate potential sales and profits, and to cling to those estimates when they fail to materialize (Bazerman, 1990; Bazerman and Samuelson, 1983). This results in the following proposition

*Proposition 2.* Entrepreneurs who are pursuing new venture creation are overconfident in the odds of success for their new ventures.

#### *Entrepreneurs' overconfidence results in firm failure*

Adams and Adams (1961) blame the gap between rosy expectations for future success and actual performance on the overconfidence effect. Overconfidence can also reduce entrepreneurs' perceptions of risk associated with their firms (Kannadhasan *et al.*, 2014). This is problematic because research has shown that individuals who perceive less risk than others are more likely to found entrepreneurial firms (Forlani and Mullins, 2000; Simon *et al.*, 2000). An error in risk assessment – one in which risk levels are not fully appreciated – can lead to poor decision-making which results in the pursuit of a risky venture (Hayward and Hambrick, 1997; Trevelyan, 2008) that may not be worth founding. It has also been associated with rigidity (Audia *et al.*, 2000) which may prevent an entrepreneur from changing course when a change may be warranted in order for a firm to survive and succeed.

Overconfidence and survival are negatively associated (Camerer and Lovallo, 1999). Ultimately, the problem with overconfidence is that it increases the likelihood of error (Dunning *et al.*, 1990). Overconfidence and hubris about one's skills and abilities can lead to errors in judgment (Hayward *et al.*, 2006; Hogarth and Karelaia, 2008; Moore and Cain, 2007) and negatively impact strategic decision-making (Mehrabian and Kolabi, 2012). One study shows that entrepreneurs who are overconfident are more likely to invest financially in their firm's growth, independently of increasing sales, the presence of business partners or their specific skills in the firm's field (McCarthy *et al.*, 1993). Further compounding the problem is that the introduction of a technologically advanced product or one that requires a lot of resources, tends to increase overconfidence in the product's future success (Simon and Shrader, 2012). Overconfidence also seems to be a better predictor of escalation of commitment bias when sales diminish than when they increase (McCarthy *et al.*, 1993). The result of overconfidence is that entrepreneurs who suffer from it are more likely to invest and found firms that have little chance for success. They also often compound the problem by "throwing good money after bad" even as evidence mounts that it is a bad venture idea. At best, their firms are likely to suffer from financial underperformance relative to expectations at founding and at worst may result in outright failure.

Again, since we know that most entrepreneurs fail, and there is a body of research that supports the notion that entrepreneurs tend to be overconfident, it is logical to believe that many entrepreneurs fail because of their overconfidence. Toward this end, entrepreneurs who are overconfident are more likely to underestimate risk (Hayward *et al.*, 2006) and often fail to properly understand the resource requirements for their ventures (Shane and Stuart, 2002). Further, entrepreneurs often fail to recognize that certain tasks are beyond their control (Simon *et al.*, 2000). These conditions make them more prone to failure because of the disconnection between reality and entrepreneurs' understanding of reality.

If most entrepreneurs do indeed suffer from the negative outcomes of overconfidence, and we know that most entrepreneurial ventures will ultimately fail and/or fail to achieve the expected return on investment (BLS, 2016; Gimeno *et al.*, 1997; Nobel, 2011), then it may very well be that overconfidence is a significant factor that leads to firm failure. More formally

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*Proposition 3.* Overconfidence is a psychological attribute found within most entrepreneurs, and it is a significant cause of firm failure.

### Discussion

The stories of successful entrepreneurs who started with little more than their dreams and hard work to beat the odds to become overnight millionaires abound in the popular press. To be sure, successful entrepreneurs are individuals who are often worthy of study, emulation and even adoration. But based on government statistics, the odds of survival and/or significant financial success remain low and successful entrepreneurs represent a relatively small subset of all entrepreneurs. The reality is that new venture formation is fraught with risk and uncertainty, and as discussed earlier, for most entrepreneurs it remains a losing proposition.

Research and the academic literature which focus on entrepreneurship have largely examined successful entrepreneurs. There are a number of reasons for this. First, it is more difficult to collect data from former entrepreneurs who are no longer in business. Contact information for individuals who have exited their firms will mostly likely have changed, and over time, will no longer be available as mail forwarding services come to an end. Second, there may be memory recall issues or potential halo effects which could bias responses about a past entrepreneurial failure (e.g. a failed entrepreneur may blame external factors rather than poor decision-making). These could have an impact that call results into question. Thus, from a practical standpoint, it is far easier and cheaper to find a sample of entrepreneurs who are successfully operating a business and collect cross-sectional questionnaire data. Carrying out a longitudinal study to observe entrepreneurs and record entrepreneurial behaviors and events leading to firm failure is both challenging and more costly. Add the pressures of completing a dissertation or publishing within the years of a tenure clock and the utility of cross-sectional data from entrepreneurs who remain in business becomes even more clear and rational.

The research that has been done on entrepreneurial failure has focused primarily on definitional issues related to failure (Headd, 2003; Kheilil, 2016; McGrath, 1999), differing post-hoc sensemaking and attributions for failure by various stakeholders (Cardon *et al.*, 2011; Mantere *et al.*, 2013; Shepherd and Cardon, 2009) and entrepreneurial learning from past failures which lead to future entrepreneurial success (Cope, 2011; Shepherd, 2003; Ucbasaran *et al.*, 2013; Yamakawa and Cardon, 2015). Effectively, the “failure literature” has had an inherent positive spin – failures are not bad – they are just a step toward future success. But not all failed entrepreneurs go on to second ventures, and there is very little real-time analysis of entrepreneurs as they fail, and this has greatly limited our knowledge of why most entrepreneurial ventures end in failure and/or fail to achieve the expected levels of success (BLS, 2016; Gimeno *et al.*, 1997). This may be a significant contributing factor for there has been no real change in the rate of success or failure of new ventures over the past several decades, even as there has been significant growth in research and academic programs focusing on entrepreneurship. In addition, it may also be the reason that researchers have not been able to identify a unique trait or clear psychological profile of entrepreneurs despite the long-term efforts to do so.

This paper suggests there is a darker side of entrepreneurs that the majority may suffer from an unhealthy level of overconfidence which directly leads to failure of their new ventures. As discussed in this paper, entrepreneurial overconfidence prevents entrepreneurs from properly assessing the weaknesses and threats of their potential new ventures, and the market conditions surrounding their firms, which leads them to pursue flawed opportunities. In addition, they compound the problem by overestimating their own individual skills and abilities to execute on their perceived (flawed) opportunities and/or use inadequate

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implementation strategies. Thus, pre-founding overconfidence ultimately leads to future firm failure. If this is true it opens a new vein of entrepreneurship research that has largely been ignored in the extant literature. More specifically, that there is a common trait among the majority of entrepreneurs – they are gamblers (i.e. irrational risk takers) who might have traits of narcissism. By studying the majority of entrepreneurs, represented by those who have failed, researchers may be able to find the elusive common characteristic or trait of entrepreneurs. If such a common trait was identified, it would yield new insights about entrepreneurs and how best to reduce the incidence of failure.

Recognizing that there is a fine line between being confident and being overconfident, there is no intention to suggest that one needs to be “cured” of the urge to start a business. Rather, many would-be entrepreneurs and stakeholders in their businesses would benefit from being more aware of the pitfalls that can result from the false sense of confidence that many entrepreneurs feel. Obviously, the propositions need to be empirically verified, but if they are supported, then new knowledge and pedagogies can be used to attack the high rate of firm failure. Through screening, education, training, mentoring and even treatment in some cases, those who should not found ventures might be prevented from facing the economic, social and psychological problems that come from failing.

#### *Implications for practice*

Firm founding results in money being spent and flowing into the economy rather than saved and remaining on the sidelines. For this reason, some economists and public policy makers may not be interested in reducing firm failure rates. However, at the individual (micro-economic) level the economic costs of failure can be devastating. The social costs (e.g. loss of friends who invested in the venture, divorce) and psychological costs (e.g. loss of confidence, stress, depression) can also be equally devastating. Some entrepreneurs will move forward with their ventures no matter what anyone says. However, if psychological tests and tools can be developed, then some would-be entrepreneurs who would otherwise pursue poor opportunities with little chance for success may be stopped before they make terrible financial mistakes and suffer the consequences of such mistakes.

Some of these entrepreneurs who pause may decide to abandon their opportunities, while others may take more time, conduct proper research and business planning, seek advice from network contacts, make modifications to their venture ideas and become better prepared to achieve success. The resulting benefit to the society would be a significant reduction in the firm failure rate. An improvement of just a few percentage points in the firm failure rate would result in thousands of entrepreneurs not having to face the difficult challenges following a failed venture, as well as thousands of successful entrepreneurs who would create major societal benefits through increased economic productivity and job creation.

#### *Implications for researchers*

The primary implication of this paper for researchers is that greater focus and study of failed entrepreneurs is needed. Recognizing that the majority of new ventures fail is critical, and for some researchers, counterfactual thinking is required to overcome the prevailing implicit bias toward the socially constructed view that the majority of entrepreneurs have uniquely positive skills and are heroes who should be emulated.

Researchers should also recognize that research which focuses on studying firm failure is challenging. Even if a researcher is able to identify a suitable sample of failed entrepreneurs, such a sample is not well suited for cross-sectional retrospective questions about their entrepreneurial experiences and the causes for their failure post hoc. Memory and recall issues will be prevalent, and it does not seem likely that a failed entrepreneur will admit to having been overconfident about the venture that they failed with. Researchers will have to

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work hard to try to reduce and/or prevent halo effects from influencing data collection. Ideally, researchers would conduct long-term longitudinal analyses of entrepreneurs from the pre-founding time period through firm failure or the first five to ten years of business operations – whichever comes first. Recognizing the significant cost and job-related challenges (it is tough for an untenured faculty member to commit to such a risky and ambitious effort), such an effort could go a long way to understanding entrepreneurship and firm failures.

### *Limitations*

There are several limitations to this paper that should be acknowledged. First, while there is general support for the propositions within the literature, they need to be empirically tested. Government statistics consistently show that most entrepreneurial startups fail, and research has found some support for a link between entrepreneurs and overconfidence; however, there has been no large scale, longitudinal study that provides support for the underlying argument in this paper that entrepreneurial overconfidence is prevalent among a majority of all entrepreneurs who pursue new venture creation and that this is the root cause of firm failure. Further study is needed.

Second, overconfidence may trigger and/or compound other reasons that most new venture startups fail. Undercapitalization, lack of experience, educational attainment, weak social networks and many other factors play a part in firm failure, and this paper does not discuss these factors or how they may play a part relative to entrepreneurial overconfidence. The focus of this paper is solely on overconfidence, and while many entrepreneurs tend to be overconfident and most fail, this could be a spurious relationship that is not causal.

Finally, it is possible that studying failed entrepreneurs may not be as promising or as effective as studying those entrepreneurs who succeed. The argument has been made in this paper that since the majority of entrepreneurs fail and relatively little research has been conducted on entrepreneurs who fail in real time (not post hoc), new insights and knowledge can be gained by studying these entrepreneurs. Without additional study, there is no guarantee that new knowledge would be gained or that it would lead to better outcomes for entrepreneurs in general. This remains to be seen.

### *Future research*

The limitations identified above notwithstanding this paper offer the possibility for new directions of inquiry that have been largely ignored in the literature. In order to fully test the propositions, it is suggested that a multi-year, longitudinal study be conducted on NEs through the formation and founding of their ventures. These NEs could include MBA entrepreneurship students, individuals working with the US Small Business Administration to seek funding or other programs that cater to individuals interested in entrepreneurship. By studying these entrepreneurs pre-founding, psychological analyses and survey items could be used to assess their level of self-efficacy/confidence and those who suffer from overconfidence could be identified. Then, data need to be collected quarterly or every six months as these entrepreneurs found their ventures and operate them over time. By collecting data over three to six years, the impact of overconfidence – if any – could be determined. By including other appropriate variables such as financial capital invested, social network characteristics, industry experience, educational attainment and other control variables such as race, age, gender, industry outlook, economic conditions, etc., the importance of overconfidence could be isolated. If those entrepreneurs who are identified as suffering from overconfidence pre-founding are more likely to fail, there would be support for the propositions in this paper, and it would greatly enhance our knowledge of entrepreneurship.

As far as testing for overconfidence, there are a number of established self-efficacy scales (Anna *et al.*, 2000; DeNoble *et al.*, 1999; Sherer *et al.*, 1982) within the literature that can be used

to capture entrepreneurial confidence and overconfidence. In a laboratory study, [Artinger and Powell \(2012\)](#) were able to study overconfidence as the difference between subjects' decisions when uninformed about their abilities and when partially informed about their abilities to successfully enter markets. More recently, [Invernizzi et al. \(2017\)](#) used financial data and measured overconfidence as the difference between budget estimates and actual earnings and equity. Thus, firm and individual data can be used to measure overconfidence depending on research needs.

If the propositions are supported by empirical research, testing to find the optimal level of confidence should also be conducted. Where the line between healthy confidence and unhealthy overconfidence is unclear but is an important question that may help predict which entrepreneurs will be more successful. This stream of research could result in screening tools and methods for identifying entrepreneurs who are most likely to fail. It would be counter to the traditional goal of research that has sought to identify the traits and processes of successful entrepreneurs.

### Concluding thoughts

One would be hard pressed to identify another field of study or science which largely ignores more than half of the population subjects, and yet, that is where we stand after decades of effort to understand entrepreneurs and entrepreneurial processes. This paper makes an important contribution to the entrepreneurship and psychology literatures by proposing that a greater focus on failed entrepreneurs could yield important new knowledge. To date, there has been little research conducted on unsuccessful entrepreneurs or on possible cognitive defects entrepreneurs may have, relative to the number of studies that have examined successful entrepreneurs and the possibility of unique positive traits they may have. Many people, including many entrepreneurship scholars, hold a very positive view of entrepreneurs. This view has created a research frame that has been dominated by the study of successful entrepreneurs and the search for uniquely positive characteristics of entrepreneurs relative to the general population. Perhaps it is time for a different approach to try to unlock new knowledge which could have the added benefit of reducing the rate of new venture failure. Specifically, it is argued in this paper that entrepreneurial overconfidence is a mental attribute that most entrepreneurs have and that it impacts decision-making prior to firm founding. Further, it has significant negative performance implications that result in firm failure.

The research propositions in this paper should be tested. Much more future research, particularly longitudinal research, is needed which studies the persistently high firm failure rates of entrepreneurs and to develop the theory in this important area. Increasing the study of failed entrepreneurs and increased emphasis on the issues raised in this paper may spur new lines of research and knowledge that lead to better entrepreneurial outcomes.

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