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Rising From the Ashes: Cognitive Determinants of Venture Growth After Entrepreneurial Failure

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How does previous entrepreneurial failure influence future entrepreneurship? More specifically, under what conditions do entrepreneurs who rebound from failure do better in the next round? Drawing on the cognitive literature in attribution and motivation, we focus on entrepreneurs' reaction to failure and the growth of their subsequent ventures. Leveraging a survey database of new-venture founders with failure experiences, we investigate how their internal attribution of the cause of failure, their intrinsic motivation to start up another business after failure, and the extent of their failure experiences impact the growth of their subsequent ventures.

“Failure is only the opportunity to begin again more intelligently.”

—Henry Ford

How often have we heard that failure is a badge of honor for entrepreneurs?¹ That failure is a precursor to success? That failure makes an entrepreneur more bankable because s/he learned on other people's money? But do we really know about the role of failure, and how failure is translated into future entrepreneurial success? How do entrepreneurs' reactions to failure impact the performance of their subsequent ventures? The answer is that at this point we know very little. Focusing on these crucial questions, we hope to shed some light on this important but understudied aspect of entrepreneurship by examining the performance of new ventures started after a prior entrepreneurial failure.

While most entrepreneurs hope to be successful, a majority of their ventures, unfortunately, end in failure (Knott & Posen, 2005; Peng, Yamakawa, & Lee, 2010). Failure is a fundamental element in entrepreneurship (Lee, Peng, & Barney, 2007; Lee, Yamakawa, Peng, & Barney, 2011; McGrath, 1999; Shane, 2001), which to date has been difficult to

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1. In this paper, failure refers to business failure. Failure arises when a business becomes insolvent, is unable to attract new debt/equity capital, and consequently cannot continue to operate under its current ownership (Shepherd, 2003). In other words, failure here involves the notion of an entrepreneur's *full exit* and *full closure* of the venture due to poor performance (Cope, 2011; Lee et al., 2007, 2011).

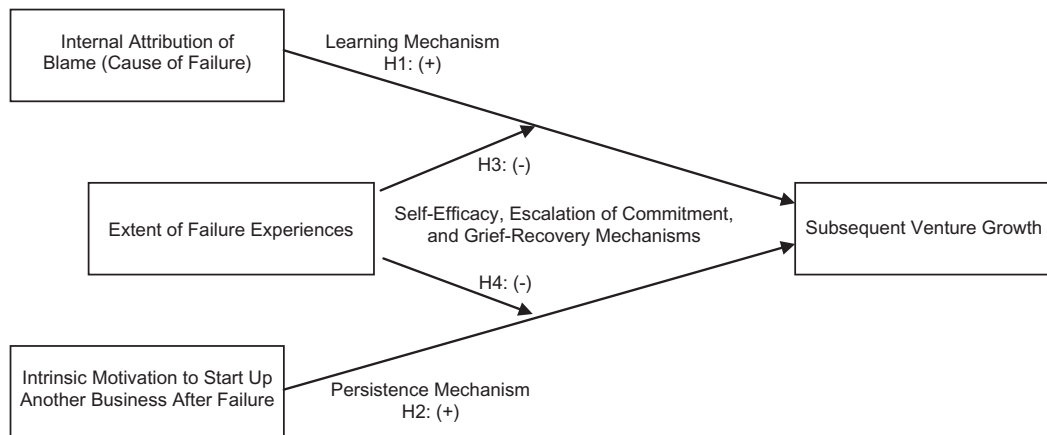
address empirically (Yamakawa, Peng, & Deeds, 2010). Entrepreneurship researchers not only need to study success but also failure, because failure can be a precursor of another emergence (Aldrich, 1999; Learned, 1999; McGrath). It is intriguing that some entrepreneurs—despite having been unsuccessful in previous entrepreneurial efforts—come back from failure, and start up another business (Flores & Blackburn, 2006; Hayward, Shepherd, & Griffin, 2006). However, the impact of prior failure on future entrepreneurship has not received significant attention in the literature (Cardon & McGrath, 1999; Shepherd, 2003). As noted by Shepherd, Covin, and Kuratko (2009), the role of failure experiences on the performance of subsequent projects is uncertain from a theoretical standpoint. How does previous entrepreneurial failure impact future entrepreneurship? Under what conditions do entrepreneurs who rise from the ashes (rebound from previous failures) attain better venture performance in the next round? More specifically, what cognitive determinants impact these entrepreneurs' ability to learn, persist, and attain improved subsequent performance in the form of growth?

To the extent that such research exists, studies have gravitated toward the theme of learning from failure (Cope, 2011; Shepherd, 2003), especially how some second-time (as opposed to first-time) ventures lead to greater success (Kawakami, 2007). Studies have shown how failure can be an important source for the development of knowledge and skills that can be highly useful in subsequent venturing activities (Baron, 2004; McGrath, 1999; Minniti & Bygrave, 2001; Sitkin, 1992). Meanwhile, learning from failure is not automatic (Shepherd). It does not occur in a vacuum as experience of failure does not inevitably lead to future success (Green, Welsh, & Dehler, 2003). Entrepreneurs vary in their ability to maximize their learning from failure (Peng, Lee, & Hong, 2013; Shepherd). However, “few have explored how entrepreneurs or communities make sense of venture failures that do occur and the implications of such sensemaking for continued entrepreneurship” (Cardon, Stevens, & Potter, 2010, p. 79). Endeavoring to start filling in this gap, we focus on entrepreneurs' reaction to failure. Specifically, we investigate (1) how entrepreneurs' attribution of the cause of failure plays a role in learning from the failure, (2) how their aspiration for future start-up plays a role in persisting and overcoming the failure, and (3) how these attributions and motivations impact future entrepreneurship in the form of venture growth. Instead of simply exploring whether entrepreneurs rebound from failure and start another venture or how much they learn, we find it critical to understand the impact of cognitive determinants on subsequent venture growth. That is why we explore venture growth as our dependent variable. Moreover, we investigate (4) how the extent of failure experiences moderates the relationships above to explore the boundary conditions linking entrepreneurs' reaction to failure and subsequent performance.

In sum, building on the entrepreneurial action perspective (Shepherd, Wiklund, & Haynie, 2009), we shed light on the importance of *cognition* as action oriented, embodied, situated, and distributed (Mitchell, Randolph-Seng, & Mitchell, 2011), which can offer rich implications for understanding recovery and learning from failure. Among other cognitive-oriented choices in framing our research on entrepreneurial failure, we use attribution (to explore the mechanism and its implication in terms of learning) and motivation (to explore the mechanism and its implication in terms of persistence) as two key conceptual lenses. In addition, we explore the impact of the extent of failure experiences on the boundary conditions. We posit how entrepreneurs *perceive* and *attribute* the cause of their failures and how they are *motivated* to start up another business after failing impact whether or not and to what extent they achieve success in the next round (Yamakawa et al., 2010). Moreover, we suggest that these relationships are moderated by the extent of failure experiences. Overall, we endeavor to capture the various mechanisms by which entrepreneurs react to failure (e.g., learning, persistence, self-efficacy, escalation

Figure 1

Theoretical Model



of commitment, and grief/emotion) and rise from the ashes of their failed ventures. Our theoretical model is illustrated in Figure 1.

This study extends the literature in at least four ways. First, we combat the *anti-failure bias* in the literature—that is, the tendency to focus on success and to avoid failure as a deserving research topic—as critiqued by Lee et al. (2007, 2011), McGrath (1999), and Peng et al. (2010). After all, the bulk of entrepreneurial experience is failure. Our study builds on the stream of research that focuses on how entrepreneurs make use of this painful but potentially invaluable experience (Shepherd, Patzelt, & Wolfe, 2011). Second, we highlight the importance of cognitive factors (Baron, 2007; Grégoire, Corbett, & McMullen, 2010) in order to better understand the conditions under which entrepreneurs’ experience of failure is associated with the growth of their subsequent ventures. Third, to the best of our knowledge, the secondary survey database of new-venture founders with failure experiences is one of the first databases of its type in the field that allows us to empirically explore questions that have been immune to empirical exploration prior to our work. Last but not least, extending Yamakawa et al. (2010), our sample consists of entrepreneurs in Japan—a country where entrepreneurship is desperately needed. Unfortunately, entrepreneurship research on Japan has been scarce (Bruton & Lau, 2008). Our study captures entrepreneurs’ opportunities to revitalize from prior failure for future entrepreneurship that exist even in the harsh institutional environment that is hostile for individuals to embark on an entrepreneurial career, let alone a second chance of coming back from a failure. The context is particularly suitable for understanding failure recovery. In sum, we articulate the usefulness of cognitive factors that help explain the process linking failure to recovery, learning, persistence, and subsequent venture growth—in a context where entrepreneurship really matters.

Main Hypotheses

Internal Attribution of Blame

According to social psychology theory, attributions are mechanisms through which individuals explain their own behavior, the actions of others, and events in the world

(Martinko, Douglas, & Harvey, 2006; Shaver, Gartner, Crosby, Bakalarova, & Gatewood, 2001). Entrepreneurs' attributions for their failures therefore impact their cognitive, affective, and behavioral responses to failure (Douglas et al., 2008; Weiner & Kukla, 1970); therefore, a better understanding of recovery from failure requires an understanding of attributions of causality (Ford, 1985). Attribution regarding the cause of failure plays an important role in understanding the impact of previous failure on future ventures (Wagner & Gooding, 1997), in particular, the amount of learning from the failure (Sitkin, 1992).

Entrepreneurs employ different causal explanations to account for what went wrong. "Why did this happen?" "What might have been the cause?" These questions signal the beginning of sensemaking—an interpretive process in which entrepreneurs assign meaning to occurrences in conjunction with action (Gioia & Chittipeddi, 1991; Morrison, 2002). Entrepreneurs structure their understanding of events through interpretation and sensemaking, which involves retrospectively linking events to possible causes and attributing the causes (Ford, 1985). There is also heterogeneity in entrepreneurs' ability to maximize the learning from failure (Shepherd, 2003) given their varying levels of reactions over failure (Yanchus, Shaver, Gatewood, & Gartner, 2003). That is why attribution regarding the cause of failure can have critical implications for entrepreneurs' recovering, learning, and achieving success upon previous failures (Shepherd, 2009).

Locus of causality, whether an event is due to reasons internal to the person experiencing the event or to reasons beyond their control is an important aspect of entrepreneurs' attribution of failure (Cardon et al., 2010; Weiner, 1985). Drawing on this framework, we posit that entrepreneurs' learning from failure and their subsequent venture growth will depend on their attribution of the locus of causality for their failures—the level of internal attribution of blame. Indeed, if differences in how entrepreneurs attribute the cause of their failure impact what (or if) they learn from their failure, then the locus of causality may have performance implications for their future entrepreneurial endeavors.

The significance of locus of causality (in terms of learning) is that it implies the source of a cause and implies where to apply corrective action (Ford, 1985). Prior research in psychology has established the link between internal attributions, motivation, and positive learning outcomes (Weissbein, Huang, Ford, & Schmidt, 2011). Internal attribution of failure by entrepreneurs not motivated to try again may lead them to conclude that they are not smart enough or good enough to do it and learn little from failure. In the case of entrepreneurs who start again, internal attribution of blame is more likely to be associated with effective post-failure learning since the actions of entrepreneurs are identified as the cause of failure. This leads them to begin asking questions, such as "Where did I do wrong?" and "What could I have done better?" This places the focus on their entrepreneurial resources and capabilities and the areas in which they need to improve. Baron (2004) introduces the concept of "counterfactual thinking" (the tendency to imagine different outcomes in a given situation than what actually happened) as an important entrepreneurial capability. "What might have been, if I . . . ?" This is highly relevant because such thinking can have a profound effect on entrepreneurs' understanding of cause-and-effect relationships, decision making, and task performance (Markman, Balkin, & Baron, 2002; Roese, 1997).

We argue that higher levels of internal attribution of blame will trigger more counterfactual thinking. Entrepreneurs who blame the cause of their failure on themselves are predisposed to look back upon what they might have done wrong, and consider how they can do better next time—especially if they view the problem as correctable. Engaging in such counterfactual thinking can allow entrepreneurs to consider past failures in the process of constructing more effective strategies that generate positive outcomes in the future (Yamakawa et al., 2010). What entrepreneurs learn about themselves from their

reflection on internal attribution is more readily transferable and is more likely to impact subsequent venture growth—as opposed to some venture-specific knowledge (i.e., important determinant of success) that is likely to be associated with external attribution of failure but less transferable and applicable to the new venture. “Learning from failure occurs when individuals can use the information available about why the business failed to revise their existing knowledge of how to manage their own business effectively—that is, to revise assumptions about the consequences of previous assessments, decisions, actions, and inactions” (Shepherd, 2003, p. 320).

In sum, successful entrepreneurs who recover effectively from failure are those who attribute their failure to internal causes, those who engage in counterfactual thinking, and those who become adept at using such thinking to develop enhanced strategies in their subsequent endeavors (Yamakawa et al., 2010). Entrepreneurs with previous failure experiences, as a result, can profit more from past mistakes (Baron, 2004; Sitkin, 1992).

On the other hand, low levels of (or no) internal attribution of blame may allow failed entrepreneurs to reduce their sense of shame and guilt in order to get back in the game. However, this does not necessarily mean that they learned more and/or will perform better in the next round. Rather, since the cause of failure is not considered the entrepreneurs’ fault, there is little motivation to change their behavior. Most likely, entrepreneurs, in turn, may fail to learn the valuable lessons available from the experience of failure. Ford (1985) also argues that external attributions can lead to negative outcomes in the form of domain abandonment. Many of the specific lessons entrepreneurs have learned from their failure may become no longer applicable since the domain (not their own actions) is identified as the problem. In sum, for entrepreneurs who rebound from failure to start up another business:

Hypothesis 1: Entrepreneurs’ internal attribution of blame for their previous entrepreneurial failure will be positively associated with the growth of their subsequent ventures.

Intrinsic Motivation to Start Up

The founding entrepreneur’s intention determines the direction of a start-up (Bird, 1988; Hsu, Chen, & Cheng, 2013). Intentionality is often associated with entrepreneurial motivations (Katz & Gartner, 1988). How entrepreneurs learn from failure and recover from failure reflect not only on their ability but also on their motivation and vision (Greenberger & Sexton, 1988; Herron & Sapienza, 1992; Lorenzet, Salas, & Tannenbaum, 2005). Entrepreneurs’ visions and motivations can be direct predictors of new venture growth (Baum, Locke, & Smith, 2001; Froese, 2013). Of course, the entrepreneurial process occurs because entrepreneurs actively choose to pursue opportunities (Baron, 2004; Shane, Locke, & Collins, 2003). Building on this line of work, we posit that entrepreneurs’ motivation to start up another business after failure is an integral part of explaining their subsequent venture growth (Yamakawa et al., 2010).

Why do individuals start (and restart) businesses? While scholars have analyzed various motivations (Carter, Gartner, Shaver, & Gatewood, 2003; Gatewood, Shaver, & Gartner, 1995; Shaver et al., 2001), the performance implications for these various reasons have rarely been addressed, let alone with regards to the reason to start up another business after failure. Because responses to failure reflect the cognitive and motivational orientation of decision makers (Bobbitt & Ford, 1980), we argue that the issue of motivation deserves critical attention. Studies have shown that different motivations have different performance effects (e.g., growth) due to their subsequent outcome utility, information

content, and the mechanisms through which they operate (Stajkovic & Luthans, 2001). Fundamentally, intrinsic motivation can be associated with higher levels of task satisfaction and task performance than extrinsic motivation.² However, these claims are not clearly substantiated in the literature, especially in an entrepreneurial context.

Intrinsic motivation—attributing the force of behaviors principally to intrinsic outcomes (e.g., passion for entrepreneurship)—ensures that the entrepreneur persists in the face of difficulties and keeps enthusiasm high during the pursuit of growth (Cardon, Zeitsma, Saporito, Matherne, & Davis, 2005). Entrepreneurs motivated intrinsically are more likely to sacrifice their own personal needs (e.g., delaying gratification) to meet the needs of their ventures, and invest huge amounts of emotion, efforts, and resources to the growth of their ventures. Passionate entrepreneurs may also envision possibilities for the new venture that others do not see (Chen, Yao, & Kotha, 2009). Confident enactment based on intrinsic motivation can create a positive reality (as the confidence persuades resource providers), and as the entrepreneur puts in more effort, they will feel more certain it will further be rewarded (Gartner, Bird, & Starr, 1992). Hard work and the pursuit of success due to intrinsic motivation is also much more enjoyable than slogging away at a job they dislike (Hackman & Oldham, 1976). In sum, intrinsic motivation “concerns active engagement with tasks that people find interesting and that in turn promote growth” (Deci & Ryan, 2000, p. 233).

On the other hand, low levels of (or no) intrinsic motivation—attributing the force of behaviors principally to extrinsic outcomes (e.g., financial/monetary rewards)—can have a negative effect (Daniel & Esser, 1980; Sherman & Smith, 1984). Accordingly, a change in the perceived locus of causality such that when extrinsic financial rewards are made contingent on entrepreneurs’ behavior that are perceived by them, the locus of causality shifts from within the individual to the extrinsic reward resulting in reduced intrinsic motivation. Deci (1976) argues that extrinsic rewards can infect intrinsic motivation by negatively affecting feelings of competence or self-determination. In sum, for entrepreneurs who rebound from failure to start up another business:

Hypothesis 2: Entrepreneurs’ intrinsic motivation to start up another business after entrepreneurial failure will be positively associated with the growth of their subsequent ventures.

Boundary Conditions

Extent of Failure Experiences

What happens when entrepreneurs start accumulating failures? The literature on failure and learning provides mixed results. On the one hand, some studies suggest a positive relationship between the extent of failure experiences and the amount of learning. It is a widely held belief that entrepreneurs profit from their previous failures. As the catalyst for further business development, failure provides critical learning opportunities (Cardon et al., 2010; Green et al., 2003; McGrath, Tsai, Venkataraman, & MacMillan, 1996). Entrepreneurs are able to augment their initial endowment of entrepreneurial capabilities (Baron, 2004; Stam, Audretsch, & Meijaard, 2006) through the process of

2. Within the motivation literature, scholars have long discussed the distinctive characteristics and relationships between intrinsic and extrinsic motivation (Brief & Aldag, 1977; Dyer & Parker, 1975; Kuratko, Hornsby, & Naffziger, 1997; Naffziger, Hornsby, & Kuratko, 1994).

learning from their failure experiences (Bull & Willard, 1993; Hagedoorn, 1996; Minniti & Bygrave, 2001; Shepherd, 2003).

On the other hand, some studies highlight the negative relationship that the greater extent of failure experiences (such as a further increase in the number of failures) may not necessarily be associated with greater learning (Yamakawa et al., 2010). Since each failure takes its toll on the reputation, morale, and sanity of the entrepreneur, the loss of a business can generate a negative emotional response (e.g., grief) that can interfere with the ability to learn from the loss (Shepherd, 2003). Numerous experiences of failure thus may not lead to effective learning. Even a project failure can trigger a strong negative emotional reaction and resistance (Fisher, 2001; Huy, 2002). The accumulated sense of grief may further hinder the process of learning from the experience of failure. In addition, some failed entrepreneurs may simply be too arrogant to learn and to move on (Hayward et al., 2006). In sum, the literature on failure and learning seems to suggest a curvilinear (inverted U-shape) relationship between the extent of failure experiences and subsequent venture growth.

In this section, we investigate the moderating impact of the extent of failure experiences on the main effects proposed in hypotheses 1 and 2. Additional insight into the cognitive antecedents warrants an exploration of the interaction effects that establish the boundary conditions for our model. Specifically, what happens when entrepreneurs start accumulating failures, and the blame for the cause of their failure is primarily internal? What happens when entrepreneurs continue to fail in their intrinsically motivated endeavors?

Moderating Impact of the Extent of Failure on the Relationship Between Internal Attribution of Blame and Subsequent Venture Growth

While internal attribution of blame allows entrepreneurs to learn effectively, the conditions under which they preserve self-esteem are important for future endeavors (Yamakawa et al., 2010). Too many failures and too much internal blame can reduce the sense of self-efficacy—entrepreneurs' conscious beliefs in their own abilities to accomplish desirable task performance (Bandura, 1997; Baron, 2004). Self-efficacy “impacts our perceived control, how much stress, self-blame, and depressions we experience while we cope with taxing circumstances, and the level of accomplishment we realize” (Markman et al., 2002, pp. 151–152). It also influences our course of action, level of effort, and perseverance (Bandura, 1999). Entrepreneurship scholars have further specified the scope of self-efficacy through introducing *entrepreneurial* self-efficacy—defined in terms of the degree to which individuals believe they are capable of performing the roles and tasks associated with pursuing an entrepreneurial career, which includes founding, managing, and growing new ventures (Baum & Locke, 2004; Boyd & Vozikis, 1994; Chen, Greene, & Crick, 1998; Forbes, 2005). Greater entrepreneurial self-efficacy is generally associated with better entrepreneurial outcomes (Bandura, 1997; Lee & Klein, 2002; Prussia & Kinicki, 1996; Tierney & Farmer, 2002).

What drives self-efficacy? Bandura (1997) offers that the level of self-efficacy is influenced by individuals' causal attribution for past experiences. “Appraisal of personal efficacy is enhanced by selective recall of past successes and diminished by recall of failures” (Bandura, 1997, p. 111). Development of self-efficacy thus involves the process by which individuals make causal attribution for their experiences and performance outcomes (Martinko et al., 2006). In other words, how entrepreneurs identify and process the cause of their failure can affect the development of self-efficacy (Gist & Mitchell, 1992). While overcoming a failure allows entrepreneurs to move on and make new

engagements leading to a sense of self-efficacy and resiliency (Benight & Bandura, 2003; Fisher, 2001), too many failures internally blamed can be harmful in reducing the same self-efficacy (Gundlach, Martinko, & Douglas, 2003).

In addition to eroding self-efficacy, too many failures can lead to the accumulation of internal blame and generate negative responses that may hinder the learning process (Shepherd, 2003). Shepherd and Cardon (2009) develop a framework that explains variance in the intensity of the negative emotions and the variance in learning from failures. They argue that failures that significantly thwart an individual's need for competence, autonomy, and relatedness will generate a stronger negative emotional reaction. Accumulation of internal attribution of failure may further relate to depression and self-recrimination (Martinko et al., 2006). Studies also find a vicious cycle where low self-esteem individuals who blame themselves for their failures perpetuate continued failure (Brockner & Guare, 1983).

In sum, while we suggest that internal attribution of the cause of failure is associated with effective learning thereby resulting in subsequent growth, after a certain threshold, we predict that too much failure attributed internally may dampen the effectiveness of learning by decreasing entrepreneurial self-efficacy and leading to the buildup of negative emotions (Shepherd & Cardon, 2009). This leads us to hypothesize that the extent of failures experienced by entrepreneurs—operationalized by the number of failures—will moderate the relationship between their internal attribution of blame for their failures and the growth of their subsequent ventures.

Hypothesis 3: The impact of the extent of failure experiences will moderate the relationship between the level of entrepreneurs' internal attribution of blame for the cause of failure and their subsequent venture growth, such that:

- (1) Ventures by entrepreneurs who have experienced a *low number of failures* will achieve *higher* growth with higher levels of internal attribution.
- (2) Ventures by entrepreneurs who have experienced a *high number of failures* will achieve *lower* growth with higher levels of internal attribution.

Moderating Impact of the Extent of Failure on the Relationship Between Intrinsic Motivation to Start Up Another Business and Subsequent Venture Growth

The evolving vision of the entrepreneur interacts with the knowledge and skills gained through the experience of failure to create value (Penrose, 1959). While entrepreneurs may fail, their intrinsic motivation often in the form of passion for entrepreneurship and perseverance may keep them moving forward (Chen et al., 2009). Persistence in the shape of greater commitment may rise even higher after initial failure. Individuals highly committed to a cause not only prefer activities that are more challenging but also display significant staying power in those pursuits (Bandura, 1997). Winston Churchill, for example, famously said that "Success is the ability to go from failure to failure without losing your enthusiasm" (quoted from Minniti & Bygrave, 2001). Indeed, many serial entrepreneurs repeatedly engage in the founding of multiple unsuccessful ventures, simultaneously, but continue the process until reaching success (Cardon et al., 2010).

However, depending on the context, persistence and perseverance based on intrinsic motivation can be functional or dysfunctional. For example, escalation of commitment can be defined as the tendency to overly commit to a failing course of action (Staw,

1997). Karlsson and colleagues (Karlsson, Garling, & Bonini, 2005; Karlsson, Juliusson, & Garling, 2005) offer that this is often associated with an increasing commitment to the same course of action in a sequence of decisions that result in negative outcomes. Prior research has shown that most entrepreneurs are overly optimistic (Busenitz & Barney, 1997; Forbes, 2005). Optimistic overconfidence allows entrepreneurs to start several businesses, believing that their likelihood of experiencing success—“this time”—is much greater (Hayward et al., 2006), while objective data may suggest otherwise (Baron, 2004). It is possible that repeated failures indicate that an entrepreneur is simply not good at the entrepreneurial game.

More importantly, it is critical to take into account the psychological importance attached to venturing in order to assess the varying degrees of emotional damage when previous ventures fail. Shepherd and Cardon (2009) argue that not all failures generate an equal amount of grief, and that the strength of negative emotional reaction to failure (that interferes with effective learning) depends on the importance of the project to the individual. There are certain circumstances and individual predispositions under which failure is more (or less) likely to generate a sense of grief. Studies have found that the more importance attached to the object lost, the greater the level of grief (Archer, 1999; Jacobs, Mazure, & Prigerson, 2000).

The continuous failure of intrinsically motivated endeavors can generate a sense of grief that interferes with entrepreneurs’ ability to learn from the failure experience (Archer, 1999). The strength of the negative emotional reaction to failure depends on the extent to which the satisfaction of the psychological needs of competence, autonomy, and relatedness—in the form of intrinsic motivation—are thwarted by failure. Indeed, intrinsic motivation involves active commitment with tasks that individuals are interested in and that promotes psychological growth (Deci & Ryan, 2000). Therefore, an increasing number of failures that are intrinsically motivated in nature (which entail greater levels of psychological ownership and personal engagement) can result in a much more negative emotional response that hinders learning, recovering, and starting up another successful business (Shepherd, 2003). In summary, we hypothesize that the extent of failures experienced by entrepreneurs—operationalized by the number of failures—will moderate the relationship between entrepreneurs’ intrinsic motivation to start up another business after failure and subsequent venture growth.

Hypothesis 4: The impact of the extent of failure experiences will moderate the relationship between the level of entrepreneurs’ intrinsic motivation to start up another business after failure and their subsequent venture growth, such that:

- (1) Ventures by entrepreneurs who have experienced a *low number of failures* will achieve *higher* growth with higher levels of intrinsic motivation.
- (2) Ventures by entrepreneurs who have experienced a *high number of failures* will achieve *lower* growth with higher levels of intrinsic motivation.

Methods

Entrepreneurship in Japan

Entrepreneurs strategically respond to institutional incentives and disincentives (Baumol, 1993; Lee et al., 2007, 2011; Peng, Sun, Pinkham, & Chen, 2009; Peng et al., 2010; Yamakawa, Peng, & Deeds, 2008). In a country where the institutional environment is hostile for entrepreneurs, it may be difficult for individuals to embark on an

entrepreneurial career, let alone a second chance of coming back from a failure. “Japanese society rarely lets people bounce back from the perceived shame of failure or bankruptcy” (*Economist*, 2008). A societal perception of failure has critical implications for the level of entrepreneurial activity (Baumol; Peng et al., 2010). Such collective sensemaking also impacts the attributions that entrepreneurs make for failures and their decisions on whether they continue despite hardship (Cardon & McGrath, 1999; Cardon et al., 2010).

In Japan, where tolerance of failure is very low and social stigma of failure is very high, many failed entrepreneurs commit suicide (*Time*, 1999).³ Since 2001, the number of suicides by business executives and self-employed (many are entrepreneurs) has accounted for as much as 10% of the total number of suicides committed every year. Meanwhile even in Japan, serial entrepreneurship does happen (Asaba, 2013). Kawakami (2007) reports that half of the failed entrepreneurs desire to come back, and 9.6% actually do start up another business within 2 years. The opportunities to revitalize from prior failure for future entrepreneurship thus exist even in this harsh climate for entrepreneurial failure. Overall, we find that this context is particularly suitable for understanding failure recovery.

Data⁴

Data were obtained from “The Survey of Entrepreneurs Starting Businesses for the Second Time” (*Nidomeno kaigyouni kansuru anketo*)—a survey of new-venture founders who have business failure experiences—conducted in 2001 by the National Life Finance Corporation (NLFC: *Kokumin seikatsu kinyuu kouko*). Every year, NLFC carries out a large-scale survey covering new ventures in Japan. The aggregated result of the survey is published annually in the “White Paper on Business Start-ups” (*Shinki kaigyō hakusho*). As the largest survey of new ventures found in Japan, a number of advantages associated with using the data have been identified (Harada, 2003; Masuda, 2006; Yamakawa et al., 2010). In 2001, NLFC conducted a survey to follow up on entrepreneurs who have failure experiences.⁵ Our data source is based on this additional survey. Despite missing values, we have a total of 203 new-venture-founder observations. Since the additional survey includes questionnaires about cognitive factors such as attribution of the cause of failure, motivation to start another venture, as well as financial data before and after the failure, the data are ideal to address our research questions. In terms of the timeliness, we find the data still relevant while time has passed since the point of data collection. Despite some profound changes in the socioeconomic environment in which entrepreneurs operate, the phenomenon of interest does not vary with the volatility since the constructs and the psychological mechanisms we explore in this study are not time sensitive.

3. Studies on U.S. entrepreneurs have also reported the link between entrepreneurship and the stigma associated with the threat of failure. Boyd and Gumpert (1983) find that the majority of entrepreneurs reported numerous physical ailments from which they suffered regularly, an increased use of alcohol and tobacco since starting an entrepreneurial career, and a high percentage (12%) of them were undergoing regular psychiatric counseling.

4. Data were provided by the Social Science Japan Data Archive, Information Center for Social Science Research on Japan, Institute of Social Science, The University of Tokyo.

5. Approximately 5,000 surveys were mailed out, and only recipients with experience of failure were asked to complete and return the survey. In other words, NLFC did not know how many of the recipients actually had failure experiences prior to administering the survey. Therefore, the response rate was not certain.

Measures

New Venture Growth.⁶ While many studies use a subjective measure of entrepreneurs' behavioral intentions, we use an objective measure to capture new venture growth as our dependent variable (Yamakawa et al., 2010). It is measured by the growth rate of employees—the ratio of the increased number of employees to the initial number of employees at the time of start-up. Specifically, we measure the increase in size, and divide it by age (in months) to obtain the average growth rate over the venture's life.

Attribution of Blame. Respondents were asked to list up to three major reasons (see Appendix A), as well as to indicate (among the three) the primary reason for their failure. Based on what they identify as the three reasons, we create a percentage variable, “*internal attribution of blame*” (Yamakawa et al., 2010). This variable equals 1 if all three choices are associated with internal attribution of blame (3/3), equals .66 if two of their three choices are associated with internal attribution of blame (2/3), equals .33 if one of their three choices is associated with internal attribution of blame (1/3), and 0 otherwise (0/3).⁷ Essentially, we acknowledge that it is difficult to assess the true cause of failure (Cardon et al., 2010). In addition, individuals are likely to see different aspects of failures (Shaver, 1985), and perceive both internal and external attributes of blame for each and every failure. Therefore, in order to begin our exploration of entrepreneurs' attribution of blame, we use the percentage variable as a proxy to determine the general tendency whether the blame is internalized for subsequent learning (Yamakawa et al.).

Motivation to Start Again. Respondents were asked to list up to two major reasons (see Appendix B), as well as to indicate (among the two) the primary reason for their starting up another venture upon previous failure. Similarly to attribution, we create a variable, “*intrinsic motivation*,” based on what respondents identify as the two reasons (Yamakawa et al., 2010). This variable equals 1 if both their choices are associated with intrinsic motivation (2/2), equals .5 if one of their choices is intrinsic motivation (1/2), and 0 otherwise (0/2).⁸ Brief and Aldag (1977, p. 498) posit that “It is not possible to classify objectively an individual as intrinsically or extrinsically motivated. Rather, it is necessary to assess self-attribution of motivation.” That is what we do, and capture respondents' self-attribution of their motivation to start up another venture (Yamakawa et al.). Just as in coding the attribution of blame, we determine whether or not motivation was primarily intrinsic in nature by weighing what respondents identify as the most critical driver for their entrepreneurial action.

Extent of Failure. We use the number of failures respondents have experienced prior to starting their current venture to measure the *extent of failure experiences*. We use this as

6. Other ways of measuring venture performance were available, such as monthly sales, whether the business is making profit or not (binary variable) at the time of the survey, and time to break even (in months)—closely tied with outcome of learning. Results are qualitatively similar to our main findings.

7. We also create a dummy variable, whereas the variable equals 1 if the respondents' primary reason for failure was internally attributed and 0 otherwise. Results using these alternative measures are qualitatively similar to our main findings.

8. We also create a dummy variable, whereas the variable equals 1 if the respondents' primary reason for starting up another business was based on intrinsic motivation and 0 otherwise (extrinsic motivation). Results are qualitatively similar to our main findings.

a more concrete and measurable proxy to operationalize the construct. In addition, to test for a curvilinear (inverted U-shape) interaction effect, we create another variable in square terms.

Control Variables.⁹ To rule out alternative explanations, we control for four sets of factors. First, by creating dummy variables, we control for *industry effects*.¹⁰ We also control for the learning impact of failure-related experience (Kawakami, 2007; Kim & Miner, 2007) by creating a dummy variable, *domain abandonment*. Second, we control for the nature of failure (Shepherd, Covin, et al., 2009) by coding conditions under which entrepreneurs exited their businesses—*bankruptcy filing* and *voluntary liquidation* (Lee et al., 2007, 2011; Peng et al., 2010). Third, we control for organizational characteristics such as *venture age* and *venture size* (Song, Podoyntsyna, van der Bij, & Halman, 2008). Fourth, we control for individual characteristics such as *gender* and *age at new start-up* (Fischer, Reuber, & Dyke, 1993), *industry experience* to account for knowledge and skills (Minniti & Bygrave, 2001), *start-up financial capital* raised for the venture (Forbes, 2005; Tyebjee & Bruno, 1984), and the *length of time* (in months) from when entrepreneurs exited their prior businesses until they founded their current venture. Finally, by creating a dummy variable based on a survey question regarding their aspiration for growth, we control for entrepreneurs' *orientation for growth* (Chandler & Hanks, 1998).

Models

To test our hypotheses, we use robust regression analysis (Starbuck, 2005; Zaman, Rousseeuw, & Orhan, 2001). This allows us to take into account the pull effect of outliers (e.g., high-growth gazelles), and produces more efficient standard errors than OLS regression. Further, we utilize hierarchical and moderated regression models. By controlling for main effects, hierarchical regression models enable us to examine the added explanatory variance of each independent variable. Control variables, main variables, and interaction terms will be entered in sequence. The technique of moderation is useful for testing interactions among the variables of interest (Dess, Lumpkin, & Covin, 1997). It is considered a relatively conservative method for examining interaction effects since the interaction term is tested for significance after all first-order effects have been entered into the regression equation (Steensma, Marino, Weaver, & Dickson, 2000).

For additional robustness checks, we use Tobit regression (Deephouse, 1996). Past research shows that any censoring problem such as using percentage as a dependent variable would render biased estimates from an OLS-based analysis. While the rate of new venture growth in our sample can take negative terms, having a negative growth rate would suggest a course of failure. Since our data only constitute new ventures that are still alive, we augment our analysis by using the Tobit regression designed to make improved estimates when there are potential censoring issues. Results are qualitatively similar to our main findings.

9. Considering the limited sample size, we strove for a selective number of control variables. We end up with a long list but all considered critical determinants that impact venture growth. Statistical power calculations for our models range from 0.935 to 0.975, which are well above the accepted norm of 0.80.

10. The industry categories are: (1) manufacturing, (2) wholesale, (3) retail, (4) restaurant, (5) construction, (6) transportation, (7) consumer service, (8) governmental service, (9) real estate, (10) real estate, and (11) others.

Findings

The descriptive statistics are presented in Table 1. We have checked all variance-inflation factors (VIFs) and condition indexes in order to capture any possible multicollinearity problems associated with high correlation. The maximum VIF is 1.56, and the mean VIF is 1.18, suggesting little problem with multicollinearity (Kleinbaum, Kupper, & Muller, 1988).

Table 2 depicts the robust regression estimates (hierarchical regression models) on the changes in the rate of new venture growth. As the base model, Model 1 contains only the control variables. Model 2 reports the main effects. Models 3 to 6 show the results of interaction terms—including the interactions using the extent of failure (number of failures) in squared term to test for the curvilinear relationship. Results indicate that among the control variables, domain abandonment is significant in Model 1, age at new start-up is marginally significant in Model 6, and venture size is significant across all models.

In hypothesis 1, we predict that entrepreneurs' internal attribution of blame for their failure is positively associated with the growth of their subsequent ventures. The result is significant ($p < .05$) and positive, thus hypothesis 1 is supported. Similarly in hypothesis 2, we posit that entrepreneurs' intrinsic motivation to start up another business after failure is positively associated with the growth of their subsequent ventures. The result is also significant ($p < .01$) and positive, therefore hypothesis 2 is supported. In hypotheses 3 and 4, we examine the interaction effects: (1) internal attribution of blame *and* the extent of failure (number of previous failures), and (2) intrinsic motivation *and* the extent of failure (number of previous failures). The significant ($p < .05$) and negative result of the interaction term in Model 5 provides support for hypothesis 3, but hypothesis 4 is not supported.

Furthermore, the significance of the moderating influence in Model 5 indicates that the main effect of internal attribution of blame is superseded by the interaction effect. In other words, the result shows that entrepreneurs with higher (as opposed to lower) levels of internal attribution of failure will achieve *higher* growth when they have experienced a low number of failures (extent of failure: low), but when the number of failures is high (extent of failure: high), this relationship is reversed—entrepreneurs with higher (as opposed to lower) levels of internal attribution of failure will achieve *lower* growth. The significant result of the interaction effect is presented in Figure 2.

Moreover, the significant result of the interaction term between internal attribution and extent of failure (number of failures) in squared term in Model 6 suggests a nonlinear relationship. To account for the possible curvilinear relationship, we have conducted a piecewise analysis. The result illustrates an inverted U-shaped curvilinear relationship involving internal attribution, extent of failure (number of failures), and subsequent organizational growth. The result of the piecewise analysis is presented in Figure 3.

Discussion

Contributions

Theoretical and qualitative research, venture investor sentiment, and common wisdom all posit the potential for a positive impact of prior failures on the entrepreneurs' subsequent ventures. But prior to our research, there is very little solid empirical evidence to support these claims. In fact, this study refutes the simple idea that failure is always beneficial—specifically that every entrepreneur learns from failure and that every second venture benefits from the lessons learned during an entrepreneur's prior failure. In our analysis of over 200 ventures founded by entrepreneurs who have rebounded from at least

Table 1
Descriptive Statistics and Pearson Correlation Coefficients

Variable	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1. New venture growth	.92	3.04	-90	33															
2. Domain abandonment	.51	.50	0	1	.19***														
3. Voluntary liquidation	.81	.39	0	1	-.09	-.05													
4. Bankruptcy filing	.01	.11	0	1	-.02	.11*	-.23***												
5. Venture age	29.81	18.64	0	60	.06	-.01	.02	-.02											
6. Venture size	6.47	11.74	0	113	.36***	.15**	-.03	-.02	-.02										
7. Gender	.86	.34	0	1	.08	.11*	.03	.05	.06	.13*									
8. Age at new start-up	48.72	8.77	24	75	-.15**	.07	-.03	.06	-.07	-.13*	-.05								
9. Industry experience	102.63	91.25	4	419	-.03	.03	.10	-.04	.03	-.03	.08	.44***							
10. Start-up financial capital	141.16	177.32	5	1410	-.05	-.10	-.18***	.25***	-.05	.00	-.02	-.08	-.11*						
11. Time to reentry	96.50	81.59	0	398	-.08	.09	.00	.00	.02	-.06	-.02	-.08	-.12*	-.10					
12. Growth orientation	.61	.49	0	1	.02	.01	.01	.01	.01	-.00	-.01	-.02	.06	-.03	-.06				
13. Extent of failure	1.21	.57	1	5	.06	.02	.03	-.04	-.02	.05	-.05	.06	-.06	.05	-.02	.03			
14. Internal attribution of blame	.13	.28	0	1	.26***	.18***	-.11*	.04	.00	.09	.02	-.06	-.13*	-.03	-.01	.03	-.01		
15. Intrinsic motivation to start up again	.18	.29	0	1	.21***	.01	-.16**	-.07	.08	.03	-.12**	-.02	-.12*	.01	-.04	.09	.26***	.01	

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 2

Robust Regression Hierarchical Estimates of New Venture Growth

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Hypothesis Testing
<i>Control variables</i>							
Domain abandonment	.87** (.42)	.65 (.41)	.73 (.41)	.64 (.42)	.74 (.42)	.51 (.40)	
Voluntary liquidation	-.77 (.53)	-.37 (.52)	-.31 (.51)	-.38 (.52)	-.30 (.52)	-.44 (.50)	
Bankruptcy filing	-.50 (1.80)	.01 (1.75)	-.15 (1.73)	.02 (1.75)	-.15 (1.74)	.15 (1.67)	
Venture age	.01 (.01)	.004 (.01)	-.01 (.01)	.004 (.01)	.01 (.01)	-.003 (.01)	
Venture size	.09*** (.02)	.08*** (.02)	.08*** (.02)	.08*** (.02)	.08*** (.02)	.08*** (.02)	
Gender	.22 (.61)	.39 (.59)	.36 (.59)	.41 (.60)	.36 (.59)	.45 (.57)	
Age at new start-up	-.03 (.03)	-.04 (.03)	-.04 (.03)	-.04 (.03)	-.04 (.03)	-.05* (.03)	
Industry experience	-.0003 (.003)	.002 (.003)	-.002 (.003)	.002 (.003)	.002 (.003)	.002 (.003)	
Start-up financial capital	-.0001 (.0001)	-.0001 (.0001)	-.0001 (.0001)	-.0001 (.0001)	-.0001 (.0001)	-.0001 (.0001)	
Time to reentry	-.002 (.003)	-.001 (.003)	-.001 (.003)	-.001 (.003)	-.001 (.003)	-.001 (.003)	
Growth orientation	.11 (.42)	-.08 (.40)	-.06 (.40)	-.08 (.41)	-.06 (.40)	-.10 (.39)	
<i>Main variables</i>							
Internal attribution of blame		2.33*** (.72)	3.49*** (.73)	2.34*** (.72)	3.49*** (.74)	1.68** (.78)	H1: Supported
Intrinsic motivation to start up again		2.09*** (.73)	2.14*** (.73)	2.37*** (.73)	2.04*** (.73)	2.31*** (.87)	H2: Supported
Extent of failure		.02 (.34)	.21 (.35)	.09 (.52)	.18 (.52)	.38 (2.69)	
Extent of failure ²						-.34 (4.83)	
<i>Interaction variables</i>							
Internal attribution × extent of failure			-2.45*** (1.22)	-.18 (1.02)	-2.46** (1.23)		H3: Supported
Intrinsic motivation × extent of failure					-.06 (1.02)		H4: Not Supported
Internal attribution × extent of failure ²							H3: Supported
Intrinsic motivation × extent of failure ²							H4: Not Supported
Constant	2.14	1.48	1.00	1.39	1.03	1.35	
R-squared	.19	.27	.28	.27	.28	.29	
N	203	203	203	203	203	203	

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Note: Industry dummies are included in the model but not listed here. Robust standard errors are in parentheses.

Figure 2

Interaction Effect: Internal Attribution of Blame and Extent of Failure

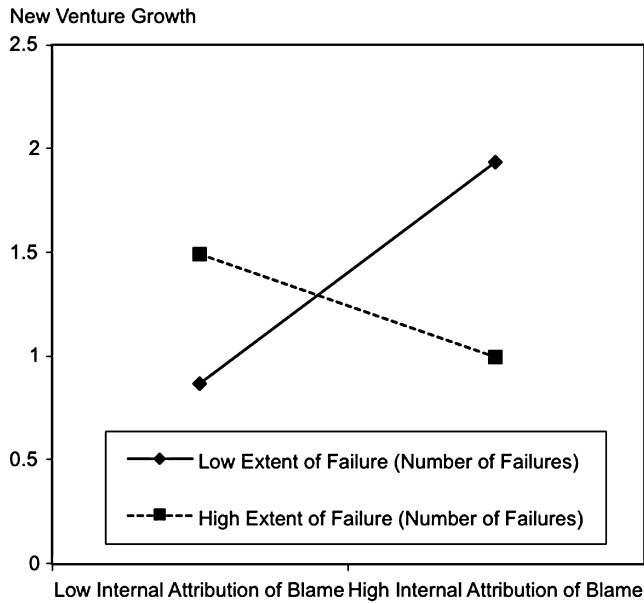
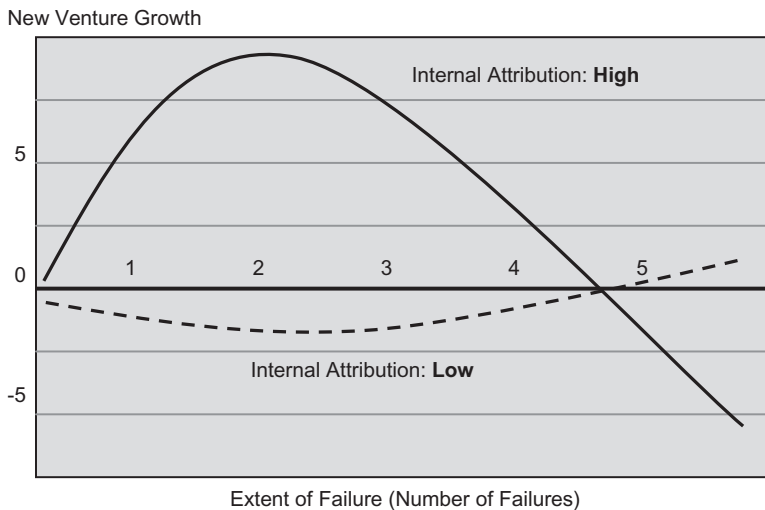


Figure 3

Piecewise Analysis: Internal Attribution of Blame and Extent of Failure



one prior failure, there is *no* relationship between the number of prior failures and new venture performance. More importantly, however, we find that the relationship between prior failure and future entrepreneurship is much more nuanced and is heavily influenced by the *cognition* of the entrepreneur.

Overall, at least three contributions emerge from our study. First, by drawing on insights from the cognitive literature in attribution and motivation, we are able to better understand the link between entrepreneurs' reaction to failure and the performance of their subsequent venture. Building on Yamakawa et al. (2010), we extend the stream of research related to the cognitive components predictive of responses to failure in an entrepreneurial context. In response to the call for a better understanding of the entrepreneurial process—especially a more nuanced view of failure and its implications (Cardon et al., 2010; Shepherd et al., 2011)—we show that integrating cognitive perspectives in the domain of entrepreneurship can be valuable (Baron, 2007; Grégoire et al., 2010). Entrepreneurship arises ultimately from the actions of particular entrepreneurs, and consequently, understanding why and how these individuals act as they do is critical to understanding the entrepreneurial process (Baron, 2004; Shane et al., 2003). Among possible cognitive-oriented perspectives in framing our research on entrepreneurial failure, our choice of attribution (to explore the implication in terms of learning) and motivation (to explore the implications of persistence) help highlight the importance of cognition as action oriented, embodied, situated, and distributed (Mitchell et al., 2011), which can offer rich implications for understanding recovery, learning from failure, persistence, and doing better the next round. Our findings on the impact of cognitive characteristics of failed entrepreneurs on the growth of their next venture also provide valuable insights into serial entrepreneurship (Ucbasaran, Westhead, & Wright, 2006).

Second, our study makes contributions to both the attribution and motivation literatures. We suggest that attribution influences the effectiveness of the learning process (Yamakawa et al., 2010). Specifically, internal attribution, under certain conditions, benefits learning (by signaling the importance of the cause of an event), thereby enables greater performance in the form of subsequent venture growth. We also find that the function of internal attribution of blame is contingent on the extent of failure experiences operationalized by the number of failures (see Figures 2 and 3). In other words, internal attribution of blame can either be positively or negatively associated with subsequent venture growth depending on the extent of failure experiences. On the one hand, the results of our analysis support the view that internal attribution of the cause of failure can lead to greater performance (in the form of venture growth) when entrepreneurs have experienced low number of failures. On the other hand, internal attribution of blame can lead to negative outcomes when entrepreneurs suffer from a high number of failure experiences. Our piecewise analysis also reveals that internal attribution of the cause of failure is associated with subsequent venture growth up until a threshold point. Beyond the threshold point, internal attribution will not guarantee subsequent venture growth. Overall, we have identified the role attribution plays behind entrepreneurial activity—and an important boundary condition linking attribution and subsequent venture performance.

When it comes to motivation to start up another business after previous failure, we find that intrinsic motivation indeed leads to greater sustainability and organizational growth. Specifically, entrepreneurs who recover and rebound from failure and are able to start up another venture achieve growth in their subsequent entrepreneurial endeavor when they are driven by intrinsic motivation. While we predicted that there is a threshold beyond which too many failures of intrinsically motivated endeavors dampen the effectiveness of learning (or simply the trap of escalation of commitment to a failing course of action), our findings demonstrate that accumulative intrinsic motivation can result in a strong form of persistence that drives growth. Most importantly, the entire premise of the study has involved the various mechanisms by which entrepreneurs react to failure and the implications for future growth. We argue that it is critical to combine the effects of the

attribution of blame, the motivation to start up again, and the extent of failure experiences in order to better understand the mechanism of recovery from failure that affects the outcome of future entrepreneurship.

Third, we empirically substantiate our arguments through a survey-based database of new venture founders with failure experiences—to the best of our knowledge, one of the very first such endeavors in the literature (Yamakawa et al., 2010). Rarely do we see empirical research with actual entrepreneurs who have multiple failure experiences. The nature of the survey has allowed us to explore the conditions under which entrepreneurs experience failures, and how their reaction to failure can be applied to predicting their learning and their subsequent venture performance. Our focus on hard outcomes (e.g., new venture growth) as opposed to behavioral intentions (e.g., whether they intend to start another venture after the first failure) also adds to our understanding of successful entrepreneurship. We find support not only for predicting the main effects but also for the interaction effects (Figures 2 and 3) that reveal interesting boundary conditions linking previous entrepreneurial failure and subsequent venture performance.

Overall, our study extends the entrepreneurship literature, both theoretically and empirically, on the phenomenon of entrepreneurial failure—*ex ante* and *ex post*. Even within the “greater risk” and “hostile” environment to entrepreneurship in Japan, people start businesses, fail, but some (but not all) recover under certain conditions we reveal in this study. These entrepreneurs then learn from failure, persist, then go on to start another venture, and ultimately attain success and growth. Given the paucity of entrepreneurship research on Japan (Bruton & Lau, 2008), our efforts have also expanded the global scope of entrepreneurship research on failure and recovery (Yamakawa et al., 2010). The more we understand about the relationship between failure and subsequent venture success, the better we will understand entrepreneurship, not just in Japan, but in other parts of the world where tolerance of failure is low (Peng et al., 2013).

Practical Implications

On the surface, failure is something to be avoided. We do find that simply a greater amount of failure experiences may not necessarily entail positive influence on subsequent venture performance. In fact, an increasing number of failures can be especially harmful for those who internally attribute their blame, since the larger number of failures will eventually become a burden reducing one’s self-efficacy. No matter how entrepreneurs intrinsically motivate themselves to embark upon an entrepreneurial career upon multiple failures, this will not insure greater success in the future.

However, our results indicate that revitalizing from failure is indeed possible. In a best-case scenario, our findings offer direct practical implications. Specifically, entrepreneurs should (1) avoid blaming it all on the external environment or luck, and instead find some aspect of the failure to attribute internally to facilitate effective learning from failure; (2) be motivated intrinsically to facilitate the performance of the next start-up; and (3) try not to fail too many times (perhaps reconsider your career option when it happens to be the case). While most entrepreneurs are likely to experience some failure, we find that it is their post-failure attitude that may make or break their subsequent endeavors.

Limitations and Future Research Directions

Among limitations, first, our cross-sectional design limits causal inferences. Despite the diagrammed arrows in Figure 1, the directionality as well as the appropriate time lag

of the effects remains uncertain. Since the growth of a new venture is an outcome of a process that occurs over time, a longitudinal approach will be more desirable for future research. A dynamic view will also allow us to examine the possible shift in one's attribution and motivation from one failure to another that is not captured in our current study. Exploring the optimal balance (e.g., ambidexterity) between internal/external attribution and intrinsic/extrinsic motivation as well as examining the shift in their composition and the path from one failure to another seems to promise interesting findings. The concept of socially situated cognition would suggest that context matters. The effects of failure, attribution, and motivation may vary depending on the business environment.

Second, our data came from a specific institutional context—Japan. While controlling for the context is a strength of our design, it unfortunately limits the generalizability of our results (Asaba, 2013; Nakamura, 2011). One can argue that different cultural norms and inner mechanisms exist that may affect the prospects of entrepreneurs' subsequent endeavors and their future performance in different ways. There may be issues with social desirability bias in respondents' stated causes for failure given the conservative context. For example, cultural value in Japan may encourage more external attribution (e.g., "face-saving") and more continuation despite hardship. Attribution patterns must be evaluated in conjunction with social context because cultural values and norms affect the way individuals make attributions (Hess, Chang, & McDevitt, 1987; Holloway, 1988). Differences in attribution styles may exist between individualist and collectivist cultures where individuals in the collectivist cultures (e.g., Asia, Latin America, Africa) tend to be less susceptible to the fundamental attribution error and to the self-serving bias than those in the individualist cultures (e.g., North America, Western Europe) (Li, 2012; Mao, Peng, & Wong, 2012). These findings suggest that our study may represent a fewer-errors, less-biased effect of cognitive factors. Henrich, Heine, and Norenzayan (2010a, 2010b) have also argued that the Japanese context is perhaps more generalizable than others such as the Western context, because Western societies are among the least representative populations concerning fundamental aspects of psychology, motivation, and behaviors. Either way, future research will benefit from embracing a comparative or cross-country study design drawing on different cultural contexts (Li).

Third, in the absence of rich qualitative information, our study has all the usual trappings associated with survey research. Future researchers are certainly encouraged to qualitatively explore the complex issues associated with entrepreneurs' recovery from failure. Our sample relies on self-reported data from entrepreneurs who failed but started and survived in their new ventures. In other words, our sample only included previously failed entrepreneurs who managed to come back, and whose new businesses were still surviving at the time of our study. As a result our arguments may not be generalizable to those who exited and never came back to the entrepreneurial game, or those who reentered but failed and disappeared prior to the administration of the survey. No comparison is thus made between previously failed entrepreneurs who chose not to start another firm with those who did. We understand how invaluable it would be if we could test our arguments on "all" entrepreneurs who failed. Our current sample may pose such potential problems as selection (success) bias, common method bias, and recall bias (attribution bias) by respondents. We also recognize the weakness of our measurement (e.g., attribution, motivation)—constrained as a single-item measure. Future research would benefit from utilizing a more robust scale measure of variables derived from the psychology literature, experimental designs, and factor analytical techniques. Furthermore, in terms of the "extent of failure" construct, a measurement of the magnitude of failure instead of a simple number of failures may have captured additional insights to our arguments. Again,

a qualitative analysis as an additional element of study such as interviewing Japanese entrepreneurs could have uncovered invaluable insights and provided robustness to both design and findings of our study.

We also recognize that entrepreneurial success or failure may not entirely depend on the founders/owners, and that other members of the top management team as well as the larger institutional environment may have played a role (Hessels & Parker, 2013; Zhu, Wittmann, & Peng, 2012). This is something that our data do not allow us to explore, but remains an interesting future direction to probe. Finally, it could be fascinating to study the relationship between causal attributions and “actual” causes and their impact on outcomes. It is not easy to find studies of this nature (Cardon et al., 2010). Perhaps the challenge is that it is hard to assess what actual causes of a failure are since every description or explanation for a failure is a perception or attribution that someone makes, and “truth” is often in the eye of the perceiver (Weick, 1995)—exactly what we have explored in this study.

Conclusion

As a first step toward a better understanding of how entrepreneurs’ failure experiences play a key role in determining the growth of their subsequent entrepreneurial endeavors, this study has barely scratched the surface of this entrepreneurial mechanism. Our analysis supports the view that under certain conditions, previous failures stimulate future entrepreneurial growth. Given the pervasiveness of business failures and the paucity of scholarly research on the link between earlier failure and subsequent entrepreneurial endeavors, it seems imperative that our attention be devoted to this challenging, yet relevant and important research agenda of how entrepreneurs rise from the ashes to attain future entrepreneurial success.

Appendix A

Coding for Internal Attribution

Category	Answer Choices
<u>Internal attribution</u> of blame (for the cause of failure)	Lack of product development/marketing skills Lack of strategy, strategic inferiority Financial constraints due to lack of planning Lack of management know-how Lack of entrepreneurial skills
<u>External attribution</u> of blame (for the cause of failure)	Due to intense competition, reduction in market size Change in consumer needs, due to customers Shift in business customs Lack of talent, human resources Environmental uncertainty
<u>Other</u>	Due to personal health conditions Family circumstances/constraints Other

Appendix B

Coding for Intrinsic Motivation

Category	Answer Choices
<u>Intrinsic motivation</u> to start up another business after previous failure	For autonomy/control Passion for entrepreneurship To obtain more freedom, independence Dream of becoming an entrepreneur
<u>Extrinsic motivation</u> to start up another business after previous failure	For better allocation of profit For greater financial reward, higher income To commercialize an idea for social recognition Pursuit of higher status/fame
<u>Other</u>	No other alternatives Unfairness of other jobs Other

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