OVERCONFIDENCE AND EFFORT IN NEW VENTURE DEVELOPMENT

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ABSTRACT

Confidence can have both positive and negative effects on entrepreneurial activities. On the one hand confidence boosts motivation and leads entrepreneurs to exert more effort on key tasks. But on the other hand overconfidence can induce decision-making short cuts and a tendency to reduce effort on key tasks. I propose that the positive effect of confidence on effort is most likely to occur on action tasks, and the negative effect of overconfidence on effort is most likely to occur on judgment tasks. These propositions are tested with a small sample of active entrepreneurs, however a positive effect of confidence on entrepreneurial tasks (entrepreneurial self-efficacy) is found for both action and judgment tasks. This suggests that the motivational impact of confidence outweighs the decision-making bias of overconfidence.

INTRODUCTION

Research on entrepreneurship recognizes the importance of the individual in the success of new ventures (Shane & Venkataraman, 2000). Much attention has been paid to the cognitions of entrepreneurs (Mitchell et al., 2007) and we now understand much more about the impact of different thought processes on decisions and action. Entrepreneurial self-efficacy has emerged as an important construct in understanding entrepreneurial action. Many theoretical and empirical studies support the key role played by self-efficacy in shaping entrepreneurial intentions to start a new venture (DeNoble, Jung, & Ehrlich, 1999; Kickul & Krueger, 2004; Zhao, Seibert, & Hills, 2005) and persisting in actions to establish and develop the venture (Boyd & Vozikis, 1994; Markman, Baron, & Balkin, 2005).

However, related research on overconfidence suggests that excess levels of confidence can create self perceptions of invulnerability (Camerer & Lovallo, 1999; Hayward & Hambrick, 1997; Malmendier & Tate, 2005) which result in lower levels of effort on some tasks. Hubris theorists argue that when entrepreneurs and managers are overconfident they suffer from biases in making decisions about which courses of action to follow (Hayward, Shepherd, & Griffin, 2006). These cognitive biases lead to short cuts in decision-making processes and result in starving the venture of resources. The entrepreneur’s script, conscious or otherwise, goes something like “I know I will succeed at this so I don’t need to spend too much time or money on it”.

This apparent contradiction between the positive impact of self-efficacy and the negative impact of overconfidence has led me to ask, “When is confidence beneficial for entrepreneurs and when is it harmful?” Others have highlighted the dual and opposing impact of a positive attitude on activity. Russo and Schoemaker (1992) identify the pitfalls of overconfidence, for example, insufficient analysis of the market for a new product resulting in overinvestment in production capacity. They also recognize that confidence has a motivating influence on others. Busenitz & Barney (1997) describe the errors in judgment which can occur when the overconfidence bias is present, but also recognize that strong confidence protects entrepreneurs from analysis paralysis, stimulating action “before it makes complete sense (p15)”, where others would shy away from taking such risks. My aim in this paper is to explore in more detail the situations in which high
levels of confidence have a positive effect on effort, and the situations in which high levels of confidence have a negative effect on effort. I introduce distinctions between different types of task as the moderating variable between confidence and effort. Propositions about the moderating impact of task type on the confidence – effort relationship are developed and tested using a small sample of entrepreneurs engaged in developing live business ventures.

HYPOTHESIS DEVELOPMENT

Individual Differences and Effort

Decisions relating to how much effort to exert on particular tasks are at least partially determined by individual characteristics. Expectancy theorists argue that individuals evaluate the expected outcomes of engaging in different activities and compare this to the likelihood of effort resulting in the achievement of these outcomes (Olson, Roese, & Zanna, 1996; Vroom, 1964). These evaluations, or cognitions, lead the actor to a decision about how much effort to expend. On any given task two individuals may come to a different decision about how much effort to expend either because they place different value on the outcomes of achieving the task, or because they believe they are more or less likely to achieve those outcomes. These different evaluations, or cognitions, are a result of different experiences, values, personalities and biological attributes (Bandura, 1986). This is of relevance here because the entrepreneur’s confidence in his or her ability to complete a particular task will influence his or her evaluations and expectancies relating to the successful completion of the task. These evaluations and expectancies therefore determine effort on that task. For example, if I am very confident that I can negotiate a good deal with a supplier I expect to get positive outcomes from my negotiation, and therefore I am motivated to engage in, and persist at, the negotiation. On the other hand, if I am not confident that I have the skills to recruit the right people to work with me on the venture I might expect that my efforts will not achieve positive outcomes and I will direct my attention elsewhere (in the vain hope that somebody else can recruit for me, or that the right people will find their way to me).

Individual differences also influence decisions about where to expend effort via intentions. Intentions are determined by core self-regulatory processes such as the appraisal of task outcomes, emotions regarding the task (eg anxiety, hope, dissatisfaction, joy), and reactions to those emotions, eg fight vs flight (Bagozzi, 1992). Ajzen’s Theory of Planned Behaviour tells us that from these intentions one develops the desire either to act, or not to act (Ajzen, 1985). In addition, we evaluate whether we have the means to perform tasks, and if we believe that we do, we develop intentions to implement the task (Bagozzi, Dholakia, & Basuroy, 2003) and commit to expending effort towards those tasks. There is clear evidence that cognitive processes affect the intention to engage in particular tasks (deVries, Dijkstra, & Kuhlman, 1988; Kok, DeVries, Mudde, & Strecher, 1991), and also that intention to engage in a task predicts effort on the task (Ajzen & Madden, 1986; Tubbs & Ekeberg, 1991).

Research on individual differences seeks to explain the impact of the vast range of individual differences (personality, attitudes, cognitions) on behaviour. My question here is about the impact of confidence on effort, and to explore this I have selected two individual difference variables that relate to confidence, namely optimism and self-efficacy. Confidence, as a construct itself, is not clearly defined nor “embedded in a theoretical system” (Bandura, 1997, p. 382). So while I use the term to describe the overall topic of interest here because of its colloquial face validity I use more theoretically grounded and empirically testable constructs in the analysis. I examine the relationship between these two individual differences (optimism and self-efficacy) and effort, in different task conditions. I have chosen one more stable individual trait (optimism), and one
cognitive process (self-efficacy) that varies according to the context (one can have high self efficacy for some tasks, but low self efficacy for others). The choice of one stable and one variable individual difference was deliberate in order to see if the moderating impact of task type was different in these two conditions.

**Optimism**

Optimists are defined as “people who tend to hold positive expectancies for their future” (Scheier, Carver, & Bridges, 1994). Optimism has positive outcomes on health, stress and coping (Brissette, Scheier, & Carver, 2002), and in an organizational context it also promotes persistence (Litt, Tennen, Affleck, & Klock, 1992; Seligman & Schulman, 1986), commitment (McColl-Kennedy & Anderson, 2005), and an ability to influence others to commit to ventures (Ottesen & Gronhaug, 2005). Given these outcomes, we would expect this disposition to enable entrepreneurs to downplay uncertainty or setback and focus on what is good in a situation. In fact, when entrepreneurs evaluate situations they tend to magnify the strengths and opportunities and relegate the importance of weaknesses and threats (Krueger & Dickson, 1994; Palich & Bagby, 1995). This “rose tinted view” of the world gives entrepreneurs the confidence to enter into markets that have yet to be proven and it allows them to continue with a course of action when faced with setbacks. One key outcome of optimism in this setting, then, is to devote more effort to tasks than would otherwise be expended if the entrepreneur was less optimistic. In McMullen & Shepherd’s discussion of entrepreneurial action, I propose that optimism is one of the driving forces behind the willingness to bear perceived uncertainty (McMullen & Shepherd, 2006).

Yet, there is evidence to suggest that actors can suffer from too much optimism, or overoptimism. Overoptimistic managers tend to make judgments about whether to enter into ventures by relying on assessments of their own ability rather than, or at the expense of, making assessments of the external market and environmental conditions. Camerer & Lovallo (1999) call this taking an “inside view” and suggest failure rates would be lower if more actors put effort into taking an “outside view”. Moore, Oesch & Zietsma (2007) also argue that entrepreneurs often “fail to fully acknowledge the risks associated with venturing” (p442) and focus on only a few key aspects of the venture, rather than spending time and effort considering the full range. This reliance on too few decision rules (Kahneman & Lovallo, 1993) is a result of overconfidence and over-reliance on the self in making judgments about actions.

So optimism can have both positive and negative effects on effort in new venture development tasks. I seek to explain this by introducing task type as a moderating variable below.

**Self Efficacy**

Self-efficacy is the certainty one has in one’s ability to attain outcomes on a given task. There are a wide range of theoretical and empirical studies to support the direct and positive association between self-efficacy and effort on task accomplishment based on the seminal contributions of Bandura (Bandura & Cervone, 1983; Boyd & Vozikis, 1994; Krueger, 1993; Whyte, Saks, & Hook, 1997). Yet, like optimism, there is some evidence to suggest that extremely high levels of self-efficacy can lead to decreased effort because of the reliance on positive judgments of ability. For example, Krueger & Dickson (1994) find that high levels of perceived self-efficacy induce decision-making short cuts in evaluating opportunities and lead to actors committing to ventures without fully assessing weaknesses and threats. As well as lack of rational analysis, extreme certainty in one’s ability to succeed can hinder one’s willingness to spend time on monitoring assumptions and designing adjustments to plans (Simon & Houghton, 2003), and adapting planned
courses of action (Audia, Locke, & Smith, 2000). Zacharakis & Shepherd (2001) also find that overconfident venture capitalists “may not fully consider all relevant information, nor search for additional information to improve their decision” (p312).

The overconfidence bias is particularly salient for entrepreneurs since they have been found to suffer from overconfidence more than general managers (Busenitz & Barney, 1997; Forbes, 2005). Also, new venture creation has the contextual characteristics of uncertainty, complexity and unfamiliarity all of which can increase the overconfidence bias (Baron, 1998; Hayward et al., 2006; Klayman, Soll, Gonzalez-Vallejo, & Barlas, 1999; Lichtenstein & Fischoff, 1977).

Therefore, as with optimism, I propose that self-efficacy can induce both greater and lesser effort on task achievement. To explore this apparent paradox I now turn to a discussion of the type of tasks that entrepreneurs engage in. Here, I develop propositions that, if supported, explain the situations in which overconfidence (i.e. high optimism and high self-efficacy) stimulates extra effort, and the situations in which overconfidence reduces effort.

**Task Type**

Social cognitive theory tells us that behaviour is jointly determined by individual characteristics, such as cognitive process, and characteristics of the environment (Bandura, 1986; Wood & Bandura, 1989). There is an interaction effect such that individual cognition influences behaviour differently according to the environment. For example, when engaging in a simple task (task being a characteristic of the environment) the individual may evaluate his or her ability to complete the task positively (cognition) and therefore exert much effort (behaviour) in order to attain task achievement. But when engaging in a complex task the individual may believe he or she is unable to complete it and decide to exert effort elsewhere. Task characteristics have provided a useful way of unpacking the task environment to better understand phenomenon elsewhere (Hmieleski & Baron, 2006; Shanteau, 1992; Spence & Brucks, 1997), and this approach is extended here.

The range of tasks that entrepreneurs have to engage in when establishing and growing a venture is large (Carter, Gartner, & Reynolds, 1996; Van de Ven, Pooley, Garud, & Venkataraman, 1999). McMullen & Shepherd (2006) define entrepreneurship as taking action as a result of a decision about the opportunity for profit. Therefore it involves both judgment and action. Judgment tasks relate not only to evaluating business opportunities, but also to evaluating growth opportunities, deciding on sources of finance, identifying customers to target, developing strategies for responding to competitors, selecting key personnel, and designing organizational systems and processes. Action tasks include gathering information on business opportunities (although evaluating that information is a judgment task), presenting the business to potential investors or partners, selling the product or service to customers, negotiating with investors, suppliers and customers, communicating business objectives to staff and implementing organizational systems and processes. Of course, the distinction between judgment and action is often blurred, and some activities involve both judgment and action. For example, in developing an intention to become an entrepreneur, as well as actively looking for business opportunities the entrepreneur also makes a judgment about which career path (being employed or starting one’s own business) will achieve desired outcomes. However, for the sake of simplicity I categorise new venture development tasks into these two task types.

Applying social cognitive theory we should expect effort to vary as tasks change, since different tasks represent different environments and interact differently with cognition to...
determine behaviour. Action tasks invoke an implementation mindset while judgment tasks invoke a deliberative mindset (Gollwitzer, Heckhausen, & Steller, 1990) and these different mindsets have been shown to induce different ways of thinking and regulating behaviour (Taylor & Gollwitzer, 1995).

The overconfidence argument, as described above, refers to the way managers and entrepreneurs make decisions. That is, an overly optimistic view of the outcomes of one’s abilities results in decision-making short cuts and a failure to consider information and complete detailed analysis. So we can expect the overconfidence bias to have impact when engaged in judgment tasks. When we are confident we experience positive affect, and positive affect induces less thorough judgment of situations (Seo, Barrett, & Bartunek, 2004). Gatewood, Shaver, Powers et al. (2002) tested for the impact of self perception of ability on effort, using a sample of undergraduate students who completed a simulated activity involving decisions about whether a fictional venture was viable or not. In this judgment task the authors found that self-perception of ability did not induce extra effort. Shepherd, Zacharakis, & Baron (2003) also used a judgment task to explore the role of experience on decision-making processes. They found that more experienced Venture Capitalists used less thorough and rigorous routines, i.e. they expended less effort on the task, than did less experienced VCs. Since experience is a key determinant of self-efficacy (Bandura, 1997) it follows that experienced VCs who exerted less effort would also have had high self-efficacy for the task. Therefore, when the task under consideration is a judgment task I propose that high levels of optimism and self-efficacy will result in decreased effort on the task.

**Hypothesis 1:** Optimism is associated with lower levels of effort on judgment tasks.

**Hypothesis 2:** Self-efficacy is associated with lower levels of effort on judgment tasks.

On the other hand, a direct, positive relationship between self-efficacy and effort is predicted in tasks involving action where things need to be done and behaviours need to be enacted in order to achieve a goal. Goal setting theory tells us that we put effort into tasks when we are clear what the tasks are and confident that we can achieve them (Locke & Latham, 2002), and these cognitive processes are central in motivating action (Frese, 2007). For entrepreneurs, action tasks might be finding information on an industry or market, preparing and giving a presentation to potential business partners, or communicating a business process. Prior empirical studies that have examined the link between self-efficacy and effort have often used action tasks. For example, Bandura & Cervone (1983) and Weinberg, Gould & Jackson, (1979) used a physical exercise activity, and Bandura & Shunk (1981) used a maths task. Similarly, studies supporting the positive impact of optimism on effort have also used action oriented tasks, for example sales activity (Schulman, 1999; Seligman & Schulman, 1986) and manufacturing operations (Green, Medlin, & Whitten, 2004). When engaged in action tasks we tend to be in a positive mood and use positive thinking (Taylor & Gollwitzer, 1995) which, combined with high confidence, induces greater effort. Therefore, when the task under consideration is an action task I propose that high levels of optimism and self-efficacy will result in increased effort on the task.

**Hypothesis 3:** Optimism is associated with higher levels of effort on action tasks.

**Hypothesis 4:** Self-efficacy is associated with higher levels of effort on action tasks.
METHOD

Active entrepreneurs, defined as firm founders currently engaged in developing and running a new venture, were sampled using an online survey. Two Australian entrepreneurial networking organizations distributed an invitation to their members asking for participation. Participants worked in a wide range of industries. A total of 564 entrepreneurs were invited to participate, and 44 usable responses were received (response rate of 7.8%). Researchers should expect lower response rates when using online surveys compared to paper surveys (Klassen & Jacobs, 2001), and also when surveys are not endorsed by an employing organization. While a higher response rate would be desirable it may not be feasible with a population as time poor as entrepreneurs.

Table 1 summarizes the measurement variables, number of items, format of questions, construct reliability (coefficient $\alpha$) and simple descriptives. Entrepreneurial Self-Efficacy (ESE) was measured using deNoble, Jung & Ehrlich’s (1999) scale which asks respondents to rate their perceived ability to perform various new venture development tasks such as seeing new market opportunities, creating products that fulfill customers needs, forming partner relationships, working under stress, recruiting and training key employees. Optimism was measured using the Life Orientation Test (Scheier et al., 1994) which asks respondents to describe their outlook on life, for example “In uncertain times, I expect the best”, and “Overall, I expect more good things to happen to me than bad”. Responses for both ESE and Optimism were given using a 5-point Likert scale.

Effort was measured by asking respondents to rate their level of effort across a range of tasks, for example networking activities, analyzing data on the opportunity, identifying risks, negotiating funding, recording ideas, and implementing internal organizational systems. Responses were given using a 5-point Likert scale. 28 items measuring effort were used and these were grouped into the two categories of action tasks (22 items) and judgment tasks (6 items) using factor analysis and according to face validity. The two groupings were also tested for internal scale reliability (both had high $\alpha$ coefficients – see Table 1).

Demographic and other descriptive items were included in order to incorporate control variables in the analysis. Experience was measured by the number of prior ventures founded. Venture age was measured by the number of years since the business was established. Gender was coded 1=Male and 2=Female and there were 15 women (34%) in the sample. Age was measured by asking respondents to indicate their age in categories (1=Under 25, 2=25-30, 3=35-40 and so on). Firm size is the number of full time employees. Equity is the percentage of equity entrepreneurs held in their businesses. Qualifications is a report of the highest educational qualification obtained by the respondent (1=no qualifications, 2=High school, 3=Vocational qualification, 4=Bachelors, 5=Masters, 6=Doctorate). Performance is a categorical self report measure of the rate of return on assets (1=less than 0%, 2=0-5%, 3=5-10% and so on).

Missing values analysis revealed that, across all items, 95% or more of responses were complete. For those items where there were higher numbers of missing values (the maximum missing values was 15%) this was mostly because respondents chose the “N/A” response which is a valid, rather than missing, response because respondents can’t answer the question. Therefore no missing values were replaced or cases deleted.

The correlation matrix for predictor and dependent variables is shown in Table 2 and reveals correlations between predictors of 0.024 which supports their independence. multicollinearity
was also examined using VIF in the final regression and no VIF statistic of greater than 1.1 was observed which further supports variable independence.

RESULTS

Prior to running regression analysis, standardized scores for effort items were created (the correlation between the standardized and unstandardized scores was 0.892). Standardized scores were used to create the scales for effort on action, and effort on judgment tasks. Control variables were entered into the regression models, but all except two had $\beta$ coefficients of less than 0.1 and $p > 0.05$, and so were dropped from the final model. Performance as measured by return on assets was included in the final regression model for effort on action tasks ($t=-2.565$). Both performance ($t=1.231$) and age ($t=1.417$) were included in the final regression model for effort on judgment tasks (see Table 3). The distribution of residuals in both regressions were unimodal but symmetrical, and no more than 2 standardized residuals were outside the range $-2$ to 2 and none outside the range $-3$ to 3. Therefore the regression model can be used with confidence.

In neither regression model did optimism have a statistically significant association with effort, therefore neither Hypotheses 1 nor 3 were supported. The regression model for judgment tasks shows a positive and direct relationship between self-efficacy and effort ($t=3.683$). This does not support Hypothesis 2 in which a negative relationship is predicted. However, the regression model for action tasks shows a direct and positive relationship between ESE and effort ($t=2.919$), thereby supporting Hypothesis 4. The only control variable to have a statistically significant impact was Performance as measured by return on assets, which had a negative association with effort on action tasks.

DISCUSSION

In this study, the impact of two individual differences, optimism and self-efficacy, on effort in new venture development tasks has been explored. Many prior studies have examined the impact of individual differences, in particular self-efficacy, on the single outcome of intention to become an entrepreneur (Krueger, Reilly, & Carsrud, 2000; Wilson, Kickul, & Marlino, 2007; Zhao et al., 2005). Thus the empirical validity of the individual differences — intentions part of Boyd & Vozikis’s (1994) model of entrepreneurship is now well established. Theoretical propositions have been made about the final part of Boyd & Vozikis’s model, i.e. the direct impact of individual differences and self-efficacy on effort and action. This is a more complex phenomenon to study because there are multiple outcomes, i.e. multiple activities that need to be engaged in, in order to launch and develop a venture (Shaver & Scott, 1991). Little empirical work has been done to test these propositions, and what empirical work there is has tested them using university students rather than entrepreneurs (e.g., DeNoble et al., 1999; Gatewood et al., 2002). The entrepreneurship literature has been criticized for providing inadequate accounts of business owners’ actual experiences and challenges (Jennings & McDougald, 2007). This study therefore makes a unique contribution in collecting data from actual entrepreneurs engaged in live ventures in order to test for some of the predictors of entrepreneurial effort on new venture development tasks.

The main finding from this analysis is that self-efficacy has a positive impact on effort, regardless of the type of task. Based on research in the decision-making literature I proposed that effort on judgment tasks would be lower when entrepreneurs are too confident. The argument is that overconfidence causes entrepreneurs to skip rational and time-consuming decision-making activities on judgment tasks. Instead they rely on their perceived high judgment ability and go with their initial, or intuitive, response to a decision. However, this is not the case here. In fact,
high confidence generally results in extra (rather than less) effort, on both action and judgment tasks. These results suggest that the motivational force that comes with high self-efficacy is greater than the overconfidence bias.

Decision-making scholars generally argue that the overconfidence bias is to be avoided where possible (Hayward et al., 2006; Moore et al., 2007; Russo & Schoemaker, 1992), and therefore these results have a positive message. That message is that while overconfidence may sometimes influence task activity, in general the motivational effects of confidence on effort outweigh the negative impact of cognitive biases on effort in judgment tasks. In this setting, effort and persistence are important when initiative and commitment are required to overcome the uncertainty of survival (Busenitz & Barney, 1997; Russo & Schoemaker, 1992). So, confidence should, where possible be supported and exploited. However, it has also been argued that heuristics have a place in entrepreneurship since they allow entrepreneurs to make decisions quickly when time is often short and opportunities need to be realized before competitors enter or markets are established by others (Busenitz & Barney, 1997; Tversky & Kahneman, 1974). In dynamic industry environments, decision speed is a strong predictor of firm performance (Baum & Wally, 2003). Relying on heuristics involves spending less time evaluating options and using rational decision-making routines, i.e. it involves less effort. So there is a cautionary message here too, that high confidence may over-ride entrepreneurs’ tendency to use heuristics when they are in fact often appropriate.

A secondary finding is that optimism does not predict effort on either type of task. Optimism is a trait which is more stable over time and across situations (Lounsbury, Steel, Loveland, & Gibson, 2004) than self-efficacy, which is a situation specific cognitive process (Gist & Mitchell, 1992). While theory might suggest that optimists have a more positive attitude towards work and subsequently put in more effort, there are other mediators governing effort on new venture development tasks which will weaken the direct relationship between optimism and effort. Personality traits have an indirect effect on new business creation activities, direct effects that are more specific / proximal to entrepreneurial effort are, for example, self-efficacy and goals (Rauch & Fresse, 2007). This finding is consistent with current work on entrepreneurial personality, which finds some support for the existence of entrepreneurial traits, but weak measures of association between personality variables and measures of entrepreneurial success (Zhao & Seibert, 2006).

LIMITATIONS AND FUTURE RESEARCH

While the sample is a strength of this study because it includes real entrepreneurs engaged in live business ventures, it is also a limitation because of the small sample size. Gaining access to entrepreneurs is notoriously difficult because they are difficult to identify, to contact and they are very time poor (Shook, Priem, & McGee, 2003). This may explain why many researchers choose to sample students instead. Also, this study is cross sectional, taking data from one point in time and therefore no causality can be proven. The author is extending this study over a three year period, in order to collect longitudinal data with which causality can more reliably be tested.

Because entrepreneurs are, in general, more overconfident than general managers (Busenitz & Barney, 1997; Forbes, 2005) the variability in one independent variable, self-efficacy, is restricted. This may have reduced the predictive validity of the model tested here. In future research, collecting data from a wider group of managers with greater variation in self-efficacy would be beneficial, in order to test for the interactions between self-efficacy, effort and task type. The downside of this is that the context within which managers work would be different. The context for entrepreneurs is characterized by uncertainty, dynamism and risk (Baron, 1998; Klayman et
al., 1999) and broadening the study to include general managers may result in different interactions between key constructs because of the different context.

The measures of overconfidence used in this study are strength of optimism and self-efficacy. Elsewhere, researchers have used measures of general overconfidence, i.e. comparing accuracy of general knowledge tests with subjects’ confidence in their answers. Overconfidence occurs when subjects are more confident than they are accurate. These tests do not take into account the particular context and tasks engaged in, which is a fundamental property of self-efficacy (Gist & Mitchell, 1992). The measure of entrepreneurial self-efficacy used here is more context specific, however it doesn’t capture the sense in which entrepreneurs are over confident, rather just that they are highly confident. This may explain why no overconfidence effect was found here. Future research could develop a measure of overconfidence in entrepreneurship, which assesses the entrepreneur’s confidence that is over and above a healthy level of confidence. For example, one measure might be a comparison of the entrepreneur’s confidence (self-efficacy) with their effort, i.e. overconfidence = self-efficacy – effort. In this formulation, high levels of overconfidence occur when entrepreneurs are very confident but do not put much effort into tasks (because they believe their abilities, rather than effort, will get results). Low overconfidence occurs when confidence matches effort, or under-confidence occurs when confidence is low and much effort is expended in order to compensate for perceived low ability. To develop such a scale would require measuring both self-efficacy and effort on the same task, and would also require standardizing the scores because of different measurement instruments. One drawback of this is that standardization will reduce variance in the variables that we want maximum variation in.

Future research could also explore the relationship between confidence and effort over the life-cycle of a venture, or over the career of an entrepreneur. Experienced entrepreneurs have been found to use richer mental models of the business which are concerned with factors and conditions influencing actual business survival (Baron & Ensley, 2006). It may be that the overconfidence bias is stronger in novice entrepreneurs who make judgments more by assessing their own skills, rather than evaluating the needs and characteristics of the business. Baron (2004) suggests that successful entrepreneurs are those who know when to switch from quick and effortless heuristic processing to effortful and systematic thought processing. Greater experience may enable entrepreneurs to know when and where to exert effort. However, evidence also suggests that as experience increases there is a greater likelihood of the overconfidence bias because decision makers get stuck in familiar routines and don’t search for new or disconfirming information (Shepherd et al., 2003). The decision-making literature may once again be helpful in explaining this apparent contradiction. It has been argued that expertise interacts with task characteristics to determine success in making judgments, for example experts have better outcomes when the task is moderately well structured, but not when the task is well structured (Spence & Brucks, 1997). Applying this thinking here, it may be that experts put more effort into moderately well structured tasks, but on well structured tasks where they have confidence in their abilities, they search for less information and use decision-making routines less often, that is they exert less effort. More research is therefore needed to better understand the overconfidence – effort link as entrepreneurial experience increases.

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REFERENCES


**Table 1: Measure Descriptives**

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<th>Reliability α</th>
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**Table 2: Correlation Analyses**

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<td>.515**</td>
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*p<0.05  **p<0.01

**Table 3: Regression Analyses: Action and Judgment Tasks**

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<th>Effort on judgment tasks</th>
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<td>ESE</td>
<td>.392**</td>
<td>.497**</td>
</tr>
<tr>
<td>Performance (roa)</td>
<td>-.352*</td>
<td>-.172</td>
</tr>
<tr>
<td>Age</td>
<td>-</td>
<td>-.195</td>
</tr>
<tr>
<td>R²</td>
<td>.281</td>
<td>.292</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.227</td>
<td>.220</td>
</tr>
<tr>
<td>F</td>
<td>5.202**</td>
<td>4.029**</td>
</tr>
</tbody>
</table>

*The table reports standardized coefficients  
*p<0.05  **p<0.01