

**THE EFFECT OF ANXIETY AND CONFIDENCE ON RISKY DECISION MAKING
IN COMPETITIVE AND NON-COMPETITIVE DECISION SETTINGS**

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Abstract

In this paper we demonstrate that individual personality attributes, particularly anxiety and confidence, have an impact on decision risk behavior, a topic that has rarely been explored within the risk literature despite its theoretical and practical importance. We also show that decision context moderates the relationship between individual personality attributes and risk taking. Confidence positively affects risk taking behavior in both non-competitive and competitive contexts, while anxiety negatively affects risk taking in a non-competitive context but positively affects risk taking behavior in a competitive context. The findings point to the importance of both individual and situational factors in affecting risk taking behavior.

Risk-related decision-making is at the center of strategic processes within organizations. However, we know little about how the attributes of individual decision makers influence their risk taking propensities and behavior. The influence of actual decision makers in strategic decision-making has largely been overlooked to date, with the bulk of the strategic risk research focusing on organizational level relationships. The emphasis with this research has been on investigating the influence of organizational factors, such as prior performance (e.g., Fiegenbaum & Thomas, 1988;), slack resources (e.g., Bromiley, 1991; Jemison, 1987), and the strategic positioning of a firm (e.g., Cool & Schendel, 1988), on firm risk taking.

When individual decisions and decision makers have been brought into the examination of risk-related decision making, researchers have almost always taken a behavioral approach. Thus, the focus has tended to be less on individual differences than on how certain organizational-situational factors, such as organizational pressures and incentives have a general effect on individual decision-making (e.g., McNamara & Bromiley, 1997; Sanders, 2001; Sutcliffe & McNamara, 2001). The few studies that have examined the role of individual attributes on strategic risk taking suggest that these attributes may play a significant role in understanding these decision processes. For example, Wiersema and Bantel (1992) found that demographic attributes on a top management team influence the risk taking by the firm. Similarly, MacCrimmon and Wehrung (1986) demonstrated that the demographics and experiences of individual managers influenced their choices in risk-based scenario decisions.

We can contrast this limited set of research on the role of individual attributes on organizational risk-based decision making with the substantial literature linking individual personality attributes with a range of organizationally related constructs. Research has linked personality attributes with, among other constructs, job performance (Barrick & Mount, 1991), learning orientation (Colquitt & Simmering, 1998), motivation (Lee, Sheldon, & Turban, 2003), leadership style (Judge & Bono, 2000), voice and cooperative behavior (LePine & Van Dyne, 2001), and escalation of commitment (Moon, 2001; Moon, Hollenbeck, Humphrey, and Maue,

2003). This body of literature indicates that personality attributes can influence the perceptions and actions of individuals.

Thus, we see an opportunity to extend our understanding of risk-related decision making by investigating the effect of individual personality attributes on the risk taking behavior of individuals. While there is a range of personality attributes that may influence risk taking, we focus on two personality dimensions: confidence and anxiety. Lopes (1984, 1987) argued that an individual's risk propensity is significantly influenced by the degree to which he or she is motivated by hope or fear. Looking at the attributes of hopeful and fearful individuals that Lopes (1987) describes, they appear to be closely related to the degree of confidence and anxiety an individual possesses.

First, we see the personality attribute of confidence as likely to influence risk-related decision-making since these variables affect how individuals will tend to perceive the decision situation and how they attend to the available information. Confidence tends to focus the attention of individuals to the potential in the situation and also leads individuals to overweight the possible positive outcomes of a situation (McKenzie, 1997; Lopes, 1987). Additionally, confidence leads individuals to believe that they can control their situation (Klein & Kunda, 1984). We also believe that anxiety is likely to affect risk-related decision-making since anxiety leads individuals to focus on the potential threats in their environment (Eysenck, 1992), to experience a high fear of failure (Elliot & McGregor, 1999), and to exhibit a preference for options that reinforce their sense of security (Raghunathan & Pham, 1999).

The simple expectation is that confident individuals, with their focus on opportunities, sense of control, and their tendency to over-weight positive outcomes will be risk seeking while anxious individuals, with their focus on threats, fear of failure, and desire for security will be risk averse. However, as Lopes (1987) notes, the decision context in which an individual resides may affect the way in which individual attributes affect decision making.

To examine this possible interaction, we examine the effect of confidence and anxiety on risk behavior in two common organizational decision settings: in non-competitive and

competitive contexts. We selected these two contexts because decision makers in organizations often face risky decisions reflective of both types of decision context. A decision context is non-competitive when decision makers make their choices in quasi-isolation, choosing between a set of options where the ability to invest in those options is not directly affected by competitors in the market. For example, a senior manager of a firm may decide between two or more capital expenditure choices, with some being fairly conservative options in line with the firm's current production technology and others higher risk innovative investments in new production technology. While the effect of competition in the market is likely reflected in the net present value options of these choices, we refer to the decision choice as non-competitive because the firm's rivals do not directly affect the ability to implement or the cost of implementing the desired choice.

In a competitive context, on the other hand, the goals of two or more decision makers are interdependent and are in conflict in a sense that one decision maker can only succeed at implementing the decision to the detriment of others (Deutsch 1949). Decision makers in organizational settings often find themselves in competitive contexts, such as in an investment decision context. In this context, firms often compete with one or more rival firm to acquire another firm or rights to a desirable asset. We see this decision as competitive since the ability of the firm to implement their desired option and the cost of implementation are directly influenced by the existence of decision makers with a conflicting interest. We believe that decision context may influence impact of personality attributes on decision-making. The absence or existence of a direct competitor in the decision is likely to influence the salience of different decision criteria and the attention of the decision maker. Thus, in this study, we examine the interaction of the influence of confidence and anxiety and decision context on the risk taking behavior of individual decision makers.

This work makes at least three contributions to the risk literature. First, we demonstrate that individual personality attributes have an impact on decision risk behavior, a topic that has rarely been explored within the risk literature despite its theoretical and practical importance.

Second, in line with the recommendation of Markoczy (1997), we directly test the influence of individual attributes on actual decision behavior, rather than the more indirect tests linking proxy measures of individual differences (i.e. demographic characteristics) on proxy measures of decision behavior (i.e. corporate financial metrics) often found in organizational decision research. Third, we show that decision context moderates the relationship between individual personality attributes and risk taking.

THEORY AND HYPOTHESES

The influence of confidence on risk decisions in non-competitive situations

In organizational settings, managers often face decision scenarios where they must choose between options with various risk profiles but in which they face no direct competition to access the resources needed to implement their chosen course. We begin by investigating the potential effect of confidence and anxiety on risk behavior in such a non-competitive context.

Confidence is likely to influence the risk taking of individuals in a non-competitive context since confidence influences how individuals frame their decision environments (Lopes 1987), their capabilities to respond to their environment (Bledsoe 1979), and their willingness to commit to new actions (Lennings & Gow 1997). Following Chen, Gully and Eden (2004) we define confidence as individual differences in their tendency to view themselves to be capable to meet challenging task demands in a wide variety of situations. Confidence is basically a generalized self-efficacy belief (Chen, Gully, Whiteman, Kilcullen 2000) which is a relatively stable individual characteristic and as such distinct from the malleable, task specific self-efficacy belief of individuals (Bandura 1977). Trait confidence has been shown to relate to psychological factors that are directly related to individuals' willingness to take risk. Confident individuals, for example tend to look for the opportunities in a risky situation (Lopes 1987), they tend to believe that they are able to achieve their goals and believe in their potential to control their environment (Klein and Kunda 1994). Confident individuals also tend to have high achievement motivation (Chen, Gully and Eden 2004), and tend to invest high level effort on tasks that they are committed to and heighten effort in the face of failures or setback, while

individuals with low confidence shy away from difficult tasks, and when faced with setbacks, they quit too easily, and lose out on opportunities (Hall and Foster 1977). In taxing, risk-preference situations, highly confident individuals remain task focused and approach stressors or threats with confidence that they can exercise some control over them (Klein and Kunda 1994). They focus on their own capabilities and success targets while individuals low in confidence dwell on their personal deficiencies, the formidableness of the task, and the adverse consequences of failure. Because they are prone to diagnose insufficient performance as deficient aptitude, it does not require all that much failure for individuals low in confidence to lose faith in their capabilities, which prevents them from taking on risk in subsequent activities.

Confident individuals, however, may also not adequately internalize the threats they face. Their resilience and task focus in the face of failures and their belief in exercising control over events that are uncontrollable tend to make them to take undue risk, which increases the possibility of financial losses. Hence we hypothesize the following:

H1: In a non-competitive situation, confidence will be positively related to risk taking.

The influence of anxiety on decision risk in non-competitive situations

While we expect confidence to have a positive effect on risk taking in non-competitive situations, we expect the relationship to be negative between anxiety and risk taking in this decision context.

Anxiety is a personality trait that relates to the degree to which an individual is apprehensive, fearful, nervous, tense, and jittery (Costa and McCrae, 1992). Anxious individuals tend to focus on the potential loss or negative outcome rather than the potential gains associated with a given decision setting. Thus, from the perspective of Lopes (1987), anxious individuals are likely to perceive greater fear when facing decisions than less anxious individuals. However, it should also be noted that anxiety possesses considerable survival value, as it facilitates the early detection of impending danger in the potentially threatening environments (Eysenk, 1992).

This survival benefit of anxiety points out an important aspect of the behavior of anxious individuals. Individuals high in trait anxiety tend to differ in their attentional functioning than less anxious individuals. Specifically, they have an attentional bias towards threatening information, and are more likely than are low trait-anxious individuals to notice and rely on cues that signal danger. They interpret ambiguous stimuli in a more threat-relevant manner (MacLeod and Cohen, 1993), believe negative events are more likely to happen to them (Butler & Mathews, 1987), and respond faster to threat-relevant stimuli (Broadbent & Broadbent, 1988).

Importantly, anxiety narrows attention, increases attentional selectivity (Eysenk, 1992), and interferes with judgment and decision making such that individuals process information less systematically (Raghunathan & Pham, 1999). Previous research has demonstrated that high-anxiety individuals broadly scan their environment for stimuli that might signal possible dangers and upon detection show a tendency to selectively focus on threatening stimulus while ignoring neutral information. Moreover, anxious individuals may have such highly developed danger detection processes that they become hypervigilant and exaggerate the severity of dangerous events in the environment (Eysenk, 1992). Thus, high trait anxiety individuals tend to attend selectively to threatening external stimuli (Broadbent and Broadbent, 1988), they tend to interpret ambiguous stimuli in a threatening fashion (Eysenk, 1992; MacLeod and Cohen, 1993), and perceive higher risk in decision situations (Stober, 1997).

In a non-competitive risky decision setting, anxiety is likely to lead to increased risk aversion. With their more narrow attention focus and bias toward threatening information, anxious individuals are likely to focus on the loss potential associated with a risky decision. Thus, faced with a decision choice that allows them to limit their exposure to this downside loss potential (March & Shapira, 1987), anxious individuals are likely to exhibit loss averse behavior and choose the less risky option. Based on this reasoning, we make the following hypothesis:

H2: In a non-competitive context, anxiety will be negatively related to risk taking.

The influence of confidence on risk behavior in competitive situations

Competitive situations involve two or more decision makers whose goals are interdependent and in conflict (Deutsch 1949a, 1949b). These types of decisions exist commonly for strategic decision makers. For example, when firms considering acquiring an asset, such as another firm, real estate, patent rights, or key personnel, they often face competitors bidding for the same asset. In competitive situations, individuals can only succeed in implementing their desired course of action at the expense of their competitors (Deutsch 1949a, 1949b). We believe that the element of competition may influence how confidence and anxiety affects a decision maker's decision processes and resulting risk propensity.

As discussed earlier, confidence tends to lead people to (a) focus on the opportunities in risky situations (Lopes, 1987), (b) believe they can control the situation and limit the threats they face (Klein and Kunda 1994), and (c) commit to and pursue courses of action in the face of initial impediments or setbacks (Miyake and Matsuda 2002). In a competitive bidding situation, all of these consequences of confidence are likely to lead to higher bidding, both in the initial bid made for an asset and the final bid offered. First, confidence leads decision makers to focus on opportunities and to perceive that they can control their environmental threats they face (Klein and Kunda, 1994). This would likely cause them to overvalue the asset they are trying to acquire since they will more positively frame the expected outcomes associated with the acquisition, resulting in a higher initial bid. Confident individuals are also likely to persist in their bidding behavior, resulting in higher final bids and higher risk taking since they are more likely to pursue a course of action in spite of initial setbacks in the form of counter-bidding by their competition. Higher bids, in turn, result in greater risk taking since the value of the asset remains constant. Thus, the higher the price paid for it, the more likely the final payoff for making the acquisition of the asset will be negative and, if negative, the greater the loss. Hence, we hypothesize the following:

H3: In a competitive bidding situation, confidence will be positively related to risk taking.

The influence of anxiety on risk behavior in competitive situations

While the hypothesized relationship for confidence is consistent across non-competitive and competitive contexts, we see a more complex relationship for anxiety. Recall that anxious individuals are fearful (Costa & McCrae, 1992), broadly scan their environment, frame neutral information as threatening (MacCleod & Cohen, 1993), focus on the greatest threats they face (Broadbent & Broadbent, 1988; Eyesenk, 1992), strive to avoid failure (Elliot & McGregor, 1999), and attempt to achieve security (Raghunatham & Pham, 1999). Additionally, anxious individuals tend to be publicly self-conscious (Beck & Clark, 1988) and, consequently are more sensitive to social cues. These attributes are likely to lead to risk avoidance in a non-competitive situation, but we believe that they may result in increased risk taking in a competitive context.

For an anxious individual, the existence of competition may substantially change how the decision maker frames the decision. As we noted earlier, anxious individuals attend to the most threatening aspects of the decision environments they face. With a risk preference situation, that is likely to be the potential losses they face with the different decision options. However, in a competitive decision situation, such as the bidding for a desirable asset, the most threatening aspects of the decision may not be the payoff function associated with the decision. Instead, anxious decision makers may focus on losing the competition itself as the most relevant threat. This will likely cause the anxious individual to bid higher, resulting in higher risk actions.

Competitive situations tend to invite social comparison between winners and losers and thus often refocus attention from the task to the competition itself (Ames and Felker 1979). Individuals, however, seem to differ to what degree they lose sight of doing well on the task while shifting their attention to the competition (Roberts 1974).

We believe that anxiety is likely to cause decision makers to refocus their attention from the decision task to the competition due to the information processing techniques triggered by anxiety. While anxious decision makers tend to initially widely scan their environment, they then restrict their information processing and become more attentionally selective (Eyesenk, 1992). For three reasons, we believe that the informational items anxious individuals are likely to attend to relate to the competition itself. First, anxious individuals focus on the most salient

threats that they face. Since the threat of losing a bidding contest to which they have committed themselves is much more immediate and concrete than a more distant threat that may result from overpaying for the asset in question, anxious individuals are more likely to attend to the threat associated with losing the contest than the consequences of the price paid to win the contest. Second, two of the primary fears that anxious individuals perceive are the fear of losing control of their environment (Beck & Emery, 1985) and the fear of failure (Elliot & McGregor, 1999). Since decision makers have to make a commitment to participate in the competition, once they have done so, anxious individuals are likely to want to maintain their perceived control by winning the bidding contest. Relatedly, they are likely to see the loss of the bidding process as a failure since they would not have succeeded in completing an acquisition to which they had committed themselves. Finally, since anxious individuals are sensitive to social cues and concerned about how others perceive them, they are likely to want to avoid being labeled the loser by those with whom they interact, including their direct competitor(s). All three of these internal pressures are likely to lead the anxious individual to persist in a bidding contest, resulting in a higher final bid and greater risk taking.

H4: In a competitive bidding situation, anxiety will be positively related to risk taking.

Method

Our study was done in two stages. In stage 1 we tested risk taking behavior with regards to a non-competitive decision problem, while in stage 2 the decision context was competitive. Details of the two stages are given below.

Stage 1.

Subjects

168 upper level undergraduate strategic management students participated in stage 1 to receive course credit. They were told that participation in the experiment would provide them an opportunity to make decisions in a simulated organization.

Dependent Variable

In stage 1 we tested our first two hypotheses in the domain of an asset allocation decision. An asset allocation decision was set within a scenario in which participants were asked to act in the role of a CEO of a fictitious engine manufacturing firm. After some background information on the company, subjects were asked to choose their preference between building a new carburetor to go along with their existing engines, which was framed as a high probability—low payoff (low risk/low reward) decision. Alternatively, subjects could choose to build a high-end motorcycle, which was framed as a lower probability—high payoff (high risk/high reward) decision (see Appendix). Pilot testing before the study demonstrated that subjects tended to select the lower risk option approximately 55% of the time, and the higher risk option about 45% of the time.

Independent Variables

Preceding the asset allocation decision by a few weeks, subjects were asked to complete a survey that among others measured their trait anxiety and trait confidence. To measure trait anxiety, we used the 8 item anxiety scale from the Revised NEO Personality Inventory (NEO-PI-R), an instrument with well-established reliability and validity (Costa and McCrae, 1992). This instrument contains self-statements that assess various facets of personality. Anxious individuals are described as apprehensive, fearful, prone to worry, nervous, tense, and jittery, and those that score high on this scale are more likely to have free-floating anxiety, and tend to dwell on things that might go wrong (Costa and McCrae, 1992).

To measure work related trait confidence, we used five items of the 8 item competence scale, which refer to the sense that one is both capable and effective and thus corresponds with our definition of confidence. These items include, (1) “I keep myself informed and usually make intelligent decisions”, (2) “I pride myself on sound judgment”, (3) “I don’t seem to be completely successful at anything “(reverse scored), (4) “I’m a very competent person”, (5) “I am efficient and effective in my work.” High scorers on our five-item scale feel well prepared to deal with challenges, while low scorers have a low opinion of their abilities (Costa & McCrae,

1992). We did not use three items of the NEO-PIR competence scale, however, because these three items capture sensibility and prudence as opposed to confidence. These items include: (1) “I’m known for my prudence and common sense”, (2) “I don’t take civic duties like voting very seriously” (reverse scored) and (3) “I often come into situations without being fully prepared” (reverse scored). Furthermore, when we conducted a factor analysis on the competence items, we found that each of the five confidence items loaded highly on one factor (correlations greater than $> .4$), while the three items that we did not use, did not load highly on this same factor (correlations $< .4$).

Control Variables

When collecting data on trait anxiety and trait confidence we also collected demographic information on the subjects, including gender and age. Prior research has indicated that gender may influence the risk propensity of decision makers (Powell & Ansic, 1997), while age has been shown to be negatively associated with risk propensity (e.g., MacCrimmon & Wehrung, 1990, Dulebohn 2002). We therefore controlled for these demographic variables in our analysis. We coded males as 1 and females as 2.

Statistical Methods

Since our dependent measure on decision risk is dichotomous in which subjects must choose between a new product over a product extension, we use logistic regression to test the hypotheses. The logistic regression estimates were obtained with the Logit procedure of STATA Version 8. Tests of the hypotheses were carried out by calculating a logistic regression with the following functional form:

$$\ln P_i / (1 - P_i) = a + BX_i$$

In which P_i is the probability that the subject will select a new product over a product extension. The log odds of the probability is held to be linearly affected by a vector of covariates X_i with coefficient vector B and intercept a . The effect of a one-unit change of the j th covariate X_{ij} on the probability of the observation i entering a subfield is $B_j P_i(1 - P_i)$. Because the estimates were obtained with maximum likelihood methods, no grouping of the data was necessary

(Hanushek and Jackson, 1977; Maddala, 1983). Finally, since our hypotheses are directional, we performed one-tailed tests.

Results

Logistic Regression results are presented in Table 1. Results from Model 1 show that age and gender are not significantly related to decision risk. Consistent with Hypothesis 1, Model 2 shows that confidence is marginally related to decision risk ($p < .10$), and consistent with Hypothesis 2, anxiety is negatively related to decision risk ($p < .05$).

Insert Table 1 about here

Stage 2

Subjects

Stage 2 involved decision making in a competitive risk decision context, where subjects who participated in stage 1 were asked to come to a computer laboratory outside of course hours to complete the second stage of the experiment. 131 of the original 168 subjects completed stage 2 for extra credit, while the remaining subjects opted not to take part in this stage of the experiment. Subjects were scheduled to come to the computer laboratory in five minutes intervals, where they were directed to a computer by one of the authors. Computers were positioned in the lab in a way that subjects could not see the computer screen of other subjects who were completing the experiment during the same time period.

Before subjects started working on the experiment they were told that participation in the experiment would provide them an opportunity to make a strategic decision in a simulated organization. They were also told that they will be linked with another subjects in a computer lab of another university for this experiment, and then were asked to wait for a computer personnel (who was present and clearly visible to the subjects) to establish an internet connection between

the subjects and another subject in another lab. In reality the “other subject” was a computer program that simulated the presence of the competitor subject.

Dependent Variable

In stage 2 we tested our third and fourth hypotheses in the domain of a competitive acquisition bidding decision. Participants were asked to act in the role of a CEO of a fictitious ski manufacturer. After some background information on the company (see appendix), which emphasized its skill set, subjects were told that the firm had been contemplating making an acquisition of a snowboard manufacturing company. Subjects read that the ski and snowboard industries are significantly similar so that their firm could take its skills in manufacturing and marketing and apply them to the snowboard firm to make it a successful acquisition. In addition, subject read that CEO compensation is tied to firm size; hence, an acquisition would likely lead to increased CEO compensation.

Initial bid. Subjects were then asked how much of an acquisition premium they would be willing to pay for the snowboard firm. The result was logged as the initial bid.

Final bid. No matter what choice subjects made on their initial bid, after a time lag of about 45 seconds, their “competitor”, who they were told was another student playing the role of CEO of a rival ski manufacturer, saw their offer and countered it with a stated counteroffer (with a bid ranging from 4-6% greater than their initial bid). The subjects were then asked whether they preferred to stop bidding or to counter with a higher offer for the snowboard firm. They were then asked for their counteroffer. If they make a counteroffer, after a time lag of around 30 seconds, subjects were again told their rival countered their offer, with the counter-offer again in the range of 4-6% greater than their previous bid. Subjects were again asked whether they would like to stop bidding, or continue with a higher counteroffer. This process continued until either the subject stopped bidding, which was recorded as their final bid, or if subjects bid to 100% over the initial market value of the snowboard firm, which was recorded as their final bid. Approximately 12% of subjects made an acquisition bid at the maximum level, which caused a positively skewed distribution for this variable.

Independent and control variables

In stage 2 we used the same independent and control variables that we used in stage 1.

Statistical Methods

Our initial bid and final bid dependent variables are non-negative count variables. Moreover, the distribution of both these variables is skewed in a positive direction, according to a SKTEST in STATA 8.0. Since Poisson regression assumes data follow a Poisson distribution in which the distribution is skewed and non-negative (Hoffman 2004), we performed Poisson procedure in STATA 8.0.

Results

Poisson Regression results are presented in Tables 2 and 3. Results from Model 1 show that age is not significantly related to either initial or final bid, but gender is related to final bid ($p < .01$), with males more likely to make a higher final acquisition bid. Consistent with Hypothesis 3, Model 2 in Tables 2 and 3 show that confidence is positively related to initial acquisition bid ($p < .01$), and final acquisition bid ($p < .05$). Finally, consistent with Hypothesis 4, Model 2 in both Tables 2 and 3 show that anxiety is positively and significantly related to both the initial and the final acquisition bid ($p < .01$).

Insert Table 2 and Table 3 about here

DISCUSSION

In total, our findings are consistent with arguments that individual differences among decision makers affect risk related decision-making, an area that has largely been unexplored within strategic risk research. Consistent with this argument we found that both anxiety and confidence of individual decision makers impacted their decisions involving risk. Our analyses indicate that a broader view is called for in understanding decision risk, one that includes individual attributes in addition to organizational and situational/behavioral factors.

More specifically, we tested the theoretical ideas that confidence would be positively related to decision risk in both competitive and non-competitive contexts, while anxiety would be negatively related to decision risk in a non-competitive context, but would be positively related to decision risk in a competitive context. Our findings are consistent with prior work in strategic management that has shown that confidence impacts on strategic decisions and their outcomes (e.g., Hayward and Hambrick, 1997), as we found support for our hypothesized effect of confidence on decision risk. Confidence was shown to be marginally related to decision risk in a non-competitive context (H1) and was significantly related to both initial and final bid in a competitive decision context (H3). Less work in strategic management, though, has been geared at the influence of anxiety on strategic decisions. Perhaps the most interesting finding in our study was that anxiety was differentially related to decision risk depending on the decision context. Anxiety was found to be negatively related to decision risk in a non-competitive context (H2), but was found to be positively related to decision risk—for both an initial bid and a final bid (H4).

Thus, this study extends our knowledge on the effects of context in impacting on the influence of individual attributes on decision risk. Specifically, we found that differences in competitive and non-competitive contexts lead to dramatic differences in the influence of individual attributes on decision risk. We found that while anxiety has a negative influence on decision risk in non-competitive context, it actually has a positive effect in a competitive situation. While this research sheds light on the influence of decision context, it raises other interesting questions. For example, what is it specifically about the competitive context that drives anxious people, who tend to be risk averse in a non-competitive situation, to be risk seeking? We interpret these findings as suggesting that the anxious focus their attention away from the decision task to the competition itself (the most salient threats they face), and they are committing themselves to respond to a more immediate threat (losing the contest). However, we did not specifically examine the underlying processes that drive this behavior. Hence, future studies might wish to more carefully investigate the competitive decision context, and tease out

the factors that drive anxious individuals to seek risk, such as the manner on which they attend to available information or to the impact of their fears of failure and/or losing control.

We also believe it is interesting to note that our findings suggest that in some contexts confidence and anxiety lead to different risk taking behaviors. In this sense, we are wading into the discussion on the impact of individual personality vs. macro-personality attributes on perceptions and behaviors. Some organizational scholars have argued that confidence (general self-efficacy) and neuroticism (of which anxiety is one component) along with self-esteem and locus of control are part of a generalized “core self-evaluation” of individuals and as such they should be collapsed into one measure (Judge, Erez, Bono and Thoresen 2002, 2003). Others have argued that the individual personality sub-constructs within larger personality dimensions may have differential effects on behavior and should be examined individually (Moon, 2001; Moon et al, 2003). While it is clearly very early in this debate, the evidence from these studies seem to suggest that this generalized “core self-evaluation” is valuable in predicting affective constructs, such as job and life satisfaction as well as overall job performance (Judge & Bono, 2001; Judge, Erez, Bono and Thoresen 2003,). However, the studies examining specific decision behavior, including this study and the work done by Moon and his colleagues (Moon 2001; Moon, H., Hollenbeck, J.R., Humphrey, S.E., & Maue, B. 2003) and by Chen and his colleagues (Chen, G. & Gully, S. M & Eden, D. 2001; Chen, G. & Gully, S. M & Whiteman, J.A. Kilcullen, R. N. 2001; Chen, G. & Gully, S. M & Eden, D. 2004), suggest that the individual personality attributes may be more valuable in predicting decision behavior since the relationships between the individual personality attributes within the larger scales may have opposing influences on decision making.

Finally, while we think our ideas are generalizable in a broader sense, beyond our lab setting, we are unable to say this conclusively. The structure and setting of our study allowed us to assess the internal validity of our findings. However, we encourage future studies that might consider using quasi-experimental designs to increase external validity. Hence, while our research has been exploratory, it offers new evidence about both individual characteristics, as

well as decision context, that should promote future research to emphasize the interaction of individual characteristic and decision situation to untangle the complex individual processes on risky decision behavior.

Appendix

Experiment 1

After the shareholder's meeting, you meet with your top managers as well as several highly regarded industry analysts to help inform you about the implications of an asset allocation decision. You are trying to choose to either build a carburetor to go with your existing engines or to build a high-end motorcycle. The managers and outside analysts have done some careful analysis and have given you following assessment:

Scenario 1: LA Engines would invest \$10 million in technology to build a new, more efficient **carburetor** made from superior materials. If LA Engines invests in this technology, the analysts argue that carburetor sales would likely improve and that ROA performance would have a 50% chance of remaining at 5%, and have a 50% chance of going up to 6%.

Scenario 2: LA Engines would invest \$30 million in Research and Development and Technology to build a **premium motorcycle** made from stronger and lighter alloys than its competitors. Analysts argue if the firm succeeds in building such a cycle performance will climb, but if it fails performance will decline. Specifically, the analysts estimate that investment into this venture will lead to a 55% chance ROA will go up to 10%, but a 45% chance that ROA will drop to less than 1%.

Given this limited information, check the box of the scenario you prefer?

Scenario 1: Build the **Carburetor**

Scenario 2: Build the **Premium Motorcycle**

Experiment 2

Background information on the Ski Company

You are the newly appointed CEO of the **Ski Company**, and you are interested in maximizing the market value of the company. The Ski Company is a top performing ski manufacturer with a market value of (\$200 million dollars in version 1; \$250 million dollars in version 2; \$300 million dollars in version 3). However, the ski industry is mature, and demand is slowing. As a result Ski Company has been thinking about going into the snowboarding industry to look for new sources of revenue.

Currently, Ski Company has been discussing the possibility of acquiring Ritchie Snowboards, a premium snowboard manufacturer. Some of your top managers argue that the ski and snowboard industries are significantly similar so that the Ski Company could take its skills in manufacturing and marketing and apply them to Ritchie Snowboards to make it a successful acquisition.

In addition, it is common knowledge that CEO compensation is tied to firm size. Hence, if you make an acquisition, it is likely that your compensation will increase based on the increased size of The Ski Company after an acquisition.

Initial bid

If you are interested in acquiring Ritchie Snowboards, which again has a market value of \$80 million dollars, you should know there is an *acquisition premium* associated with most acquisitions. This means that in order to purchase all the stock of Ritchie Snowboards, a publicly held firm, you will likely have to pay more for Ritchie Snowboards than the stock market currently values it. Acquisition premiums tend to vary from 5% to 60% above the stock market value for the target firm. This is because it is common for multiple companies to place bids on an acquisition candidate. So, the higher the premium you are willing to pay for Ritchie Snowboards, the more likely it is your offer will beat offers of other companies interested in acquiring Ritchie Snowboards. Hence, your top managers have advised you that the more interested you are in acquiring Ritchie Snowboards, the greater a premium you should pay to increase the likelihood of a successful acquisition.

How much of an acquisition premium would you be willing to pay for Ritchie Snowboards?

- _____ (0-5% premium) up to \$84 million dollars for Ritchie Snowboards
- _____ (5-10% premium) up to \$88 million dollars for Ritchie Snowboards
- _____ (10-15% premium) up to \$92 million dollars for Ritchie Snowboards
- _____ (15-20% premium) up to \$96 million dollars for Ritchie Snowboards
- _____ (20-25% premium) up to \$100 million dollars for Ritchie Snowboards
- _____ (25-30% premium) up to \$104 million dollars for Ritchie Snowboards
- _____ (30-35% premium) up to \$108 million dollars for Ritchie Snowboards
- _____ (35-40% premium) up to \$112 million dollars for Ritchie Snowboards
- _____ (40-45% premium) up to \$116 million dollars for Ritchie Snowboards
- _____ (45-50% premium) up to \$120 million dollars for Ritchie Snowboards
- _____ (50-55% premium) up to \$124 million dollars for Ritchie Snowboards
- _____ (55-60% premium) up to \$128 million dollars for Ritchie Snowboards

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**Table 1: The influence of anxiety and confidence on decision risk
in the non-competitive situation**

<i>Variable</i>	<i>Model 1</i>	<i>Model 2</i>
Age	.017 (.068)	.007 (.072)
Gender	.438 (.309)	.040 (.355)
Confidence		.088+ (.063)
Anxiety		-.091* (.041)
Log likelihood	-117.50	-110.35
Log likelihood test++		14.30**
D.F.	2	4

*Significance tests are one-tailed; +p<.10; *p<.05; **p<.01

**Table 2: The influence of anxiety and confidence on initial bid
in the competitive bidding situation**

<i>Variable</i>	<i>Model 1</i>	<i>Model 2</i>
Age	-.004 (.015)	.002 (.015)
Gender	-.069 (.072)	.017 (.082)
Confidence		.033** (.014)
Anxiety		.024** (.009)
Log likelihood	-339.08	-333.47
Log likelihood test++		11.22**
D.F.	2	4

*Significance tests are one-tailed; +p<.10; *p<.05; **p<.01

**Table 3: The influence of anxiety and confidence on final bid
in the competitive bidding situation**

<i>Variable</i>	<i>Model 1</i>	<i>Model 2</i>
Age	-.015 (.012)	-.010 (.012)
Gender	-.128* (.052)	-.060 (.059)
Confidence		.019* (.010)
Anxiety		.018** (.006)
Log likelihood	-460.19	-455.10
Log likelihood test++		10.18**
D.F.	2	4

*Significance tests are one-tailed; +p<.10; *p<.05; **p<.01