

RUNNING HEAD: RISK AND ESCALATION OF COMMITMENT

Applied Psychology: An International Review (in press)

The role of risk in making decisions under escalation situations

Kin Fai Ellick Wong

Department of Management of Organizations

Hong Kong University of Science and Technology

Clear Water Bay, Kowloon

Hong Kong, SAR

Tel: (852) 2358-8063

Fax: (852) 2335-5325

e-mail: mnewong@ust.hk

Author's Note

I would like to thank Jessica Y. Y. Kwong and Peggy Y. P. Chan for their helpful comments on the present study. Correspondence concerning this article should be addressed to Kin Fai Ellick Wong, Department of Management of Organizations, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong SAR.

Electronic mail can be sent to mnewong@ust.hk.

The role of risk in making decisions under escalation situations

ABSTRACT

This paper reports on two studies examining the relationship between escalation of commitment and three risk-related variables – risk propensity, risk perception, and outcome expectancy. Results showed that (a) risk propensity and outcome expectancy were positively related to escalation of commitment, whereas risk perception was negatively related to escalation of commitment; (b) risk perception partially mediated the effects of risk propensity, and outcome expectancy mediated the effects of risk perception. These findings are generally consistent with the conceptual framework proposed by Sitkin and Pablo (1992). Implications for risk-taking behavior, escalation of commitment, and practice are discussed.

The role of risk in making decisions under escalation situations

INTRODUCTION

Decision makers in organizations often have to make important and difficult decisions under escalation situations in which a loss has resulted from a prior decision. They have to decide whether to quit or to persist with this failing course of action. The choice presents a dilemma because, “...withdrawal can end a sequence of losses, it may also involve material and/or psychological costs. And, even though persistence may involve further risk of capital, it can bring about eventual gain” (Staw, 1997, p. 192). Previous research has shown that in this kind of situation, individuals who are personally responsible for the prior decisions have a stronger tendency to persist than do those who are not personally responsible for the decisions (see Brockner, 1992; Staw, 1997 for reviews). A similar tendency has been observed in a variety of situations, including waiting situations (Rubin, 1981), selection and performance appraisal (Schoorman, 1988), gambling (McGlothlin, 1956), and investment (Thaler, 1980). This phenomenon has been referred to as escalation of commitment (Staw, 1976, 1981), entrapment (Brockner & Rubin, 1985), or the sunk cost effect (Arkes & Blumer, 1985).

The escalation dilemma has been characterized as being torn between a certain choice with losses and an uncertain choice with extreme consequences. The escalation literature has emphasized that choosing to persist is a relatively risky option that could lead to an uncertain outcome of eventual gains or more losses (Brockner, 1992; Schoorman, Mayer, Douglas, & Hetrick, 1994; Whyte, 1986, 1993). This feature neatly corresponds with the general definition of “risk”: a risky option is the one associated with potential losses with the uncertainty about the significance of those losses (Sitkin & Pablo, 1992; Yates & Stone, 1992). On the other hand, withdrawal from an escalation situation is a less risky option that would lead to certain but smaller losses. Indeed, the escalation literature has explicitly regarded escalation in a failing course of action as a more risky option than withdrawal from it (Brockner, 1992; Schoorman et al., 1994; Whyte, 1986, 1993).

This conceptual overlap between escalation and risk points to the importance of risk into our current understanding of escalation of commitment. Little attention, however, has been given to the role of risk in the escalation of commitment. Although there have been some studies examining framing effects on escalation of commitment (e.g., Schoorman et al., 1994; Whyte, 1993), these studies did not look into other risk variables within a general model of risk-taking behavior, such as the one proposed by Sitkin and Pablo (1992). Thus, the first purpose of the present study is to fill this gap by examining escalation of commitment in the context of the risk-taking behavior model proposed by Sitkin and Pablo (1992; Sitkin & Weingart, 1995).

The second purpose of this study is to extend the Sitkin-Pablo model by including outcome expectancy as the immediate determinant of risk-taking behaviors. Although there has been some research suggesting that outcome expectancy is critical in determining risk taking behaviors (Maddux, Norton, & Stoltenburg, 1986; Scheier & Carver, 1987), both the literature on escalation of commitment and the Sitkin-Pablo have overlooked the importance of outcome expectancy. This construct has not been examined in previous escalation studies nor is it included in the Sitkin-Pablo model. Accordingly, this study seeks to demonstrate the importance of outcome expectancy in risk-taking behaviors manifested in terms of escalation of commitment.

Some scholars note that there are substantial cross-cultural differences in risk-taking behaviors (Watson & Kumar, 1992; Weber & Hsee, 2000), indicating that it is not self-evident that the Sitkin-Pablo model is valid in a non-Western setting. In particular, the literature reveals a sharp contrast between Chinese decision makers and their Western counterparts in terms of risk-taking behaviors (Hsee & Weber, 1999; Weber & Hsee, 1998). Accordingly, another purpose of the present study is to seek evidence of the cross-cultural generalizability of the Sitkin-Pablo model in the Chinese context.

I first introduce Sitkin and Pablo's (1992) conceptual framework of risk-taking behaviors. This

is followed by a section outlining the psychological determinants of escalation of commitment derived from the Sitkin-Pablo model and a discussion of cross-cultural differences in risk-taking behaviors. Two studies testing the hypotheses derived from the proposed relationships are next described. Theoretical implications for risk-taking behavior in general and for escalation of commitment in particular are discussed in the General Discussion section.

The Sitkin-Pablo Model of Risk-taking Behavior

Sitkin and Pablo (1992) proposed that variables that have been identified as predictors of risk-taking behavior (e.g., problem framing, outcome history, inertia, and top management team homogeneity, etc.) do not exert direct effects on risky decision-making. Rather, their effects are mediated by risk perception and risk propensity. This idea was preliminarily supported by an empirical study by Sitkin and Weingart (1995), which showed that risk propensity and risk perception mediated the effects of outcome history and problem framing, respectively, on risky decision-making behavior. I further suggest that outcome expectancy plays an important role in risk-taking processes, though it is not included in the original model. The relevant constructs are defined below.

Risk propensity. Risk propensity is a decision maker's current tendency to take or avoid risk. It captures individual differences in overall orientation toward risk-taking behaviors. It has been shown that more mature decision makers (in terms of age and seniority), who were assumed to be relatively low in risk propensity, were more risk averse than those who were less mature (MacCrimmon & Wehrung, 1990). Moreover, compared with people low in risk propensity, people high in risk propensity are more likely to perceive a situation as one of low risk, and thus they have a higher tendency to take risk (Sitkin & Weingart, 1995).

It should be noted that the Sitkin-Pablo model conceptualizes risk propensity as a "stable but changeable trait that can change over time and thus is an emergent property of the decision maker"

(Sitkin & Weingart, 1995; p. 1575). Risk propensity is thus conceptualized as persistent or enduring, and it can be “learned or inherited” (Corsini & Osaki, 1987, p. 542-543). The present study follows the approach of the Sitkin-Pablo model, defining risk propensity as a “cumulative tendency to take or avoid risks that is simultaneously persistent and can change over time as a result of experience” (Sitkin & Weingart, 1995; p. 1575).

Risk perception. Risk perception is defined as a “decision maker’s assessment of the risk inherent in a situation” (Sitkin & Pablo, 1992, p. 12). According to Sitkin and Weingart (1995), this assessment reflects the degree to which an individual perceives a particular situation as negative (Douglas, 1985), as a threat (Jackson & Dutton, 1988), and as out of control (Baird & Thomas, 1985). Perception of high risk would lead people to be more risk averse than would perception of low risk. For example, Sitkin and Weingart (1995) showed that individuals perceived the risky option in a positively framed situation to be more risky than that in a negatively framed situation, and hence they tended to be more risk averse in the former than in the latter situation (cf. Kahneman & Tversky, 1979; Tversky & Kahneman, 1981).

The Sitkin-Pablo model further suggests that risk propensity is one of the determinants of risk perception. The idea is that the relative salience of a threat and an opportunity varies as a function of risk propensity. Individuals high in risk propensity (i.e., risk-seeking decision makers) would pay more attention and give higher weight to positive than to negative outcomes (March & Shapira, 1987). Thus, they probably perceive most situations as relatively positive. In contrast, individuals low in risk propensity (i.e., risk-averse decision makers) would pay more attention and give higher weight to negative than to positive outcomes. Thus, they tend to perceive most situations as being relatively negative. Indeed, in an empirical study, Sitkin and Weingart (1995) showed that risk perception mediates the effects of risk propensity on risk-taking behavior. Figure 1a shows the relationship between risk propensity, risk perception, and risk-taking behavior proposed by the

Sitkin-Pablo model.

 Insert Figure 1 about here

Outcome expectancy. Outcome expectancy is defined as “judgments regarding the potential controllability of an outcome in general, regardless of whether a particular individual is able to influence the outcome” (Rodin, 1990, p. 3). It is a subjective judgment about the degree of the relationship between a specific action and a specific outcome. Bandura (1997) asserts that there are three forms of positive outcome, including a physical form such as “pleasant sensory experiences and physical pleasures”, a social form such as “social recognition, monetary, and conferral of status and power”, and a self-evaluative form such as “self-satisfaction and a sense of pride and self-worth” (p. 22). Unlike more enduring individual predispositions capturing similar ideas of expectancy and confidence, such as locus of control and self-esteem (i.e., constructs that are task independent), outcome expectancy is a state judgment that is task specific and varies across situations (Bandura, 1997; Maddux, et al., 1986; Rodin, 1990).

Despite its state and task-specific nature, as noted by Bandura (1997), outcome expectancy is conceptually distinct from efficacy expectation. To make the distinction, Bandura argued that “Perceived self-efficacy is a judgment of one’s ability to organize and execute given types of performances, whereas an outcome expectation is a judgment of the likely consequence such performances will produce” (p. 21). It is possible that a person low in self-efficacy in one task still has high outcome expectancy, and vice versa. That is, one could expect to perform poorly (i.e., low in self-efficacy) but expect to get a good outcome (have a high outcome expectancy). For example, people who judge themselves poor tennis players would anticipate that they could not perform well in playing tennis, but might nonetheless expect that their poor performance is sufficient to win a match (e.g., when they find that their opponent is even worse).

The importance of outcome expectancy in risk-taking behavior is that it is a significant predictor of behavioral intentions (Maddux et al., 1986), particularly determining whether one engages in outcome-relevant behaviors (Scheier & Carver, 1987). People are more confident that an outcome-relevant action would lead to a desired outcome when they have high outcome expectancy than when they have low outcome expectancy. Thus, people are less risk averse when they have high outcome expectancy than when they have low outcome expectancy.

Conceptual differences among the constructs. It is important to note that although there are some overlaps among risk propensity, risk perception, and outcome expectancy, they are not identical constructs. Specifically, although risk propensity is hypothesized as a causal factor of risk perception, they are conceptually distinct. Risk propensity is a *person's* general tendency to take or avoid risk, while risk perception refers to the assessment of the overall threat and uncontrollability in a particular *situation*. In some situations it is possible for a person who has a strong tendency to take risks to see a situation as highly risk and vice versa. For example, an investor with a high risk propensity would tend to have a high risk perception when doing business in a third-world country because of potential military threats and uncontrollable events, such as currency fluctuations and the lack of legal protection.

It is also important to distinguish risk perception from outcome expectancy. Although it is logically true that risk perception is related to outcome expectancy (see the Hypothesis 5 below), the two constructs are not identical. Risk perception is a *general* "label attached to a risky situation" (Sitkin & Pablo, 1992, p. 24-25); outcome expectancy is the *specific* estimate attached to a particular action in a situation. It is not necessarily true that people in a risky situation expect all of their actions to have poor outcomes. Epstein and colleagues (Denes-Raj & Epstein, 1994; Epstein, Pacini, Denes-Raj, & Heier, 1996; Pacini & Epstein, 1999) demonstrate that sometimes a high outcome expectancy of an action could follow a high risk assessment of the situation. For example, in an

interesting experiment (Denes-Raj & Epstein, 1994, Study 1), subjects were offered an opportunity to win \$1 in a trial for every red jelly bean they drew from a bowl with red beans intermixed with white beans. Two bowls were presented to them. Bowl A contained 7 red beans and 93 white beans and Bowl B contained 1 red bean and 9 white beans. Subjects were allowed to make the draw from either bowl. It is interesting that although subjects reported that they *knew* that the probabilities of choosing from Bowl A were against them (i.e., they had a higher risk perception for Bowl A than Bowl B), they *felt* they could get more red beans from (and indeed they often chose to draw from) Bowl A (i.e., they had a higher outcome expectancy in connection with Bowl A than with Bowl B).

To sum up, risk propensity, risk perception, and outcome expectancy describe persons, situations, and actions, respectively. Risk propensity describes a person's disposition; risk perception describes the perception of a situation; and outcome expectancy describes the estimate or confidence of success a specific action.

Cross-cultural Differences in Risk-taking

Prior studies have shown that Chinese people are generally more risk-taking than their Western counterparts (Hsee & Weber, 1999; Weber, Hsee, & Sokolowska, 1998). Of particular relevance to the Sitkin-Pablo model and the current study is that the locus of cultural differences in risk-taking behaviors appears to be "associated primarily with cultural differences in the *perception of the risk of the financial option...*" (Weber & Hsee, 1998, p. 1205). Hsee and Weber (1999) offer a *cushion hypothesis* to explain why the Chinese are more risk-taking, suggesting that people in collective societies (e.g., China), as compared with those in individualistic societies (e.g., the USA), are more likely to receive help if they experience negative outcomes from a risky option. Accordingly, the Chinese perceive an option to be less risky than do people from Western societies, because Chinese people generally believe that help from others would reduce any potential negative consequences. The difference in risk perception of the same option then causes Chinese people to be more

risk-taking than people from Western societies.

This cultural difference in terms of risk perception indicates that it is not self-evident that the Sitkin-Pablo model could be generalized to a Chinese population. The cushion hypothesis suggests that the extent of generalizability of the Sitkin-Pablo model depends on the strength of the social support cushion. At one extreme, it is possible that the support cushion in the Chinese society might be so strong that Chinese would have little variation in risk perception. In this case, the role of risk perception might be much less important than that described by the Sitkin-Pablo model. Because the size of the cushion effects varies from situation to situation (Hsee & Weber, 1999), its impact under escalation situations remains to be tested empirically. Nonetheless, the present study recruited a Chinese sample to examine the generalizability of the Sitkin-Pablo model under escalation situations.

The Working Model and Hypotheses

The relationship between risk propensity and escalation of commitment. People high in risk propensity are those who have a strong tendency to take risks (MacCrimmon & Wehrung, 1990; Sitkin & Weingart, 1995). Given that escalating commitment has been regarded as a risky option, it is straightforward that those who are high in risk propensity would have a stronger tendency to choose to escalate their commitment to failing courses of action than would those who are low in risk propensity. Thus,

Hypothesis 1: There is a positive relationship between risk propensity and escalation of commitment.

The relationship between risk perception and escalation of commitment. Individuals tend to be risk averse when they perceive that the current situation is highly risky. They have a strong sense of being threatened, out of control, and lacking opportunity (Sitkin & Weingart, 1995; Highhouse & Yuce, 1996). Thus, it is reasonable to posit that people are reluctant to escalate their commitment to failing courses of action when they perceive that a highly risky situation will result from doing so, whereas a perception of low risk would lead them to have a higher willingness to persist in an

escalation situation.

Hypothesis 2: There is a negative relationship between risk perception and escalation of commitment.

The relationship between outcome expectancy and escalation of commitment. As outcome expectancy determines whether one engages in outcome-related action (Scheier & Carver, 1987), people tend to take risks when they expect that their risky actions will lead to the desired outcome. People with high outcome expectancy are more confident than those with low outcome expectancy that taking the outcome-related action will lead to positive or successful outcomes. Of particular relevance to escalation of commitment is that outcome expectancy affects how persistent individuals will be in various aspects of human behaviors (Ewart, 1995; Maddux, 1995). Thus, people with high outcome expectancy are likely to choose a more risky option in escalation situations than are those with low outcome expectancy.

Hypothesis 3: Outcome expectancy and escalation of commitment are positively related.

The mediating effects of risk perception and outcome expectancy. As mentioned above, the Sitkin-Pablo model posits that the effects of risk propensity on risk-taking behavior are mediated by risk perception. The same is hypothesized in the context of escalation situations. As people with high risk propensities are likely to pay more attention to and give higher weight to positive than to negative outcomes (March & Shapira, 1987), they (as compared with those with low risk propensity) probably have stronger tendencies to ignore negative feedback and to overweight positive information in an escalation situation, resulting in their more positive perception of the situation (i.e., low in risk perception). This should lead to their stronger commitment in an escalation situation.

The original model of Sitkin and Pablo (1992) posits that risk perception partially mediates the effects of risk propensity on risk decision-making. However, a subsequent empirical study (Sitkin & Weingart, 1995) found full mediation. Failing to show a significant risk propensity effect after

controlling for risk perception (i.e., the typical demonstration of full mediation) is logically not sufficient to rule out that the possibility that risk propensity has no effect at all (e.g., perhaps there was not sufficient statistical power to show it). Partial mediation is therefore hypothesized in the present study:

Hypothesis 4: The effects of risk propensity on escalation of commitment are partially mediated by risk perception.

Although the Sitkin-Pablo model proposes that risk perception is the immediate determinant of risk-taking behavior, I hypothesize that instead of exerting direct effects on escalation of commitment, risk perception exerts its effects through outcome expectancy for the following reasons. Individuals should generally have higher confidence that their action will lead to a positive outcome (i.e., high outcome expectancy) in a situation associated with low rather than high risk. For example, they should have higher confidence in winning the jackpot (i.e., the outcome) by gambling (i.e., the action) when they perceive that the probability of getting it is 30% (i.e., a low risk perception) than when they perceive the probability to be 1% (i.e., a high risk perception). Applying the same reasoning, it is probably the case that people will find themselves with greater confidence about a positive outcome by escalating their commitment when they perceive that a stronger commitment will increase rather than decrease the possibility of attaining the positive outcome. Thus,

Hypothesis 5: There is a negative relationship between risk perception and outcome expectancy.

Hypothesis 6: The effects of risk perception on escalation of commitment are mediated by outcome expectancy.

The goal of the present study is to examine empirically the effects of the variables that have been hypothesized or confirmed to be determinants of risk-taking behavior on escalation of commitment. Figure 1b shows the working model of the present study that, from a risk-taking perspective, describes the psychological processes of escalation.

STUDY 1

Methods

Participants. One hundred and twenty-six Chinese-English bilingual teachers working in twelve Hong Kong secondary schools voluntarily participated in this study. Their average age was 35.08 (ranging from 23 to 47), with an educational level of an undergraduate degree or above. Thirty percent of them were males. Each participant was randomly assigned to one of two conditions in which personal responsibility was manipulated as the independent variable. The purpose of this manipulation was to demonstrate that typical escalating commitment effects could be replicated in this sample because there was no previous research showing this effect in a Chinese population.

One of the major duties of secondary school teachers in Hong Kong at the time of this study was applying for funding from the Quality Education Fund (QEF). The QEF funds a wide range of projects that promote quality education in schools. It is one of the financial sources for schools to arrange activities promoting all-round education (e.g., study trips, music, sports, arts and cultural activities other than music and sports, academic extra-curricular activities, personal growth and guidance programs, etc.) and to update their computer systems (e.g., computer-assisted teaching and learning, computer networking, software development, multi-media learning centers, etc.). It is an annual competitive grant open to anyone. In 1999 and 2000, there were 2916 proposals submitted from secondary schools, of which 1438 received funding (i.e., the rejection rate was about 50%, see <http://www.info.gov.hk/qef/stat/index.htm>). In this study, the decision case used by Arkes and Blumer (1985) was modified to be relevant to the proposal application context.

Procedure and decision task. The author identified one representative from each school to be responsible for the distribution and collection of questionnaires. The representatives informed the participants that they needed to complete the questionnaire in a quiet place, read it carefully, evaluate and answer questions related to a short scenario as if it were actually true, and not to reveal the content until all questionnaires had been collected. The questionnaire consisted of three parts. Part I

was a scenario modified from Arkes and Blumer's (1985) "blank radar plane" case, which has been widely used to study escalation of commitment (e.g., Conlon & Garland, 1993; Moon, 2001). A personally responsible version and a personally non-responsible version of the scenario were constructed (Appendix A). The original "blank radar plane" version described that (a) previously, a financial investment had been made in the development of a new product, (b) recently, the decision maker learned the bad news that another company had already started marketing a similar product with better a design, and (c) the decision maker needed to indicate his/her willingness to give further funding for the same product, which served as the index of escalation of commitment (Conlon & Garland, 1993; Moon, 2001). To fit into the teaching context, the current version was modified to describe a situation in which (a) previously, time and effort had been devoted to a survey and data collection in order to prepare for a proposal of organizing a jazz dance program, (b) recently, the teacher learned the bad news that the government had announced that jazz dance programs were much less likely get funded due to similar programs having been over-funded, and (c) the teacher needed to indicate his/her willingness to continue writing the proposal for submission

In Part II, participants were asked to answer questions assessing risk perception, risk propensity, and outcome expectancy. In Part III, they were asked to give a willingness rating ranging between 0% (absolutely no) and 100% (absolutely yes) to indicate the extent to which they would continue to write the current proposal. Following previous studies (Conlon & Garland, 1993; Moon, 2001), I used the willingness rating to indicate escalation of commitment.

Predictor variables. A five-item scale adapted from Sitkin and Weingart (1995) was used to measure *risk propensity* ($\alpha = .65$). This scale asked participants to rate their tendency, from 1 (very weak) to 7 (very strong), to "make a risky decision based on the assessment and suggestions from others who you think are reliable", "make a risky decision based on analyses high in technical complexity", "make a risky decision that could have a major impact on the strategic direction of your

school”, “initiate a strategic action that has the potential to go wrong”, and “support a decision when I was aware that relevant analyses were done while missing several pieces of information”. A three-item scale modified from Sitkin and Weingart (1995) was used to measure *risk perception* ($\alpha = .81$). “How would you describe your current situation?” (a) 1 = significant opportunity to 7 = significant threat; (b) 1 = potential for loss to 7 potential for gain; (c) 1 = positive situation to 7 = negative situation. Two items (“How likely will the proposal be accepted?” and “How likely will the proposal help the school to be awarded further funding?”) were constructed to measure the participants’ degree of confidence that the current project would lead to a positive outcome (i.e., *outcome expectancy*, $\alpha = .81$).

Variables for control and manipulation checks. *Personal responsibility* was measured with a two-item scale (“To what extent do you feel responsible for the planning of establishing a jazz dance program?” and “To what extent do you feel responsible for starting this project?”) adapted from Conlon and Park (1987; $\alpha = .72$). *Knowledge of proposal writing* was measured by two items, “How would you rate your capability to write a project proposal?” and “How would you rate your knowledge of proposal writing?” ($\alpha = .70$). The analyses also included the gender, age, and teaching experience of the participants as control variables.

Results

Preliminary analyses. The results revealed that escalation of commitment occurred in the present study. Participants assigned to the personally responsible group, as compared with those assigned to the personally non-responsible group, gave higher ratings to perceived personal responsibility (4.82 vs. 3.77, $F(1, 124) = 26.85, p < .001$) and to the willingness to continue writing (59.2% vs. 49.1%, $F(1, 124) = 5.7, p < .05$). The means, standard deviations, and zero-order correlations of the variables measured in this study are summarized in Table 1.

Note that the quite high correlation between risk perception and outcome expectancy ($-.65$)

raised a question about if the two measures capture distinct constructs. Confirmatory factor analysis was conducted to compare the fit of a one-factor model containing all five items with that of the hypothesized two-factor model. The results showed that the two-factor model was significantly better than the one-factor model, $\Delta\chi^2(1, N = 126) = 17.9, p < .01$, providing evidence that the two measures were not identical. Exploratory factor analysis (with maximum likelihood of extraction and varimax rotation) was carried out to examine if the two factor solution corresponded with the scales' composition. It revealed that the three items for risk perception loaded on one factor and the two items for outcome expectancy loaded on another factor (all loadings $> .6$ and all non-loadings $< .5$), indicating separate constructs.

 Insert Table 1 about here

Tests of hypotheses. The posited direct effects (Hypotheses 1, 2, 3, & 5) were examined through correlation analyses. First, as shown in Table 1, risk propensity was positively correlated with willingness to continue writing ($r = .27, p < .01$), supporting Hypothesis 1. Second, risk perception was negatively correlated with the willingness rating ($r = -.45, p < .01$), supporting Hypothesis 2. Third, outcome expectancy was positively correlated with the willingness rating ($r = .67, p < .01$), supporting Hypothesis 3. Fourth, risk perception was negatively related to outcome expectancy ($r = -.65, p < .01$), supporting Hypothesis 5.

Hierarchical regression analysis was carried out to test the hypothesized mediating effects (see Table 2). The first step of each equation included all the control variables (e.g., group of manipulations, personal responsibility, knowledge in proposal writing, age, gender, and job experience). In the second model, risk propensity was added to the equation to examine its direct effects on escalation of commitment. In the third model, risk perception was added to the equation to determine if it mediated the effects of risk perception (i.e., Hypothesis 4). In the fourth model,

outcome expectancy was added to examine whether it mediated the effects of risk perception (i.e., Hypotheses 5 and 6).

 Insert Table 2 about here

After controlling for the effects of the control variables, risk propensity contributed a significant portion of the variance in the willingness rating ($\Delta R^2 = .04, p < .05$), further supporting Hypothesis 1. When risk perception was added to the equation, the R^2 change was significant ($\Delta R^2 = .17, p < .001$), further supporting Hypothesis 2. Model 2 showed that risk propensity was positively related to the probability rating ($\beta = .21, p < .05$). When risk perception was added to the model, this relationship was no longer significant ($\beta = .13, n.s.$, in Model 3), supporting Hypothesis 4. When outcome expectancy was added to the equation, the R^2 change was significant ($\Delta R^2 = .18, p < .001$), supporting Hypothesis 3. Results from Model 3 showed that risk perception was negatively related to the probability rating ($\beta = -.43, p < .001$). More important, when outcome expectancy was added to the model, this relationship was no longer significant ($\beta = -.06, n.s.$), supporting Hypothesis 6.

Discussion

This study demonstrates that all three risk-related variables – risk propensity, risk perception, and outcome expectancy – are significant predictors of escalation of commitment. The results also show that risk perception mediates the effects of risk propensity and that outcome expectancy mediates the effects of risk perception on escalation of commitment. Thus, the model depicted in Figure 1 was generally supported in this study. However, the use of a correlational method creates the problem of drawing causality between variables. In particular, although the causalities between risk propensity and risk perception and that between risk perception and risk-taking behavior have been confirmed by Sitkin and Weingart (1995), there has been no empirical support for the causality

between risk perception and outcome expectancy (i.e., Hypothesis 5). Study 2 was designed to provide stronger support for this hypothesis.

STUDY 2

The aim of Study 2 was to provide evidence that risk perception determines outcome expectancy (i.e., Hypothesis 5) by experimentally manipulating risk perception to be high or low. Here, risk perception was manipulated by varying participants' outcome histories in making similar decisions. Outcome history is defined as the extent to which a decision maker's previous risk-related decisions in similar situations have resulted in successful or unsuccessful outcomes (Sitkin & Pablo, 1992). The Sitkin-Pablo model posits that people with successful (unsuccessful) outcome histories have high (low) risk propensity, which in turn leads to low (high) risk perception when making decisions. The effect of outcome history on risk perception has been supported empirically by results of Sitkin and Weingart (1995). Although the Sitkin-Pablo model posits that problem framing is an immediate determinant of risk perception whereas outcome history exerts its effects on risk perception through risk propensity, I chose to vary outcome history but not problem framing simply because a previous study demonstrated that problem framing had no significant effects on escalation of commitment (Schoorman et al., 1994).

Because this study was intended to give a stronger support for the causality between risk perception and outcome expectancy, it is important to have a manipulation that conceptually varies risk perception but does not have a direct influence on outcome expectancy. As mentioned above, risk perception and outcome expectancy are different from each other in terms of specificity, with risk perception pertaining to a general assessment of a situation and outcome expectancy pertaining to specific actions under the situation. This conceptual difference suggests that whether the manipulation of outcome history directly affects the more general risk perception, as this paper has suggested, or if it affects outcome expectancy, which in turn determines risk perception, depends on

the locus at which outcome history plays a role in the process of making risky decisions. If outcome history plays a role at a general level, then it should theoretically exert its effects on risk perception. In contrast, if outcome history plays a role at an action-specific level, then it should theoretically exert its effect directly on outcome expectancy.

In this study, I manipulated risk perception by varying outcome history because of the empirical findings of Sitkin and Weingart (1995), which show that outcome history influences risk perception through risk propensity. The wording of the present study was highly similar to the wording used by Sitkin and Weingart (1995, see p. 1581). Following Sitkin and Weingart (1995), outcome history “reflects an individual’s overall mental representation of how well he or she has fared in the past in similar situations”. Sitkin and Pablo (1992) explained that “if positive feedback reinforces successful decision makers, leading them to experiment less with alternative strategies over time, then negative feedback received by unsuccessful decision makers is hypothesized to lead to increasing variation in their strategies.” (p. 17). March (1988) has also argued that the tendency to shift to alternative strategies is stronger when outcome history is bad than when it is good. Thus, outcome history, as well as the manipulation used in the present study, has been used to represent a general instead of an action-specific construct. This suggests that the manipulation of outcome history influences risk perception before outcome expectancy, though of course it does not preclude the possibility that outcome expectancy would reciprocally influence risk perception and risk propensity.

Methods

Participants. One hundred and eight Chinese-English bilingual teachers working in twelve secondary schools in Hong Kong voluntarily participated in this study. Their average age was 35.64 (ranging from 22 to 48), with an educational level of an undergraduate degree or above. Forty-one percent of them were males.

Procedure, decision task, and measures. All aspects were the same as those in Study 1 with

four exceptions. First, all participants were assigned to the personally responsible condition. Second, participants were randomly assigned to a high risk perception group or a low risk perception group, and they received different versions of the scenario in which risk perception was manipulated by varying descriptions of the individual outcome history in the way Sitkin and Weingart described (1995; see Appendix B). Third, to simplify the procedure, risk propensity was not measured because the primary concern of this study was the causality between risk perception and outcome expectancy. Fourth, a three-item outcome history manipulation check adapted from Sitkin and Weingart (1995; i.e., “the degree to which successful outcomes have resulted from your decisions like this in the past”, “the extent to which you have analyzed decisions like this correctly in the past”, and “the degree to which your decisions like this in the past are problematic”) was added to the questionnaire ($\alpha = .73$). The manipulation check revealed that the low risk perception group (mean = 4.70, s.d. = .80) gave significantly higher ratings (i.e., more successful) than did the high risk perception group (mean = 3.57, s.d. = .71), $F(1, 106) = 60.2, p < .001$.

Results and Discussion

People in the low risk perception group had significantly lower risk perception (3.65, s.d. = 1.06) than did people in the high risk perception group (4.2, s.d. = .99), $F(1, 106) = 7.79, p < .01$. This indicates that the risk perception manipulation was successful, replicating Sitkin and Weingart’s (1995) results. Outcome expectancy for the low risk perception group (4.67, s.d. = .97) was significantly higher than that for the high risk perception group (3.91, s.d. = 1.13), $F(1, 106) = 14.10, p < .001$. This indicates that risk perception determines outcome expectancy, supporting Hypothesis 5. Furthermore, willingness to continue writing the proposal was higher for the low risk perception group (62.83) than for the high risk perception group (46.11), $F(1, 106) = 16.45, p < .001$. This indicates that risk perception determines escalation, supporting Hypothesis 2.

Hierarchical regression analysis was used to test the hypothesis that outcome expectancy

mediates the effects of risk perception on escalation of commitment (Hypothesis 6). After controlling for the effects of the control variables, risk perception contributed a significant portion of the variance ($\Delta R^2 = .04, p < .05$) in the willingness rating. When outcome expectancy was added to the equation, the R^2 change was significant ($\Delta R^2 = .20, p < .001$). Model 2 showed that risk perception was negatively related to the willingness rating ($\beta = -.26, p < .05$), supporting Hypothesis 3. More important, when outcome expectancy was added to the model, the strength of this relationship was no longer significant ($\beta = .01, n.s.$), indicating that outcome expectancy mediated the effects of risk perception (Hypothesis 6). This full mediation further strengthens the hypothesized causality between risk perception and outcome expectancy.

GENERAL DISCUSSION

The two studies reported in this paper generally support the model depicted in Figure 1b. Results from Study 1 were highly consistent with the notion that in an escalation context, risk propensity and risk perception interrelate in the way the Sitkin-Pablo model posits. Furthermore, this study shows that outcome expectancy mediates the effects of risk perception on escalation of commitment. Study 2 not only replicated the mediating effects, but also showed that risk perception determined outcome expectancy.

Implications for Risk-taking Behavior

The present study provides positive evidence for the Sitkin-Pablo model of risk-taking behavior by demonstrating that the key portions of the model (i.e., the roles of risk propensity and risk perception) can be found in a context that has not been studied before (i.e., in escalation situations). This demonstration is important not only because it specifies the psychological processes of risk-taking behavior, but also because it adds to the cross-situational generalizability of the Sitkin-Pablo model.

In addition, this study also adds to the cross-cultural generalizability of the model. Since it was

proposed by Sitkin and Pablo (1992), their model has been examined only in the context of the United States (e.g., Sitkin & Weingart, 1995). This has led to concerns about the cross-cultural generalizability of the model. Indeed, there has been evidence that risk-taking patterns are culturally bound (Watson & Kumar, 1992; see Weber & Hsee, 2000 for a review). In particular, Chinese or, more generally, Asian decision makers have been shown to be different from their Western counterparts in risk perceptions (Weber & Hsee, 1998). These cultural differences suggest that it is not self-evident that the Sitkin-Pablo model is valid in the Chinese context. The present study presents empirical results that may address this concern. As mentioned in the introduction, the extent to which the Sitkin-Pablo model can be generalized to Chinese decision makers depends on the strength of cushion effects, which vary from situation to situation. Hsee and Weber (1999) found that cushion effects are stronger (i.e., Chinese are more risk-taking than Americans) in the investment domain than in other domains (e.g., making medical and academic decisions). Because this study tested escalation of commitment under an academic setting, the cushion effects might not be too strong to alter the basic pattern of Sitkin-Pablo model. Further research may test whether or not this pattern of results could be found in an investment context.

Another contribution of the present study is that it specifies the role of outcome expectancy in the processes leading to risk-taking behavior. The results show that outcome expectancy fully mediates the effects of risk perception and risk propensity. Those who are high in risk propensity tend to pay attention to positive but ignore negative feedback, which leads to a positively biased risk perception and overconfidence (i.e., inflated outcome expectancy) in taking risky action. Thus, the results of the present study suggest that the Sitkin-Pablo model could be revised by specifying the mediating role of outcome expectancy.

Implications for Escalation of Commitment

One contribution of the present study is its empirical demonstration of the role of risk in

escalation of commitment. As mentioned in the introduction, escalating commitment to failing courses of actions has long been regarded as a type of risky decision-making (Staw, 1997; Whyte, 1986; 1993). However, the role of risk has been ignored in previous escalation research. The present study fills this gap by not only showing that some risk-related variables are significantly related to escalation of commitment, but also by specifying the psychological processes from a risk-taking perspective through which these variables induce escalation of commitment.

Second, the present study suggests that a complete theoretical model of escalation of commitment should include risk as one of its major components. Specifically, previous studies have paid insufficient attention to the role of risk in escalation and simply acknowledged one single risk-related variable, problem framing, as one of the psychological determinants of escalation (Brockner, 1992; Staw, 1997; Whyte, 1986). The present study, however, suggests that the role of risk in escalation of commitment appears to be more complicated than what has been considered. Thus, risk-related variables should be specified and their interrelationships should not be ignored in a complete model of escalation of commitment.

Practical Implications

There are three important practical implications of the present study. First, it identifies the positive role of risk propensity in determining escalation of commitment. This suggests that a firm can intentionally select decision makers based on their level of risk propensity so that it hires those who are likely to fit with the firm's overall business strategy. For example, firms adapting the defender strategy (Miles & Snow, 1978) may select decision makers who are low in risk propensity, whereas firms adapting the prospector strategy may select those who are high in risk propensity. Second, the study demonstrates that assessment of individual risk propensities and risk perceptions and knowledge of individual outcome history could be useful in monitoring and predicting the behaviors of those who are likely to become entrapped under escalation situations. Third, given the

prominent role of risk perception in escalation processes, this study also implies that managers who wish to increase or decrease subordinates' escalation or other risk-taking behaviors can highlight subordinates' outcome history or other factors that determine risk perception.

Limitations and Future Research

The current study has two limitations, which highlight opportunities for future research. First, the mediating effect of outcome expectancy is illustrated only in the escalation context. Future research may examine whether it can be generalized to other risk-taking behaviors. The second limitation is that this study examined escalation behavior of people working in schools. Future research should take samples from other types of organizations to demonstrate the generalizability of the obtained findings.

Moreover, although results are generally consistent with the conceptualization of the Sitkin-Pablo model, there is one exception; that is, risk perception fully mediates the effects of risk propensity in this study. Sitkin and Weingart (1995) also observed a similar full mediating effect of risk perception. These repeatedly observed full mediation patterns suggest that there is a need to refine the Sitkin-Pablo model slightly by removing the direct effects on risk propensity on risk behaviors proposed in the original model. Future research may verify whether or not risk propensity is fully mediated by risk perception.

Conclusion

This paper presented results of a first test of the Sitkin-Pablo model in the context of escalation of commitment. It provided support for the key ideas the model: Risk propensity and risk perception are important measures that determine escalation tendency. It also suggests and provides evidence that outcome expectancy is the immediate determinant of escalation of commitment such that it mediates effects of other factors. Not only did the studies reported in this paper provide empirical evidence of the generalizability of the Sitkin-Pablo model, but they also highlighted a modification

of the model by including outcome expectancy. Thus, this paper provides a conceptual and empirical advancement of the literature of escalation of commitment and risky decision-making.

References

- Arkes, H. & Blumer, C. (1985). The psychology of sunk costs. *Organizational Behavior and Human Decision Processes*, 35, 124-140.
- Baird, I. S., & Thomas, H. (1985). Toward a contingency model of strategic risk taking. *Academy of Management Review*, 10, 230-243.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Brockner, J. (1992). The escalation of commitment to a failing course of action: Toward theoretical progress. *Academy of Management Review*, 17, 39-61.
- Brockner, J., & Rubin, J. Z. (1985). *Entrapment in escalating conflicts: A social psychological analysis*. New York: Springer-Verlag.
- Conlon, E. J., & Park, J. M. (1987). Information requests in the context of escalation. *Journal of Applied Psychology*, 72, 344-350.
- Conlon, D. E., & Garland, H. (1993). The role of project completion information in resource allocation decisions. *Academy of Management Journal*, 36, 402-413.
- Crosini, R. J., & Osaki, B. D. (Eds.). *Encyclopedia of psychology*, vol. 3. New York: Wiley.
- Denes-Raj, V., & Epstein, S. (1994). Conflict between intuitive and rational processing: When people behave against their better judgment. *Journal of Personality and Social Psychology*, 66, 819-829.
- Douglas, M. (1985). *Risk acceptability according to the social sciences*. New York: Russell Sage Foundation.
- Epstein, S., Pacini, R., Denes-Raj, V., & Heier, H. (1996). Individual differences in intuitive-experiential and analytical-rational thinking styles. *Journal of Personality and Social Psychology*, 71, 390-405.
- Ewart, C. K. (1995). Outcome expectancy and recovery from heart attack. In J. E. Maddux (Ed.), *Outcome expectancy, adaptation, and adjustment: Theory, research, and application*. New York: Plenum.
- Highhouse, S., & Yuce, P. (1996). Perspectives, perceptions, and risk-taking behavior. *Organizational Behavior and Human Decision Processes*, 65, 159-167.
- Hsee, C. K., & Weber, E. U. (1999). Cross-national differences in risk preference and lay predictions. *Journal of Behavioral Decision Making*, 12, 165-179.
- Jackson, S. E., & Dutton, J. E. (1988). Discerning threats and opportunities. *Administrative Science Quarterly*, 33, 370-387.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 263-291.
- MacCrimmon, K. R., & Wehrung, D. A. (1990). Characteristics of risk taking executives. *Management Science*, 33, 422-435.
- Maddux, J. E. (1995). *Outcome expectancy, adaptation, and adjustment: Theory, research, and*

- application*. New York: Plenum.
- Maddux, J. E., Norton, L. W., & Stoltenburg, C. D. (1986). Self efficacy expectancies, outcome expectancies and outcome value: Relative effects on behavioral intentions. *Journal of Personality and Social Psychology*, *5*, 783-789.
- March, J. G., & Shapira, Z. (1987). Managerial perspectives on risk and risk-taking. *Management Science*, *33*, 1404-1418.
- McGlothlin, W. H. (1956). Stability of choices among uncertain alternatives. *American Journal of Psychology*, *69*, 604-615.
- Miles, R. E., & Snow, C. C. (1978). *Organizational strategy, structure, and process*. New York: McGraw-Hill.
- Moon, H. (2001). The two faces of conscientiousness: Duty and achievement striving in escalation of commitment dilemma. *Journal of Applied Psychology*, *86*, 533-540.
- Rodin, J. (1990). Control by any other name: Definitions, concepts, and processes. In J. Rodin, C. Schooler, & K. W. Schaie (Eds.), *Self-directedness: Cause and effects throughout the life course* (pp. 1-17). New Jersey: Hillsdale.
- Rubin, J. Z. (1981). Psychological traps. *Psychological Today*, *15*, 52-53.
- Pacini, R., & Epstein, S. (1999). The relation of rational and experiential information processing styles to personality, basic beliefs, and the ratio-bias phenomenon. *Journal of Personality and Social Psychology*, *76*, 972-987.
- Scheier, M. F., & Carver, C. S. (1987). Dispositional optimism and physical well-being: The influence of generalized outcome expectancies on health. *Journal of Personality*, *55*, 169-210.
- Schoorman, F. D. (1988). The escalation bias in performance appraisals: An unintended consequence of supervisor participation in hiring decisions. *Journal of Applied Psychology*, *73*, 58-62.
- Schoorman, F. D., Mayer, R. C., Douglas, C. A., & Hetrick, C. T. (1994). Escalation of commitment and the framing effect: An empirical investigation. *Journal of Applied Social Psychology*, *24*, 509-528.
- Sitkin, S. B., & Pablo, A. L. (1992). Reconceptualizing the determinants of risk-taking behavior. *Academy of Management Review*, *17*, 9-39.
- Sitkin, S. B., & Weingart, L. R. (1995). Determinants of risky decision-making behavior: A test of the mediating role of role perceptions and propensity. *Academy of Management Journal*, *38*, 1537-1592
- Staw, B. M. (1976). Keep-deep in the big muddy: A study of escalating commitment to a chosen course of action. *Organizational behavior and Human Performance*, *16*, 27-44.
- Staw, B. M. (1981). The escalation of commitment to a course of action. *Academy of Management Review*, *6*, 577-587.
- Staw, B. (1997). The escalation of commitment: An update and appraisal. In Z. Shapira (Ed.), *Organization decision making* (pp. 191-215). New York: Cambridge University Press.

- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, *211*, 453-458.
- Thaler, R. H. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior and Organization*, *1*, 39-60.
- Watson, W. E., & Kumar, K. (1992). Differences in decision making regarding risk taking: A comparison of culturally diverse and culturally homogenous task groups. *International Journal of Intercultural Relations*, *16*, 53-65.
- Weber, E. U., & Hsee, C. K. (1998). Cross-cultural differences in risk perception, but cross-cultural similarities in attitude towards perceived risk. *Management Science*, *44*, 1205-1217.
- Weber, E. U., & Hsee, C. K. (2000). Culture and individual judgment and decision making. *Applied Psychology: An International Review*, *49*, 32-61.
- Weber, E. U., Hsee, C. K., & Sokolowska, J. (1998). What folklore tells us about risk and risk taking: Cross-cultural comparisons of American, German, and Chinese proverbs. *Organizational Behavior and Human Decision Processes*, *75*, 170-186.
- Wehrung, D. A., Lee, K., Tse, D. K., & Vertinsky, I. B. (1989). Adjusting risky situations: A theoretical framework and empirical test. *Journal of Risk and Uncertainty*, *2*, 189-212.
- Whyte, G. (1986). Escalating commitment to a course of action: A reinterpretation. *Academy of Management Review*, *11*, 311-321.
- Whyte, G. (1993). Escalating commitment in individual and group decision making: A prospect theory approach. *Organizational Behavior and Human Decision Processes*, *54*, 430-45
- Yates, F. J., & Stone, E. R. (1992). The risk construct. In J. F. Yates (Ed.), *Risk-taking behavior*. New York: Wiley.

Table 1.

The means, standard deviations, and zero-order correlation of the variables measured in Study 1

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Probability of continuing writing the proposal	54.13	24.27	--									
2. Risk propensity	3.91	.72	.27**	--	--							
3. Risk perception	4.29	1.09	-.45**	-.21*	--	--						
4. Outcome expectancy	4.03	1.18	.67**	.32**	-.65**	--						
5. Age	35.08	5.08	.11	-.11	-.01	.00	--					
6. Gender (0 = female, 1 = male)	.30	.46	.06	.01	.11	.07	.07	--				
7. Group (0 = non-responsible, 1 = responsible)	.49	.50	.21*	.10	.07	.06	.04	.15	--			
8. Personal responsibility	4.29	1.25	.28*	.27*	-.10	.29**	-.01	.09	.42	--		
9. Knowledge in proposal writing	3.93	1.01	.19*	.14	-.12	.25	.06	-.04	.09	.10	--	
10. Job experience	11.82	5.76	.08	-.14	.06	-.08	.90**	.06	.03	-.07	.04	--

Note: * < .05, two-tailed; ** < .01, two-tailed

Table 2
 Results of hierarchal multiple regression analyses in Studies 1& 2

Variable	Study 1				Study 2		
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3
Control variables							
Group of manipulations ^a	.10	.10	.15†	.16*	-.37***	-.30**	-.19*
Personal responsibility	.22*	.17†	.13	.03	-.08	-.15	-.10
Knowledge of proposal writing	.15†	.12	.08	-.00	.23**	.08	.02
Age	.12	.11	-.02	-.01	.25	.24	.27
Gender (0 = female, 1 = male)	.01	.01	.06	-.00	-.01	-.04	.02
Job Experience	-.03	.00	.13	.23	-.11	-.13	-.12
Study variables							
Risk propensity		.21*	.13	.06		.	.
Risk perception			-.43***	-.06		-.26*	.01
Outcome expectancy				.62***			.57***
ΔR^2		.04	.17	.18		.04	.20
F change		5.3*	28.53***	41.76***		4.84*	35.76***
Overall model R^2	.12	.16	.32	.50	.23	.26	.46
Adjusted R^2	.08	.11	.28	.46	.18	.21	.42
Overall model F	2.7*	3.2**	6.97***	13.00***	4.95***	5.10***	10.48***

Note: † < .05, one-tailed; * < .05, two-tailed; ** < .01, two-tailed; *** < .001, two-tailed; ^a In Study 1 0 = non-responsible and 1 = responsible; in Study 2, 0 = low risk perception and 1 = high risk perception

Figure Caption

Figure 1. (a) The relationship between risk propensity, risk perception, and risk-taking behavior according to the model proposed by Sitkin and Pablo (1992). (b) The working model proposed by the present study.

Figure 1a

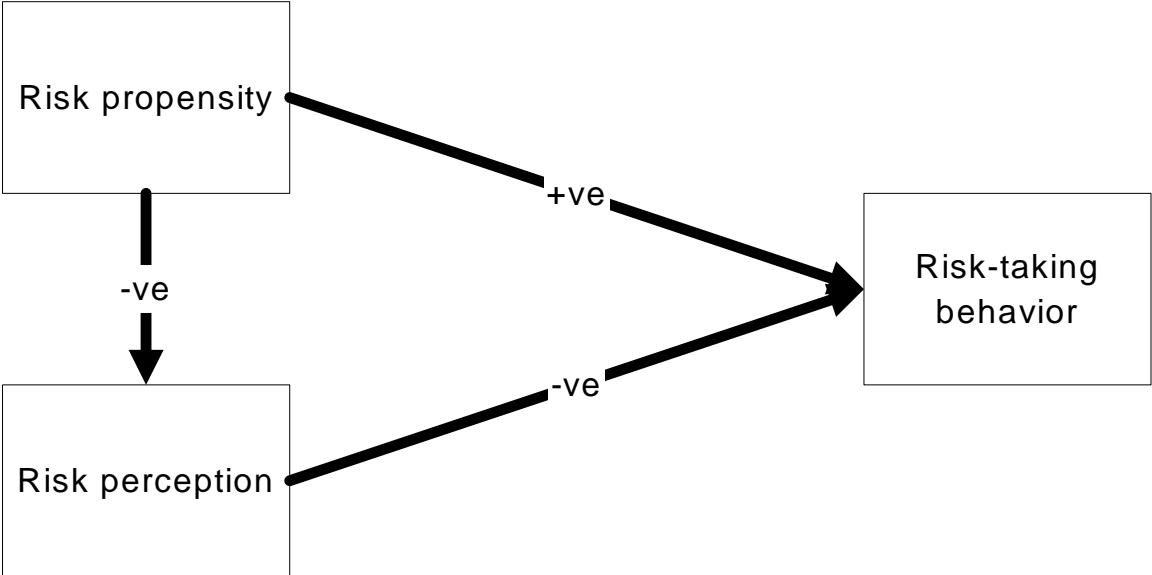
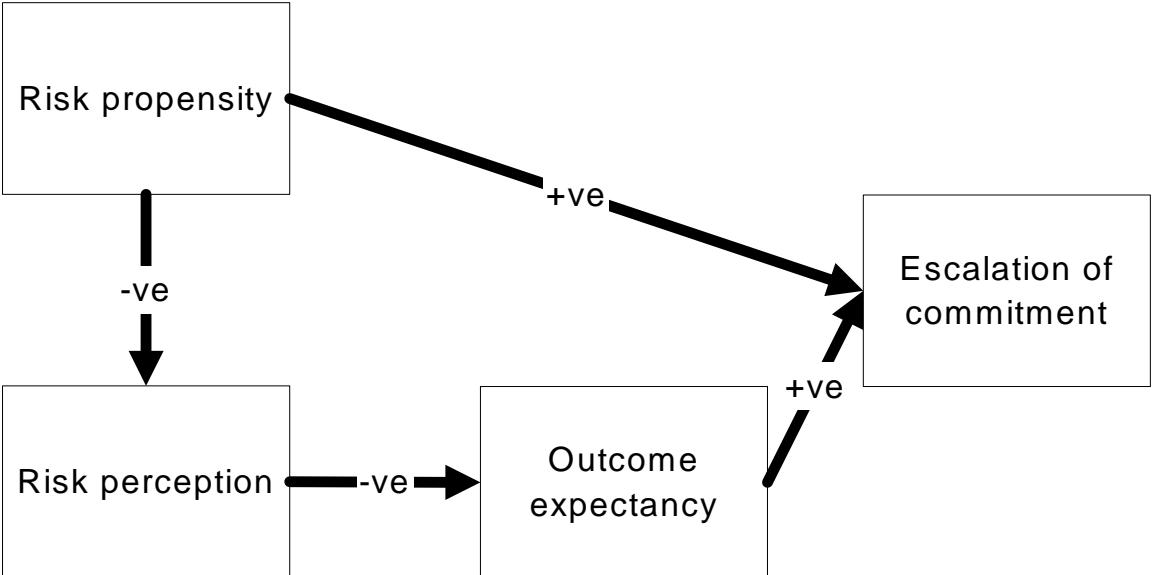


Figure 1b



Note: -ve indicates a negative causal relationship and +ve indicates a positive causal relationship.

Appendix A

The scenario used in Study 1 is as follows. Information in parentheses was presented to participants in the personally non-responsible condition only.

Last year you (Frank, your colleague) had a plan to organize a jazz-dancing program in school and would apply for the QEF this year for its establishment. You (He) have (has) given many efforts for preparation, including information collection, co-ordination, attitude survey within school, and meeting with colleagues and students, etc.. (Frank retired last year and you were assigned to follow-up the jazz-dancing program).

Right before you began to write the proposal, the QEF officer gave a public announcement, which said that it had funded too many jazz-dancing programs last two years (e.g., over 150 programs) and further funding to similar programs would be highly selective this year. The decision you need to make now is to either abandon the jazz-dancing proposal and write another proposal that are more likely funded or continue writing the same proposal.

The following paragraph was added at the end of scenario in Study 2. For the low risk-perception group:

You have had a moderate training for and experience with this type of decision. Your previous decisions have been *largely successful* (i.e., your proposals are often funded under highly competitive conditions) and so the outcome of the above decision will not have serious consequences. You feel confident because of the success of those decisions you have made in the past.

For the high risk-perception group:

You have had a moderate training for and experience with this type of decision. Your previous decisions have been *largely unsuccessful* (i.e., your proposals are never funded under highly competitive conditions) and so you have always had a nagging worry that your poor "track record" could eventually have more serious consequences. You feel uncertain because of lack of success of those decisions you have made in the past.