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Cross-Cultural Risk Behavior in Financial Decisions and the Cushion Hypothesis

Jin Tan

Claremont McKenna College

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CLAREMONT McKENNA COLLEGE
CROSS-CULTURAL RISK BEHAVIOR IN FINANCIAL DECISIONS AND THE
CUSHION HYPOTHESIS

SUBMITTED TO
PROFESSOR DIANE F. HALPERN

AND
DEAN GREGORY HESS

BY
JIN TAN

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Cross-Cultural Risk Behavior in Financial Decisions and the Cushion Hypothesis

Jin Tan

Claremont McKenna College

Department of Psychology

Abstract

92 students from a Southern California liberal arts college and two Beijing universities participated in an online questionnaire. Their cultural tendencies (i.e. level of collectivism and perception of family support) and responses to hypothetical investment scenarios were observed. Participants were asked to provide the amount they would invest in each scenario as well as a risk safety rating. The Chinese respondents reported higher cushion and collectivism scores than the Americans. Furthermore, the Chinese sample offered more money for the three riskiest scenarios; they also rated three scenarios safer than the Americans did. The cushion and collectivism scores were not found to predict risk appraisal and amount invested in the scenarios. The results suggest that cultural biases may have an impact on the financial risk-taking behavior of different peoples, but other cultural variables and situational determinants may play an equally influential role in affecting risk perception and investment behavior.

We live in a globalized and increasingly complex world, overloaded with advice on how to deal with risk. In essence, almost all decisions involve uncertainty because they pertain to future events, and risk is often the critical unknown variable. To accommodate, we utilize cognition and emotions to calculate risk. From choosing the right graduate school to outlining a wise 401K while working abroad, we face a tremendous diversity in risk. As the world becomes flatter and cities diversify in culture and ethnicity, perceptions and reaction to risk have far-reaching implications for societies that are frequented with visitors from a variety of cultures. The present study investigates the presence of systematic cross-cultural differences in risk perception and preference. This topic is of both theoretical and practical significance; its empirical results build upon studies on interpretation of risk attitudes (Kahneman & Tversky, 1979) and cross-cultural behavior (Triandis, 1993). The findings provide key support for the assertion of a positive and active relationship between certain cultural traits (i.e. family support, close interpersonal relationships, and financial prudence).

In the last two decades, cross-cultural psychology and risky decision-making behavior have respectively gained higher profiles in psychology. The rise in popularity of these two topics is unsurprising, given the increase in cross-cultural interactions resulting from the economic and political ascendancy of China and other developing nations. When high-stake negotiations take place between the West and the rest of the world, differing cultural interpretation of risk can have a crucial impact on decision outcomes. However, only a few researchers have conceptualized and examined the intersection of culture and risky decision-making. Douglas and Wildavsky (1982) stressed the important influence of culture on both the perception of risk and its acceptability across discrete

individuals. Unfortunately, the bulk of research in cross-cultural perception, acceptance, and reaction to risk has merely assumed national differences in behavior and cultural profiles. For example, when researchers find differences in perceived risk for the same given scenario for a group of Chinese and Americans, they rely on a rather common sense explanation in the discussion. Their rationale is that since China has always been known to be an extremely collectivistic nation-culture, the observed differences can be attributed to the independent variable (nationality-membership). The underlying processes that may explain cross-cultural differences in risk preference, perception, and interpretation are not included in the majority of cross-cultural risk research. Research based on theoretical models that can explain and expand upon current cross-cultural research is needed. Construction of the paradigm should reflect the link between culture and risk. Specifically, there ought to be particular attention on cultural variables such as collectivism and individualism on individuals' interpretation and evaluation of risk (Triandis, 1993). As a person encounters a potentially risky situation, his attitudes and beliefs—heavily influenced by culture—serve as a guiding anchor for his reactions. To construct a model-based examination of the culture-risk relationship, one must explore the underlying processes and extensive literature that delineate distinct cultural dimensions and risk behavior.

Risk

There is an extensive literature in both psychology and economics that has analyzed and defined risk, but a classic study provides the comprehensive and novel exposition of the concept. Economists Kahneman and Tversky (1979) applied their

exceptional Prospect Theory to better understand and outline the processes of human risk behavior. Their overarching proposal is that risk aversion is the predominant reaction to risk. As individuals begin their appraisal of the possible gains and losses of risky situations, they choose the option that has the prospect of highest value. This value is a derivative of either discounting (uncertainty of gain or probability in potential losses) or premiums (desirability of certain gains). In other words, there exists an overarching utilitarian construct that guides individual appraisal and reaction to risky situations. For most of the population, the predominant risk behavior is risk aversion: generally consistent preference for sure or highly probable gains to a loss of equal expected value. A loss for example, carries a steeper discount than the premium given for gains. In addition, certainty intensifies the averseness of losses and the desirability of gains. Consequently, individuals are risk-seeking in losses and risk-averse in gains; we want to avoid a sure loss as much as possible while clinging on to definite gains. Kahneman and Tversky titled the behaviors as the “certainty effect” and the “reflection effects”, or loss aversion. The sharp discrepancy between weights attached to sure gains/losses and probable gains/losses are especially prominent in managerial and major decision-making processes. The researchers assert that when the choice becomes more debatable, prudence will favor certainty effect among managers. Furthermore, people are naturally reluctant to accept responsibility when there is a loss, thus a small increase in probability of an unfavorable outcome is sharply discounted. In addition, decision makers become more risk averse when they expect their choices to be reviewed by others (Kahneman & Tversky, 1979). Thus, the emphasis of risk behavior and perception theory is that individuals do not use a rational approach to approach and react to risk.

Decades after his original research, Kahneman laid out a more thorough construal of risk aversion. He suggested that human beings have unjustified optimism and unreasonable risk aversion (Kahneman & Lovallo, 1993). The mechanism behind the behavior is a “narrow decision frame”: decisions are considered in singularity, often isolating the current scenario from other choices that may be pending in the future. Thus, people have a propensity to anchor forecast on a distinct scenario rather than past results, leading to over-optimism. The inability to pool risks also renders individuals overly timid since they view a single risky prospect as extreme. According to this view, risk appraisal is more of an intuitive process than a rational one. The persistent avoidance of variance and variability distorts our analytical thinking when it comes to risk perception, evaluation, and response.

Concurrent to the work of Kahneman and Tversky, Markowitz (1959) developed an original quantitative conceptualization of risk behavior. Although he is primarily an expert in corporate finance, Markowitz presented an insightful analysis of human decision-making in general, with special regards to the treatment of uncertainty (Markowitz, 1952). He believed that individuals viewed risk as a compromise between the choice’s return-value (V) and its risk (R) and assumed that decision makers seek to minimize the risk of a portfolio. Markowitz proposed that people’s willingness to pay (WTP) for an investment is a function of its value, risk rating, and its b coefficient which indicates individual preferences for a given level of risk. This coefficient serves as a key weighting variable that accounts for the impact of cultural biases as discussed later in the study.

$$\mathbf{WTP(X) = f(V(X), R(X)) = V(X) - bR(X)}$$

The equation describes Willingness to Pay as being influenced by the amount of utility value $V(X)$ minus Risk $R(X)$. $V(X)$ simply represents how much an option is worth to the individual facing the decision. For example, if an individual is browsing a real estate magazine for a potential investment in a home, the price tag of the listed property is the $V(X)$. The b coefficient is an evaluation of risk preference; for the same given level of Risk, individuals may have different attitudes and subsequent behavior. Some people may inherently prefer a higher-variance option over a lower-variance option of equal expected value because they have a positive attitude towards risk. An example: a downtown Detroit condo is listed at \$250,000. The downtrodden nature of the city and its economy renders a high risk value $R(X)$, which means that there is some significant probability that the property will decline in value $V(X)$. However, if an individual investor likes to take chances, he or she would have a lower b , or a higher tolerance for increased risk that discounts the inherent risk value $R(X)$. This in turn would temper the risk aversion intrinsic in most risk perception and behavioral conditions. Subsequently, the Willingness to Pay for this project would be higher than another person with a lower risk tolerance.

The Markowitz theory also has important implications with regards to the potential to maximize utility from cooperation and “trading” risks. An understanding of the risk appraisal process and its variability across different individuals enable more accurate predictions of opponents during negotiation and of partners in collaborations. For example, if two parties from the United States and Korea have stalled during a

negotiation of a business opportunity, it may be that they view the same investment equally in terms of value but different in terms of Risk $R(X)$. Or, the parties may view the investment similarly in value and risk but one side may simply be more risk-averse (different in b). If the differences in perception of $R(X)$ are the driving force behind the impediment, then an effective solution should involve exploration of more cognitive, rational methods so that $WTP_a(X) = WTP_b(X)$. For instance, monetary compensation through side payments or contractual modifications might work best to address differences in $R(X)$. On the other hand, differences in risk preference (b) may be addressed by appealing to affective responses and emotions, since it would be more difficult to logically persuade someone to change their longtime personal preferences for risk. This example shows that the path toward efficient risk appraisal and problem-solving depends crucially on knowing how different individuals view components of risk.

In real life, individuals often do not conform to the theoretical frameworks projected by Markowitz or Kahneman. Slovic, Fischhoff, and Lichtenstein (1986) found that people's perceptions of risks of hazards often have little to do with possible outcomes and probabilities. Instead, individuals harbor systematic biases—such as overweighing risk associated with infrequent and catastrophic events and discounting the risk of familiar activities. Furthermore, cultural frameworks can lead to systematic bias that predisposes individuals to react and perceive risk in a certain manner.

Culture

One of the most significant differences among people is their cultural background. Research in cross-cultural differences has been steadily growing in quantity, mainly due

to the remarkable number of interactions between the major economic powers. Research on cultural profiles, however, dates far before the rise of China, India, and globalization. From theoretical perspectives to field research of cultural products, such as advertising, work style, and child-rearing, psychologists find persistent differences in the way different cultures adapt to and change the world around them.

The definition of culture has been controversial. Although there exists an overabundance of variations, most academics tend to agree that *culture* requires the presence of shared elements—whether they are attitudes, expectations, language, political structure, or norms—and the transmission from one generation to the next (Triandis, 1993). The study of cultural differences aims to identify *cultural profiles* in which peoples are more or less similar in values and behavior. In essence, a cultural profile consists of an arrangement of shared culture organized around a central theme identifiable in a geographic region or specific group.

The current study observes the cultural influences on risk perception and preference for individuals from China and the United States, which are two nations that have some of the most dissimilar cultural profiles. Specifically, the United States is regarded as one of the most *individualistic* cultures; whereas, China is a prototypical example of a historically *collectivistic* culture (Tse et al., 1988; Oyserman, Coon, & Kemmelmeier, 2002). Two pioneer cross-cultural psychologists, Hofstede (1980) and Triandis (1972; 1993) gathered valuable data that spanned across continents and made insightful conclusions regarding the cultural chasm between collectivism and individualism.

On a broader scale, *collectivism* is organized around the importance of the collective—family, co-workers, tribe, nationality, and race (Triandis, 1996). In contrary, *individualism* primarily focuses on the role of the individual in social life. However, a more comprehensive definition of collectivism and individualism requires analysis of the antecedents, defining attributes, and consequences of such cultural profiles.

In general, there appears to be a gradual shift from collectivism to individualism in many parts of the world. Affluence is found to be the strongest determinant of this change in cultural orientation. Hofstede (1980) found correlations of .80 between the “individualism” of a nation and gross national product per capita. As a key antecedent to individualism, affluence is generally associated with industrialization and social complexity. The resulting diversity of occupations, functions, and organizations offers individuals more opportunities to venture farther than their predecessors in traditional agrarian societies. One instance, the socioeconomic ascendancy of peoples has increased access to individualistic, Western mass media. Certain norms, such as marrying for love or pleasure rather than family duty and entrepreneurship have been absorbed by formerly collectivistic societies. In essence, however, the most fundamental impetus of affluence is the reduction of the relevancy for group goals. In collectivistic societies, individuals depended upon the group arrangement for welfare; food, shelter, and survival were most facilitated by group cooperation. With globalization and the subsequent job and education opportunities, literacy rates and language aptitude of many previously agrarian societies have had exceptional growth. As a result, many men and women have found novel ways to support themselves through pursuing education and exploring the world beyond their homesteads (Triandis, 1993).

In addition to wealth, social and geographic mobility also contribute to individualism; congregations of international peoples create hubs of heterogeneity in norms and language. With the unprecedented reach of international students and businesspeople, people from even remote areas of the globe have been interacting with strangers from other cultures. As a result, the monolithic dominance of a single set of values has been gradually tempered. Lastly, the economic organization of a nation also influences the degree of individualism. For instance, capitalism and free markets often breed individuals who compete fiercely to rise up in a stratified society. Globalization exposes the domestic populace of a collectivistic nation to the trappings of individual success, fame, and material abundance.

Collectivism is usually found in more homogenous societies that have a history of relative isolation. In these societies, the majority of population rarely travels extensively outside the epicenter, and outsiders are held with certain suspicion and reservation. Furthermore, this cultural profile is more common in societies that are more economically undeveloped. For example, agriculture is often found to be the dominant economy in collectivistic groups. Consequently, large families and communal sharing—traits of collectivism-- are essential for survival in agrarian societies.

Despite the preponderance of values and norms that distinguish collectivism and individualism, the defining attributes outlined by Triandis (1993) and Triandis, McCusker, and Hui (1990) are relevant for judging cultural differences in risk behavior. Generally speaking, individualism is very high in the United States, Britain, and Western Europe. Contrasting collectivism is the main orientation in Africa, Asia, and Latin America (Triandis, McCusker, and Hui, 1990).

Meaning of the Self and Perception of Others. Collectivists see themselves as an integral component of their larger group. Thus, identification in collectivism is mostly a derivative of the collective character. Triandis (1990) found that when asked to complete sentences that began with “I am...”, collectivists often gave answers that refer to a group—for example, “I am a son, I am a Roman Catholic” etc. Individualists place much more value on autonomy and uniqueness, responding with more individual characteristic responses, such as “I am caring” or “I am a pilot.”

Observations by Lebra (1984) provide revealing portraits of the differences in self-identification between collectivists and individualists. When Lebra (1984) worked on compositions of life histories of Americans and Japanese, the Americans predominantly used the self as the figure and all other information as “the background.” When she interviewed the Japanese women, most of the information was regarding relationships and almost nothing about the idiosyncrasies of the self. It is also likely that collectivists, for all of their focus on group other than the individual members, perceive groups as more homogeneous than do individualists. Iwao (1993) found that the Japanese are more likely to perceive the opposite sex as more homogeneous than do Americans, a fact that Iwao asserted as having some implication for the divergent divorce rates of the two nations. A spouse who is dissatisfied with her husband is less likely to want a divorce if she attributes the undesirable traits to characteristics of the gender category rather than personal attributes. In other words, individualistic individuals are more likely to engage in fundamental attribution error and undervalue or ignore the latent reasons behind the actions of an individual. Collectivists are more likely to assume that the person engaging in a certain behavior is doing so because of his or her membership to a certain group.

Structure of Goals. If there is a discrepancy between the individual and group goal, collectivists defer to the in-group directive. Role relevant goals contribute one of the main fabrics of goal-setting in a collectivistic society. For example, individuals living in a collectivistic society would assume a multitude of roles and pursue role-dependent goals that facilitate that specific relationship or domain. For instance, social loafing occurs with increased frequency among idiocentric or individualistic peoples. Earley (1989) found that when a person's output is not clearly tangible and detectable by others, if there are n people doing an additive job (e.g. digging a ditch), the output is commensurate to the n size and subsequently reduced. Earley did not observe this "social loafing" among collectivists in China when they worked together; the internalized social norms regarding the importance of the final group outcome contributed toward the equivalent per capita output. Thus, as long as the task is important and meaningful to the group and that the group is important, collectivistic individuals would be more likely to work hard in performing their allocated duty without regard to the visibility of their per capita contribution.

One of the most distinctive features of collectivism is the distribution of resources to in-group members. In sharp contrast to the products of individualistic societies (i.e., capital markets, banks, and private property), collectivist communities often have a shared fund to be allotted to each member based on equity in need (Triandis, 1995). For example, Korean villages and Chinese villages often have a village "pot" that will receive contribution from each member monthly. Then, at the end of the month, the family that has the more dire need of the money is eligible to the entire fund for discretionary purposes. Trust is endowed upon all because the pot is seen as a community goal

furthering harmony and support. Thus, the individual is treated as a contributor toward the larger social goals of the community; in return, he or she is entitled to the support of the collective goal.

Behavior as a function of norms. Individualists experience cognitive dissonance when they conform to the group norm but feel different internally. They habitually give more weight to attitudes as determinants of social behavior. In contrast, collectivists experience far less dissonance and refer to norms when interacting in society. The reason being is that social norm acceptance is a hallmark trait of the collectivistic individual. As a result, collectivist cognition is more context dependent, and communication is a derivative of the immediate social environment and tends to be more indirect (Triandis, 1995). If one has been to a gathering of Chinese families at a restaurant, the common occurrence would be the fighting for the bill near the end of the meal. (These fights could become rather intense.) It is not that every discrete Chinese family is magnanimous or eager to demonstrate wealth; collectivistic Chinese individuals gauge the situation and refer to the cultural norm – such as fighting for the bill – as guidance for the appropriate action.

Relationship Functions. Individualists have a much more rational approach to social relationships. They often utilize a cost-benefit analysis when deciding to stay or exit an existing relationship; the treatment of social capital is almost entirely instrumental (Triandis, 1993). For instance, a highly individualistic approach to relationships is the network map (as taught by some major organizational behavior courses): one is to label each and every acquaintance and friend by their occupation and draw lines to indicate

level of association. Then, network analysis is performed to analyze the overall “efficiency” of one’s relationships; the suggestion is to maintain periphery-level contact with each “type” of occupation to maximize utility of one’s networks. In contrast, collectivists believe in life-long relationships that are founded upon family, community, and reciprocity. The expectation that one’s family or circle of friends would assist in times of difficulty remains a strong source of pride and emphasis amongst collectivists. In addition, collectivists often engage in practices that ensures the survivability and prosperity of one’s close associates. In a study that included Canadian, Hong Kong, and Chinese executives, Tse, Lee, Vertinsky, and Wehrung (1988) observed the actual business decisions made by these individuals in their international and domestic markets. The Chinese and Hong Kong businessmen’s values of saving face, long-term exchange relationships, restricted competition, and conservative views are well reflected in their recorded market entry and product placement decisions.

It is worth noting, however, that all of us carry both individualistic and collectivist tendencies. Predispositions can be activated by different situations. Trafimow, Triandis, and Goto (1991) demonstrated that individuals can be made temporarily collectivist or individualist in the laboratory setting. The participants were asked to list factors that made them different from or similar with their family members and friends. There was a significant effect of this manipulation with regards to the type of responses elicited from the participants in the subsequent test of collectivism/individualism. The American students gave 7% collective self-responses after receiving “think of what makes you different” instructions, whereas the same students gave 23% collective self-responses when primed with “think of what makes you similar” questions. Hence, the concept of

individualism-collectivism is a concept based on a spectrum, not a dichotomous entity. When a particular group membership important to an individual is threatened, all humans have the capability to become collectivists. For example, when the United States was attacked on September 11th, the surge in patriotism, collectivism, and group-norm thinking was highly visible. As such, there is no fundamental reason to assume an inherent connection or discontinuity between individual and collective representations of these themes; it is important to recognize that each culture allows for individual variation.

Cultural profiles establish a host of consequences ranging from socialization of children, proper nonverbal signals at a tailgater on the highway, and attitudes toward risk. Douglas and Wildavsky (1982) conceptualized the Cultural Theory of Risk to explain the role of culture on individual risk perception and behavior. The theory emphasizes the process by which social organization and culture endow individuals with perceptions that reinforce those structures in competition against newer alternatives. Accordingly, the Cultural Theory of Risk asserts that culture and affiliated behavior can be characterized by the group-grid scheme. A “high group” cultural way of life exhibits a high degree of collective control, whereas a “low group” individual prides himself or herself on self-sufficiency. A “high grid” way of life is characterized by conspicuous and durable forms of stratification in roles and authority, whereas a “low grid” one reflects a more egalitarian position. Synthesis of the group-grid functions would produce expected fears and risk attitudes. For instance, Douglas and Wildavsky (1982) found that a “low grid, high group” individual would have lower tolerance of environmental risk and actively restrict commercial behavior productive of inequality. Conversely, a “low group, high grid” would fear anarchy and lack of social structure.

Specifically, collectivism and individualism have a definitive impact on how peoples view and react to risk. Dake (1991) corroborates Douglas and Wildavsky (1982) to stress that individuals choose what to fear in order to support their way of life, resulting in a selective attending to certain kind of dangers. For instance, collectivists would fear attacks on the prevalent norms, whereas individualists would loathe shakedowns of free enterprise (Dake, 1991). Adherence to a certain tradition of social relationships generates a unique way of looking at the world, and this deeply held worldview legitimizes a corresponding type of appraisal (Dake, 1991). Individuals, not cultures, assess and respond to risk. However, their culture provides a collectively held set of customs and meanings that are internalized by the individual, becoming part of his or her personality and cognition. For case in point, Xiao and Wang (2009) found that individual risk preferences were intimately related to both discrete personality traits and cultural precedents. The transactions between risk appraisal and behavior are guided, in many degrees, by the ethos of the source culture. Hence, culture is essentially an orienting disposition toward risk at the individual and the collective level.

Early Studies on Cross-Cultural Differences in Risk Behavior

Research on cross-cultural risk taking began with early studies examining the modes of decision-making and probability judgment. One of the consistent results depicts overconfidence on the part of East Asian participants in probability studies involving everyday scenarios (Yates, Lee, & Bush, 1997). Psychologists initially attributed this brazen attitude toward risk to divergent modes of decision-making. Specifically, they estimated the source to be the distinct cultural profiles of the

participants. Weber and Hsee (2000) outlined a taxonomy of different modes of decision-making to contrast the collectivistic category-based decision making to the analytical mode adopted by individualists. The usage of stereotypes, folk wisdom, and precedents permeate decision-making processes of the collectivism society. By contrast, individualistic societies more frequently utilize logical and rational processes such as cost-benefit analysis, and SWOT analysis (Strength, Weakness, Opportunity, Threat). Individualistic societies also regard decisions in a more discrete fashion, meaning that they are less likely to base their current decision upon past outcomes (Nisbett, Peng, Choi, & Norenzayan, 2001). Therefore, there is extensive research delineating the difference in decision-making and systems of thought between East Asians and Western individuals.

Zhang (1992) proposed that the Chinese education system emphasizes student compliance to established norms and models. As a result, cognitive processes depend upon a role-based and case-based retrieval; expectations and establishment overrides idiosyncrasy. Based on Zhang (1992)'s work, Yates and Lee (1996) later suggested that the East Asian treatment of risk is unique in its reliance on folk wisdom-precedents, which often corroborate collectivistic values such as family, harmony, and interdependence (Yates and Lee, 1996).

In the late 1990's, several researchers conducted more extensive international sampling of risk attitudes and its antecedents. Slovic (1999) found that people with less trust in social institutions harbored more negative affective response to risk, but it could be offset by the boost in informal support from family and close networks. Bontempo et al. (1997) found systematic national and cultural differences in people's perception of risky financial assets (riskiness appraisal of 0-100). Specifically, Bontempo found a

persistent preference of collectivists to offer more money on the random gambles involving hypothetical sums of money. Those coming from individualistic societies chose to offer little for risky gambles and more frequently zero sums for the highly risky scenarios. However, the study relied upon a small, insufficient sample and failed to achieve statistical significance in their results.

The Impact of Culture on Risk Perception: Using Cultural Products

Despite its pragmatic appeal, cross-cultural differences in risk taking have not received serious consideration in psychology research. Previous investigations failed to distinguish cultural and situational factors that may impact risk appraisals. Instead, many simply assumed that a nation-group was collectivistic or individualist. For instance, the Bontempo et.al (1997) study did not conduct an examination into whether the Chinese sample was collectivistic or that the American sample was individualist. These two orientations are assumed with verification.

Researchers from the University of Chicago and Ohio State University sought to elucidate the culture-risk relationship by studying cultural products, Individualism-Collectivism (IND-COL) scales, and realistic investment scenarios. Hsee and Weber (1998) looked to cultural proverbs to determine a culture's impact on risk. They proposed that if national differences in some behavior are the consequence of longstanding differences in cultural values rather than in current political economy, they should also be reflected in cultural products such as proverbs. The authors studied the proverbs of three cultures: China, Germany, and United States. According to an established measure of collectivism, these cultures range from very collectivistic to highly individualistic,

respectively (Hofstede, 1980). Proverbs were gathered from anthologies from each of these three nations and rated by Chinese, German, and American raters in accord with individualism and collectivism. A significantly higher proportion of Chinese and German proverbs offered warnings against social risk, while the United States cultural products focused on financial risk. Social risk is defined as the likelihood to damage an existing relationship while financial risk involved a losing either material goods or money. However, Chinese proverbs were rated as to be providing greater risk-taking advice than both American and German proverbs. In addition, regardless of the cultural origin of the proverb, Chinese raters perceived the same proverbs to provide greater risk-taking advice than did American raters. However, this only applied to the domain of financial risks and not for social risks. Hence, the proverbs reflect the fact that social concerns are rated as equal to, and perhaps higher than financial or materialistic concerns in collectivist cultures, but are of smaller significance to individualists. The pioneering research showed that comparative analysis of cultural products can provide insight into underlying value differences. In essence, the observed differences in risk-taking from the two cultures can be at least partially derived from longstanding differences in cultural values, which are reflected in their proverbs.

The Cushion Hypothesis

Hsee and Weber (1998) revisited the Markowitz (1959) normative theory of risk to contrast the behavior Chinese, Polish, German, and American students when confronted with risky investment options. Participants from these countries were shown a series of investment scenarios each of which included probability, size of gains and losses,

and the expected utility. They were given a hypothetical \$20,000 to make an investment decision. Responses included the WTP (willingness to pay) amount and a risk appraisal $R(X)$ of each scenario. The Chinese sample offered a significantly higher mean buying price for the investment options, and they also rated the investments safer than all other groups in the sample. In other words, the collectivistic group of participants (Chinese) had a distinct risk perception and behavioral tendencies; for the same given risky scenario, the Chinese chose to invest more and also perceived them to be safer than the individualists.

Intrigued by the results, Hsee and Weber followed up in 1999 as they expanded the study to include other domains of risk-taking and modified the risk scenarios (Hsee & Weber, 1999). Traditionally, common intuition – as influenced by popular media – regard Americans as the more adventurous and risk-seeking group. East Asians are more closely associated with prudence, conservatism, and pragmatism in terms of financial matters. In the first part the study, Hsee and Weber (1999) asked American and Chinese participants to predict each other's risk behavior. The results corroborated what they believe to be common knowledge; both American and Chinese participants predicted that the Americans would be more risk-seeking.

Hsee and Weber's (1999) research expanded the domains of the risky scenarios to include academic and health scenarios. The academic scenario involved writing a paper on a provocative or conservative topic, and the health scenario addressed the choice between a new and established flu drug. Financial risk options were also tweaked to include only percentage changes and eliminated the exchange rate confusion from the 1998 study. In the results, Chinese participants again consistently chose riskier

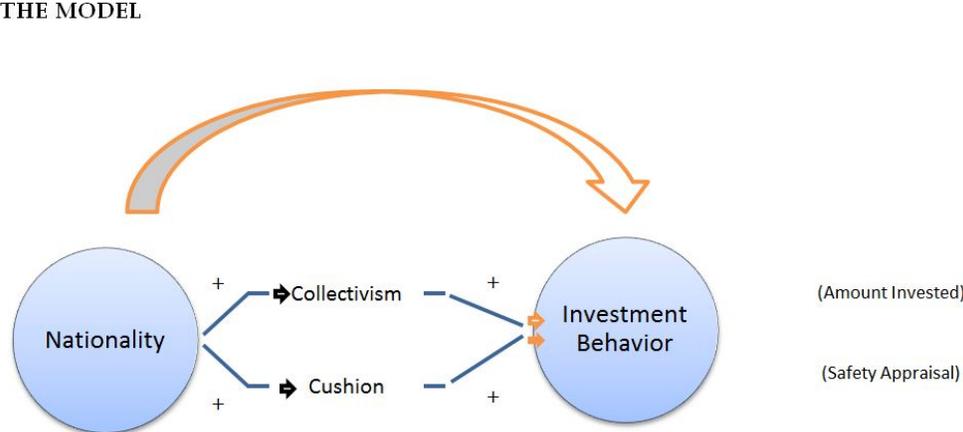
investments than the Americans. However, the financial scenarios found persistent, audacious preferences by the Chinese sample; in the academic and health scenarios, there were no statistically significant difference between the American and Chinese samples.

Hsee and Weber (1999) offered an astute conjecture to explain the persistent investment behavior and risk perception of the Chinese participants. The *cushion hypothesis* states that the collectivistic social fabric of Chinese communities mollifies the financial risk experienced by its members. Essentially, if they are in need, the Chinese or other members of collectivistic societies turn to their extended social network for support. This support ranges from emotional comfort to substantial material and financial assistance (Hsee & Weber, 1999). For instance, East Asian societies often do not construct strict time limits on loans or contracts on repayment of dues; reciprocity is loosely interpreted and may last forever (Triandis, 1997). Furthermore, the emphasis on interdependence and survival of the group puts pressure on group members to help one in need. Assuming the actual provision of assistance or the perception of this social arrangement, the adverse aftermath of a risky monetary investment may be less severe to Chinese than to Americans. Consequently, the collectivistic person may internalize such ideas and both perceive and prefer risk differently than those coming from an individualistic culture.

Based on the Cushion Hypothesis conjecture and the supporting research leading up to this point, a deeper exploration of cross-cultural risk behavior requires a model that tests collectivism-individualism prior to gathering appraisal and reaction to financial risk. Subsequently, this model must also observe and detect whether the members of a socially collectivist culture do take greater financial risk because they can afford to because of

their culture. Thus, this investigation warrants the creation of the Cushion Hypothesis Scale to account for the attributes of social networks' insurance against potentially catastrophic outcomes. The social network serves as a "cushion," and the present study is designed to answer the following questions: "Is the risk behavior and risk perception of participants dependent upon whether they believe that their respective social network will cushion their potential "fall"? What is the influence of Collectivism and Cushion on investment behavior in terms of risk perception and monetary amount invested? In Figure 1, the research paradigm is illustrated.

Figure 1.



Method

Participants

The participants were selected from 92 adults in the United States and the People's Republic of China. They ranged between the ages of 20 and 26. The mean age of the sample was 23. There was approximately an equal representation from each nation group, consisting of 52 Chinese and 40 American individuals. The American sample belonged to an elite liberal arts college, while the Chinese sample belonged to two prominent Chinese universities located in Beijing, China. The compensation provided was a chance to win a \$25 dollar Amazon gift card for each country. Given the academic emphasis of the American college, its students were likely to be government, economics, or psychology majors. They were also intensely involved in job search and important career decisions.

Procedure

The study was divided into two parts. In the first portion, the participants answered a series of questions on an internet survey system designed to test two constructs. Each set of questions tested one particular construct of interest. In total, there were 17 questions, apportioned in the following manner to respective titles of the construct.

- I. Individualism and Collectivism Scale [11 questions]
- II. Social Cushion Hypothesis [6 questions]

In the second portion, the participants responded to questions about their perceptions and reactions of the riskiness of a series of financial investment opportunities. Six scenarios

were shown individually and separately. Each scenario had three potential outcomes, with at least one possible gain and one possible loss. The probabilities of obtaining each outcome were shown numerically. The participants saw each of the investment scenarios in the same random order. When the participants had finished, they were thanked for their participation.

Materials and Apparatus

The first measure was designed to measure the collectivistic and individualistic tendencies of the participants were expressed through a selection of items created by the researcher and a selection adapted from the Horizontal and Vertical Individualism and Collectivism (INDCOL) scale constructed by Singelis, Triandis, Bhawuk, and Gelfand (1995). Subjects responded to items on a 7-point scale: 1 = *strongly disagree* or *never* to 7 = *strongly agree* or *always*. The Cronbach alpha reliabilities for the Singelis et al. (1995) scale was $\alpha=.73$. The scale involved a series of statements expressing a personal belief, opinion, or hypothetical situation. These statements mostly reflected themes in social relationships, tasks, or appraisals of life. For example,

It annoys me when other people perform better than I do. (Individualism)

The basic unit of society is the group and relationships keep us together

(Collectivism)

The Cushion Hypothesis was proposed by Hsee and Weber (1999) to explain the heightened likelihood of collectivistic individuals to engage in high risk financial decisions. As no scale currently exists to test this hypothesis, the researcher in the present study constructed a 6-question scale to test the likelihood of participants to receive assistance in the wake of financial difficulty, i.e. Cushion (Hsee and Weber, 1999). The

items were measured on a 7-point scale, ranging from 1 = *strongly disagree* or *never* to 7 = *strongly agree* or *always*. For example, *If I need financial or material support, I can count on my parents, friends, and relatives.*

For a complete sample of the individualist-collectivist scales and Cushion questions presented to the participants, please refer to the Appendix section. A summary score was calculated for the Cushion Hypothesis by using the sample mean. The individualism and collectivism scales also had a summary scale score via the calculation of a sample mean for each nation group. Scores were also reverse-coded for the Individualistic responses so that a high overall score indicated collectivism whereas a low summary score indicated individualistic leanings.

After responding to questions about their individualist and collectivist tendencies and the extent to which they believe that family would provide a financial “cushion”, participants began the second part of the experiment in which they indicated how much they would be willing to spend to participate in several different investment options. The task was dedicated to observe the risk preferences and perception of the participants. The participants were presented with a description of their task, which involved investing a certain sum of money into a portfolio under professional management. They were told to assume that they were investing their own money and that they currently had \$20,000 available to make investments. For the Chinese sample, the dollar amount was converted via the most recent Purchasing Power Parity evaluators to account for cross-national differences in relative worth of the amount of funds (the amount was 70,000 RMB). There were a total of 6 different scenarios, each with three different possible outcomes. There was at least one profit outcome and one loss outcome as part of each scenario. The

gain and loss were expressed in terms of a percentage of the amount of money that they put forward. The probabilities of each respective outcome were provided, and the participants were asked to enter a monetary amount equal to the maximum amount of money they were willing to spend to participate in each investment. They were also asked to give a risk appraisal of the safety, *1 = not safe at all to 10 = very safe*.

A sample presentation of a scenario:

Investment Option	Outcome	Probability	Amount to Pay	Safety Appraisal
1	+ 3.5%	0.79		
	-5.3 %	0.20		
	-16.0%	0.01		

The participants saw the investment option presented with the outcome and probability first. Following, they will be asked the following questions:

What is the maximum amount you would be willing to invest in the current given opportunity? (If you wouldn't invest in it at all, please say \$0).

How safe is this investment? Please answer on a numerical rating scale ranging from 1 (not safe at all) to 10 (very safe)

For example, investment option one has a 79% chance to have a 3.5% gain on the monetary amount entered. It also has a 20% chance of losing 5.3%, and a 1% chance to have a larger loss of 16%. If a particular participant saw the investment as not risky, they would give it a higher safety rating and a lower risk rating, which coincided with a larger monetary input. The participants saw each of the 6 options in a randomized order.

Furthermore, the scenarios were shown in discrete fashion and in a different browser

window for each individual scenario. Hence, the participants would think that they were investing the sum in a fresh start for each scenario. A summary of the Willingness to Pay (Amount to Pay) and Risk Appraisal was calculated for each national group by using the sample mean for each nation group: American versus Chinese. For a complete table of the six scenarios, please refer to the Appendix section at the end of the paper.

Hypothesis

The Chinese sample will have a higher cushion mean score, as well as a collectivistic tendency on the INDCOL scale when compared with the American sample. The two scores from the CUSHION and INDCOL would increase the mean overall invested monetary amount and the risk safety appraisal. The Chinese, on average, would rate each given scenario as safer and invest more money than the Americans.

Results

The unifying framework involved several dependent variables at different stages. Means were calculated using independent sample T-test and repeated measure analysis of variance (ANOVA). For all analyses, $p < .05$ was the standard for statistical significance.

Cultural Attitudes

Results on collectivism and cushion demonstrate significant cultural difference across the two nationalities. Each participant responded to an 11-item Individualism-Collectivism (INDCOL) scale once, and proceeded to answer a subsequent 6-item cushion scale. The scores from the INDCOL scale are referred to as the COLLECTIVISM scores, since a higher score on the scale suggest collectivism and lower for individualism. The mean scores for each nationality are shown in Table 1-a,

which are formed by averages of the aggregate summation of each individual's responses to the scales. For instance, an American or Chinese participant can have a possible score range of 11 to 77 for COLLECTIVISM and 7 – 42 for CUSHION; a lower score on both scales would suggest individualism and low levels of the perception of family support. As shown in Table 1-a, Chinese respondents report higher mean scores on both INDCOL and CUSHION scales, indicating higher levels of collectivism and perceptions of family support ($p < 0.01$). This corroborates both the hypothesis and literature (Hofstede, 1980; Triandis, 1993) that East Asian nations, particularly China, demonstrate divergent cultural attitudes in comparison to American participants. The domains tested in the scales involve mostly relationships, social norms, and individual identity.

Furthermore, CUSHION and COLLECTIVISM scores are strongly correlated with each other, $r(90) = .42, p < .001$. This correlation supports the notion that the cushion hypothesis and its tenets are significantly related to the overarching collectivistic emphasis on social goal structure and maintenance of harmonious close relationships.

Table 1-a

Mean scores of INDCOL and CUSHION by Nationality

	COLLECTIVISM (SD)	CUSHION (SD)
USA	41.87 (7.89)	24.97 (6.49)
CHINA	45.40 (6.83)	27.98 (6.10)

Nationality was found to significantly predict collectivism, $b = .24$, $F(1,90) = 5.27$, $p < .05$. It also predicted cushion, $b = .23$, $F(1,90) = 5.19$, $p < .05$, such that the Chinese sample were more likely to answer in a collectivistic fashion for both the INDCOL scale and the cushion scale. Thus, analysis found both a main effect for nationality as well as its significance as a predictor of collectivism and family cushion.

Amount Invested and Risk Perception

Mean judgments of Amount Invested and risk safety perception for the two nationalities across investment scenarios are shown in Table 1-b. The magnitude of Amount Invested and judgments of safety differed significantly as a function of nationality. Results for both monetary investment and risk safety appraisals are produced via a repeated-measure of variance (ANOVA) across the 6 scenarios. The Chinese sample, on average, chose to invest more on three of the scenarios (Greenhouse-Geisser $F(1, 90) = 12.33$, $p < .001$). Chinese respondents also rated three scenarios as safer than the American (Greenhouse-Geisser $F(1,90) = 4.00$, $p < .001$). It is also worth noting that the largest discrepancies in terms of amount of money invested were located in the safest scenarios, in particular, scenario 1, 2, and 5. For the three riskiest scenarios, the Chinese did offer to pay more but the difference between the nationalities was not as pronounced.

Table 1-b

Mean scores for Amount Invested and Risk Safety rating for six scenarios

Scenario	EV (Safety Rank)	Nationality	Amount Invested (SD)	Risk Safety (SD)
1	20309 (1)	USA	9821.25 (6245.48)	7.02 (1.42)
		China	5375.41 (3581.31)	6.19 (1.98)
2	19932 (3)	USA	4250.00 (4437.20)	4.35 (2.10)
		China	3742.76 (3168.02)	5.13 (2.02)
3	19238.80 (5)	USA	3190.00 (3857.11)	3.45 (1.87)
		China	3396.34 (3106.59)	4.46 (2.57)
4	19594.00 (4)	USA	2071.25 (3843.90)	2.67 (2.34)
		China	3330.34 (3352.70)	3.71 (2.80)
5	19973.00 (2)	USA	6926.25 (6174.98)	5.17 (2.37)
		China	3464.63 (3369.60)	4.50 (2.61)
6	18772.00 (6)	USA	1737.50 (2269.47)	3.73 (2.00)
		China	2278.46 (3245.06)	3.73 (2.83)

The EV column displays the ranking of riskiness of the six scenarios based upon evaluation of Expected Values. The Expected Value is calculated from using USD \$20,000 as a benchmark and multiplying it with the probabilities of gain and loss for the

given scenario. For instance, scenario 1 has an EV of 20309 after taking into account of its 79% probability of gaining 3.5%, 20% chance to lose 5.3%, and 1% of losing 16% ($20,000 \times 0.79 \times 1.035 + 20,000 \times 0.20 \times 0.947 + 20,000 \times 0.01 \times 0.84$). Therefore, the EV column gives us a view of the objective risk levels across the six discrete investment options faced by the respondents.

Overall, perceived risk increased with the calculated Expected Value of the scenarios. The scenarios were ranked in order of their riskiness based on their discrete EVs, and this information is shown in column 2 and 3 of Table 1-c. To complement these data, there was also a significant positive correlation between risk safety appraisal and the amount of money invested in each of the scenarios ($r(90) = .44, .37, .48, .32, .44, .42$, respectively, $p < .001$). Both Chinese and American respondents invested more in the options which they felt were safer, and invested less in perceived riskier options. This finding corroborates the data on Expected Values in that amount invested and risk safety progressively increased in accord with the ranking of Expected Values of the investment scenarios. Furthermore, the correlation suggests that the participants took the test seriously and carefully analyzed the investment scenarios.

However, there were significant differences between the two nationalities in the amount of money invested and risk safety rating for each scenario. The repeated measure ANOVA results precluded a pooling of the mean amount invested and risk safety ratings for each nationality. There was no consistent national preference across all six scenarios as expected; the Chinese only chose to invest more in the top three riskiest scenarios. In terms of risk safety appraisal, they ranked just three of the scenarios as significantly safer than the Americans.

Model of Cultural Influence on Financial Decision-Making

The crux of the study sought to show the impact of culture on risk perception and investment behavior. Particularly, the two cultural variables of COLLECTIVISM and CUSHION were projected to positively predict amount invested and risk safety perception. Unfortunately, both variables failed to achieve significance in predicting amount invested and risk safety perception ($p > .05$). However, Nationality was found to be a significant predictor of the majority of risk safety ratings ($p < .05$ for four scenarios) and marginally significant for two scenarios ($p < .10$).

Discussion

The study pursued an expansion of previous studies on cultural differences in risk perception and behavior, in the sense that it specifically tested for the ability of cultural traits to predict investment behavior – as a function of amount invested and risk safety perception. Previous studies such as Hsee and Weber (1998; 1999) found significant differences in the way respondents from China and United States perceived and reacted to the risks of financial scenarios. China, a traditionally collectivistic culture as found by cultural psychologists Triandis (1993; 1996) and Hofstede (1980), invested more money in every given scenario than the Americans did. The results from this study support the notion that that a culture's location on the individualism-collectivism continuum contribute to the risk preferences and perception of its members.

Results showed significant cultural differences among the Chinese and American respondents on the COLLECTIVISM and CUSHION scales. Chinese respondents scored

significantly higher than their American counterparts, and a corresponding linear regression showed Nationality as a significant predictor of responses from the two scales. Thus, these results expand upon the Hsee and Weber (1998; 1999) studies in that the gathered Chinese sample consistently answered in a collectivistic fashion. The items on the scales, such as *Conformity to general social norms is necessary to maintain stability*, are designed to expose the participant's attitude toward group goals, relationships, and emphasis on social support. Findings from the first step of the model confirm the theory that collectivists place a premium upon group identity and harmony. The American sample demonstrated a consistent preference for personal achievement and less concern for the presence of family and social support. While the Chinese participants tended to think of *groups* as the basic unit of society, the Americans were more inclined to consider the atomic individual as the pillar of society.

An interesting caveat was the low mean scores for both Chinese and American respondents on the CUSHION scale; the mean scores suggest a slightly low perception of family support for both Chinese and Americans. Methodological problems or changing cultural attitudes may explain the low scores for both nationalities. These issues are discussed later in the discussion.

Risk Perception and Amount Invested

The COLLECTIVISM and CUSHION variables failed to achieve statistical significance in predicting risk safety perception and the amount invested. Nationality achieved minimal significance for the amount invested, but had more success in predicting risk safety ($p < .05$ for four scenarios, $p < .10$ for the rest). However, the key

statistical correlation between amount invested and risk safety appraisal suggest that the majority of respondents in both nations and cultures were risk-averse. In effect, this finding also confirms existing literature on the relationship between financial risk-taking and perception. The average Chinese and American respondent can be classified as risk-averse in the traditional sense in their offering to pay less on average for riskier options than for safer options (Kahneman & Tversky, 1973).

Given that the differences in amount invested were associated with the observed differences in risk perception, we can assume that the participants behaved like normal, rational human thinkers. Therefore, the failure of COLLECTIVISM and CUSHION as significant predictor variables requires further exploration. In this study, I focused on only one of the determinants of risk perception and investment behavior: culture. Risk appraisal and behavior are functions of multiple cognitive dimensions (Wildavsky & Dake, 1990). Situational, cultural, and individual differences can all produce differences in risk perception and preference. For instance, risk perception can be influenced by outcome feedback, trust, expectations, and personality (Weber & Milliman, 1997 as cited in Hsee & Weber, 1998). For example, personality could modify an individual's tolerance of loss-gain frameworks associated with the Kahneman and Tversky (1973) model. In other words, whereas most individuals are risk-averse in gains and risk-seeking in losses, variance in personality of individuals could alter the perception and reaction to risk simultaneously or in sequential manner. Some individuals could rank the same given risk, but because they are more tolerant of risk, they would invest more regardless of cultural bias. Consequently, there is a strong possibility that individual variance in personality among the Chinese and American samples may have affected investment

decision and risk safety ratings independent of the COLLECTIVISM and CUSHION predictors. A rapidly changing landscape in China may have played a significant influence on the personalities of the Chinese sample.

The present study reported cultural differences as stable constructs within their particular Collectivism or Individualism groups. However, collectivism and individualism can both take different forms at various parts of the world and in different dosages. For instance, moderately individualistic individuals can be concerned with “the community” and act in socially more responsible ways than many collectivists. It is entirely possible that some collectivists may become mentally exhausted of always gearing toward demanding group-norms and social arrangements (Traindis, McCusker, and Hui, 1990). Moreover, it is important to remember that each culture may have its own kind of collectivism or individualism. For instance, South Indian collectivism may have much in common with Chinese collectivism, but also has unique Indian attributes.

Changing demographics and economic conditions could have a sizable impact on levels of collectivism and individualism in a society. A persistent finding in cross-cultural studies is the increase in some aspects of individualism as a society pushes toward a Western mode of living and production. Affluence, social mobility, and internationalization not only serve as antecedents of individualism, but can also expose native individuals to more diverse portfolio of values. Of all nations in the past two decades, none has experienced as rapid of a change in affluence and globalization as China. Furthermore, the sample of Chinese participants is collected from elite national universities in the capital of China; it is entirely probable that many of these Beijing college students hold stronger individualistic views than some American respondents.

Methodological Issues

Limitations to both the scales and investment scenarios may have contributed to the failure of the model's original predictions on amount invested and risk safety. The extent and length of the COLLECTIVISM and CUSHION scales may have been insufficient to truly detect the cultural biases of 92 respondents. Specifically, the traditional measures of collectivism-individualism as abstracted by Triandis (1993) included over 35 questions. The present study handpicked 11 questions from a stock of about 50 questions on the concept, and the accurate measure of a complex construct such as culture may require much more than a dozen questions. Concurrently, many of the participants in the American sample knew the investigator personally. Their self-report answers may have been affected by the pointed nature of some questions i.e. *I do not have much trust in my family members*. In addition, the CUSHION scale was entirely novel and abstracted for the current research. As such, the reliability and validity of this scale is yet to be extensively tested. In lieu of privacy concerns of the American sample, which belonged to an intimate-sized liberal arts college, the CUSHION scale must be more sensitive to its test environment and somewhat temper the provocative questions regarding friends and family. Financial investment scenarios often required explanation and should receive a makeover for future research in financial risk decisions. Several participants complained that they felt none of the six scenarios were actually profitable or desirable investments. In actuality, the expected values of the six scenarios only yielded

one positive gain (with 20,000 dollars as the benchmark input). Hence, this may explain as to why the amount invested did not have significance reaction to any of the projected predictor variables.

The design to accommodate the exchange rate issue may have also affected the Chinese participants' investment decisions. Originally, the method was to employ Purchasing Power Parity instead of the raw exchange rate calculation to abstract the amount of hypothetical funds presented to the Chinese sample. Consequently, they were told that they had only 70,000 RMB (PPP is currently around 3 RMB= 1 USD) as opposed to 130,000 RMB (current FX rate stands at 6.5 RMB = 1 USD currency exchange rate). The measure of PPP is not without controversy, however. Nusair (2003) and Doganlar (2006) depict valid econometric concerns regarding both long-term reliability and short-term validity of the PPP benchmark; fluctuations in tariffs and government policies usually make PPP measurements less than ideal (Nusair, 2003). Taking this into consideration, the amount of hypothetical money made available to the two nationalities may have been imbalanced, resulting in an outcome where the Chinese invested less money in the respective scenarios because they acted as if they had less funds.

Implications for Future Research

Findings from the study confirm the general literature on cultural differences between Chinese and Americans. The mean national scores on the two novel scales demonstrate persistent preferences for certain types of social norms, relationships, and family organizations exist among Chinese and American cohorts. In addition, the amount

invested and risk safety results are partially explained by nationality; the Chinese sample chose to take on more risk and perceived less risk for the three riskiest scenarios. This confirms previous literature that found higher risk-tolerance and lower risk perception in Chinese and collectivistic individuals.

It is not easy to establish whether observed national differences are truly derivatives of culture. Despite the insignificance of the two culture scales as predictors, future research should aspire to create additional items to the CUSHION scales and expand the COLLECTIVISM scales. Complex concepts such as family trust and relationship support systems may require much more in-depth measures to gather accurate, significant responses. Furthermore, the weights we assign specific variables in predicting psychological phenomena such as risk shift with the context, and culture is but one of the contexts. The results from this study show that theories need to be continuously tested, modified, and applied to a diverse population. Future research, for instance, should continue to improve the validity of financial investment scenarios. A more appropriate measure may start with abandoning raw dollar amounts and utilize percentages. For instance, instead of asking participants to input a dollar amount to reflect their risk preference and perception, they may be asked to answer: what percentage of your current life savings might you be willing to put down for this investment option? The risk levels of the scenarios also need to be modified so that there are more discernible differences among the objective riskiness of the scenarios.

Risk perception and behavior are not static cognitive functions; they involve a confluence of situational and cultural determinants. When a high-stakes cross-national negotiation or major multinational takeovers are under consideration, the participants

activate a multitude of analyses. Whereas culture – collectivism and individualism – could strongly impact decision-making under risk, situational factors may also have significance in shifting risk perception and behavior. While a partial replication of Hsee and Weber (1998), the present study did not include situational determinants such as mood and other personality traits. The model was already increasingly complex, and inclusion of other variables causal in bringing about cross-national differences would have impaired clarity. An ideal solution may be a *set* of studies, which may be best suited to provide more conclusive evidence about factors that contribute to risk behavior. In combination, model-based connections between various predictor variables should discover more novelties regarding the influence of culture on risk (Hsee & Weber, 2000).

Cultures differ on many dimensions; individualism and collectivism make up only one of those factors. Moreover, many cite the age-old wisdom in psychology that intergroup differences are often less pronounced than intragroup differences. Americans and Chinese may have more in common than they are different. However, the importance of culture attributes' influence on risk perception and behavior must not be delegated. Differences on individualism-collectivism continuum have been used to explain differences in social responsibility, career preferences, decision goals and methods of risk adjustment, construction of the self, and judgment of performance (Hsee & Weber, 2000).

Despite the numerous methodological and exogenous variables encountered, corrections to key steps can overcome such obstacles. In the immediate future, modifications should produce a more rigorous cross-cultural investigation of risk perception and behavior. For instance, the exploration of the role of cultural differences in risk decision processes should expand into the effects of other cultural differences on

value orientation. The format of future research can also shift; case studies, naturalistic research, and lab experiments can form a more comprehensive set of studies dedicated to examine cultural influence on risk. Translation of the surveys may also prove conducive to more accurate research. The full potential of cross-cultural research in this realm has not been fully realized, and I hope that this study will provide impetus for future research in an important juncture between the two most important participants in the world of tomorrow.

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Strongly Disagree/Never

Strongly Agree/ Always

The Investment Scenarios

Investment Option	Expected Value (Rank)	Outcome	Probability	Amount to Pay	Safety Appraisal
1	20309 (1)	+ 3.5%	0.79		
		-5.3%	0.20		
		-16.0%	0.01		
2	19932 (3)	+4.0%	0.56		
		-1.5%	0.28		
		-13.5%	0.16		
3	19238.80 (5)	+19.3%	0.11		
		+3.4%	0.44		
		-16.5%	0.45		
4	19594.00 (4)	+55.0%	0.10		
		-11.0%	0.11		
		-8.0%	0.79		
5	19973.00 (2)	+12.0%	0.79		
		-1.5%	0.01		
		-48.0%	0.20		
6	18772.00 (6)	+0.8%	0.11		
		+4.5%	0.44		
		-20.0%	0.45		