Understanding when interdependence with other people decreases or increases risk-taking

Dissertation

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By

Jo A. Sasota, M.A.

Graduate Program in Psychology

The Ohio State University

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Dissertation Committee:

Dr. Kentaro Fujita, Advisor

Dr. Jennifer Crocker

Dr. Russell H. Fazio
Abstract

Understanding risk-taking and the variables that influence it has been an important area of research for many years. The three studies reported here examine how thinking about the self as interdependent with other people, that is, thinking about the self as a socially embedded, interpersonally connected self, interacts with the differential costs & benefits of risky choices for the individual vs. others to decrease or increase risk-taking. The results from these studies show that thinking about the self as interdependent with other people reduces risk-taking if the potential costs of a risky action are shared with others and if and only if it is salient that the concerns of others and the individual conflict (Studies 1 & 2). The results also show that thinking about the self as interdependent with other people increases risk-taking when only the individual bears the costs and others may benefit from risky action (Study 3).
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Vita

September 18, 1983 ................................................................. Born – Manila, Philippines

2006 .............................................. B.S. Psychology, Anthropology/Zoology, Applied Statistics
University of Michigan, Ann Arbor

2007-2010 ....................................................... Department of Homeland Security Fellow,
Department of Homeland Security

2008 ................................................................. M.A. Psychology
The Ohio State University, Columbus

2010-Present ............................................................... Graduate Teaching Associate
Department Psychology, The Ohio State University

Publications


Fields of Study

Major Field: Psychology

Specialization: Social Psychology

Minor Field: Quantitative Psychology
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Chapter 1: Introduction

Review of self-construal literature

At some very basic level, the nature of experience is self-centered. As David Foster Wallace has put it: “The world as you experience it is there in front of you, or behind you, or to the left or right of you, on your TV, or your monitor…Other people’s thoughts and feelings have to be communicated to you somehow, but your own are so immediate, urgent, real” (Wallace, 2009, pp. 40-41). In other words, much of the time, the nature of experience is filtered through the self because the self provides an interpretive framework in which to process information from the social world. As a consequence, how people answer the question “Who am I?” has a profound impact on their thoughts, feelings, and actions.

One dimension by which people systematically differ in their thoughts about who they are (hereafter referred to as self-construals) is the degree to which they think of themselves as connected and interdependent with other people (for review see Markus & Kitayama, 1999; Oyserman & Lee, 2008). As noted by many researchers, the self is fundamentally “…both separate from and connected to others” (Kühnen & Oyserman, 2002, p. 492; Baumeister & Leary, 1995; Brewer & Gardner, 1996). As such, depending on the situation, people can think about the self as (1) separate from and independent of others or (2) connected to and interdependent with others, as a person influencing and being influenced by other people (Oyserman & Lee, 2008). Those who think of
themselves as autonomous from their social connections are said to possess an independent self-construal whereas those who think of themselves as influencing and being influenced by their social relationships are said to possess an interdependent self-construal (Markus & Kitayama, 1991). Independent and interdependent self-construals affect people’s experiences and how people behave because they systematically influence the perspective by which people process social information (e.g., Gardner, Gabriel, & Lee, 1999). When people think of themselves as autonomous agents, separate from others, their thoughts, feelings, and actions revolve around how their decision-making affects them as individuals more so than others they are connected to. However, when people think of themselves interdependently, as individuals embedded in a network of others, influencing and being influenced by other people, their thoughts, feelings, and actions revolve around how their decision-making affects others as much or more so than themselves as individuals.

Cross-cultural research suggests that people in the East (e.g., Japan, other Asian countries) typically construe the self as interdependent whereas people in the West (e.g., America, Western European countries) typically construe the self as independent. That is, Easterners tend to think of themselves as connected to and interdependent with others whereas Westerners tend to think of themselves as “independent, self-contained, and autonomous entit[ies]” (Markus & Kitayama, 1991, p. 224). Of note, is that people in both the East and West have the ability to adopt either an independent or interdependent self-construal (e.g., Gardner et al., 1999). The influence of culture on self-construals, it seems, is to influence the extent to which people chronically construct the self as
interdependent or independent (Hofstede, 1980; Triandis, 1989; Markus & Kitayama, 1991; Gardner et al., 1999; Oyserman & Lee, 2008).

Experimental evidence shows that interdependent vs. independent self-construals differentially influence a variety of psychological processes. For example, experimental evidence shows that the experience of cognitive dissonance, feelings of discomfort caused by performing an action with aversive consequences (Cooper & Fazio, 1984), one of the most replicated and studied phenomenon in the social sciences (e.g., Cooper, 2007), is influenced by whether the self is thought to be interdependent or independent. Specifically, research shows that people who chronically think of the self as interdependent experience cognitive dissonance when choices have aversive consequences for other people, but not the individual, whereas those who chronically think of the self as independent experience cognitive dissonance when choices have aversive consequences for the individual, but not other people (Hoshino-Browne, Zanna, Spencer, Zanna, Kitayama, & Lackenbauer, 2005).

A meta-analysis conducted by Oyserman & Lee (2008) showed that experimentally inducing independent vs. interdependent self-construals in the lab leads to reliable differences in: the self-concept, the values people endorse, and social judgments. The experimental inductions of self-construals are designed to cause people to think about the self as independent or interdependent momentarily in the lab. These experimental inductions are priming inductions, inductions that increase the accessibility of a particular concept, in these instances independent vs. interdependent self-construals, that carry-over to other contexts. These effects are robust; that is, the effects are observed regardless of the specific self-construal priming induction implemented or
specific dependent variable used to operationalize these phenomena. In other words, in many studies, priming an independent self-construal causes people to think about the self as a self-contained entity composed of a constellation of traits (e.g., funny, athletic, intelligent, kind), endorse values that facilitate attainment of individual goals and personal accomplishments (e.g., independence, freedom), and condone behavior that may negatively impact social relationships (e.g., refusing to give a friend directions to the art store because the person is reading an exciting book, Miller, Bersoff, & Harwood, 1990). On the other hand, priming an interdependent self-construal causes people to think about the self in relation to others (e.g., brother, son, lab member), endorse values that facilitate maintenance of social relationships (e.g., friendship, belongingness), and endorse the punishment of behavior that may negatively impact social relationships.

Importantly, Gardner et al. (1990) provide evidence for the step-by-step process implied above — the self-construal prime influencing the self-concept, the self-concept then influencing which values to endorse, and social judgments in accordance with the self-construal prime. Specifically, Gardner et al. (1999) show in a series of experimental studies, that the effect of the self-construal manipulation on values (e.g., endorsing independence vs. relationships) is mediated through the effect of the self-construal manipulation on self-concept (e.g., the degree to which the participants thought of themselves in relation to others). The self-construal primes influenced social judgments in the predicted way; interdependently primed participants were more likely to endorse actions that help maintain social relationships, friendship in this case, than independently primed participants.
Independent and interdependent self-construals have even been shown to influence basic psychological processes like visual attention. Specifically, research showed that participants experimentally primed with an independent self-construal were slower to discriminate a centrally targeted letter when flanked with compatible stimuli than participants primed with an interdependent self-construal (Lin & Han, 2009, Study 1). These findings suggest that interdependent self-construals led participants to use more of the context in visual discrimination than independent participants. Similarly, using Navon letters (i.e., large letters composed of smaller, different letters, like an H composed of Ts), research showed that independently primed participants were faster to process the constituent parts (T) rather than the whole (H) but interdependently primed participants were faster to process the whole rather than the constituent parts (Lin & Han, 2009, Study 2; Kühnen & Oyserman, 2002, Study 1). Taken together, these findings suggest that interdependent self-construals bias visual attention so that people attend to the connections and relationships between objects in the environment.

Research has also shown that independent and interdependent self-construals are instantiated at the neurobiological level (e.g., Amodio & Frith, 2006; Chiao, Harada, Komeda, Li, Mano, Saito, Parrish, Sadato, & Iidaka, 2009). Specifically, Chiao et al. (2009) showed that medial prefrontal cortex (MPFC) and posterior cingulate cortex (PCC) activity is modulated by self-construals. In their study, participants were asked to make self-judgments that were both general (e.g., “In general, I am humble”) and contextual (e.g., “When talking to my mother, I am modest.”). Chiao et al. (2009) found that participants experimentally induced to think of themselves as independent before making these self-judgments showed more MPFC and PCC activity when making general
self-judgments than contextual self-judgments. In contrast, participants experimentally induced to think of themselves as interdependent before making these self-judgments showed more MPFC and PCC activity when making contextual self-judgments than general self-judgments. Because prior neuroimaging research showed that both the MPFC and PCC are critical for attending to self-relevant information (e.g., Amodio & Frith, 2006), Chiao et al. (2009) suggest that their findings, modulation of MPFC and PCC activity by self-construal priming induction, “most likely reflect...that priming [independent or interdependent self-construals causes] individuals to attend to and evaluate general or contextual self-representations as more or less self-relevant” (Chiao et al., 2009, p. 8). These findings show how “deep” independent and interdependent self-construals go and provide neurobiological support for the distinction between independent and interdependent self-construals.

In sum, the nature of experience is often filtered through the self, as such, how people respond to the question “Who am I?” has a profound impact on their experiences. Fundamentally, the self is both separate and interdependent with others, and the degree to which the self is thought to be interdependent with others influences a variety of psychological processes in addition to decision-making. Of importance are studies showing that the more interdependent one thinks about the self, the more one weighs the concerns of others with individual concerns and that this results in social judgments that reflects the concerns of others as much or more so than individual concerns (e.g., Gardner et al., 1999).
Risky decisions: Situations where the concerns of others and individuals may conflict

Because the self is both separate and interconnected with others (e.g., Kühnen & Oyserman, 2002), people strive to attain both individual goals and goals of the collective to varying degrees. Doing what is best for the individual does not necessarily have to conflict with what is best for others (e.g., Smith, 1776); however, in certain cases it does. Situations in which the concerns of others and individuals are in conflict can typically be found in situations that involve risk, the nonzero probability of incurring a cost.¹

Although many decisions may impact only the individual (e.g., what to eat for lunch), many other decisions impact both the individual and other people (e.g., investing the family savings conservatively vs. aggressively. This decision not only affects the individual making the financial decision but also family members who will rely on the money for future expenses). Not all decisions that involve risk necessarily entail a conflict between the concerns of others and the concerns of the individuals. There are many situations in which a decision involving risk affects no one other than the decision-maker, for instance, a young woman deciding on whether to attend a prestigious graduate school with the chance of failing out or attending a less prestigious graduate school in which she will almost certainly earn her advanced degree.

However, when the consequences of a risky choice affect others, conflict between others and individual concerns can result because of the different costs and benefits a risky choice has for the individual vs. other people. First, conflict can result when individuals may benefit more from a risky choice than other people. This may occur in

¹ The *Oxford English Dictionary* defines risk as “(Exposure to) the possibility of loss, injury, or other adverse or unwelcome circumstance; a chance or situation involving such a possibility.”
situations when the potential costs of a risky decision are shared with others and it is unclear whether others will benefit if the risky action results in success. For example, a person who is running late in congested traffic, with her friend in the car, may be concerned about getting home as quickly as possible whereas her friend, with no such time constraints, is more concerned about not getting into an accident. In this situation, the potential costs of a risky action are shared; driving fast in congested traffic could result in a traffic accident injuring the driver as well as the friend, but even if speeding did not result in an accident, it is unclear how the friend benefits from arriving home early.

Second, conflict can result when other people may benefit more from a risky choice than the individual. This may occur when individuals bear all the potential costs of a risky action but others may benefit from risk. For example, a child may be goaded by a group of friends to shoplift some candy while they wait outside. The child may be concerned about getting caught but his friends may be more concerned about getting candy. In this situation, the potential cost of getting caught shoplifting is shouldered primarily by the child, as the child is shoplifting the item himself, but if the child does not get caught, he and his friends can enjoy the candy he shoplifted.

Self-construals and Risk-taking

When risk results in a conflict between the concerns of others and individual concerns, self-construals should influence risk-taking because self-construals influence the relative importance people place on the concerns of others vs. the individual (e.g., Gardner et al., 1999). Cognitively, interdependent self-construals weigh the concerns of others as much or more so than individual concerns whereas independent self-construals
weigh individual concerns more so than the concerns of others. If other people’s concerns are weighted as much or more heavily than individual concerns then people will act to increase the welfare of others; however, if individual concerns are weighted more heavily than other people’s concerns then people will act to increase individual welfare.

In situations where the potential costs associated with risk are shared with others, an interdependent self-construal should lead to less risk-taking because the concerns of others are weighted along side of individual concerns; on the other hand, an independent self-construal should lead to more risk-taking because individual concerns outweigh the concerns of others. In the example described above, about a person deciding whether to speed in congested traffic with her friend in the car, an interdependent self-construal causes the driver to weigh her friend’s concern about getting home safe as much or more so than her concerns about getting home quickly, thus making it less likely the driver will speed; conversely, an independent self-construal causes the driver to weigh her concerns of getting home quickly ahead of her friend’s concern about getting home safe, thus making it more likely the driver will speed.

For the same reason, concern for others, in situations when only the individual bears the cost associated with a risky choice and others stand to benefit from risk, an interdependent self-construal should lead to more risk-taking; an independent self-construal should lead to less risk-taking. In the example described above, about the child deciding whether to shoplift candy for him and his friends, an interdependent self-construal should cause the child to weigh his friends’ concerns about eating candy as much or more so than his own concerns about getting caught, and as such, the child should be more likely to shoplift; on the other hand, an independent self-construal causes
the child to weigh his concerns about getting caught ahead of his friends’ concerns about candy, and as such, the child should be less likely to shoplift.

Previous research providing support for the hypotheses

One cross-cultural study examining whether people from different cultures differ in their willingness to take risk provides indirect evidence to suggest that self-construals may influence risk-taking through concern for others. Specifically, Kim & Park (2010) showed that participants from Korea, a country that endorses collectivism, took less risk than participants from Australia, a country that does not endorse collectivism. Collectivism, placing the welfare of others ahead of individual welfare, can be thought of as an explicit social value that is endorsed or not by particular cultural groups (Kitayama & Park, 2010; Hofstede, 1980). Research suggests that people from Korea, people who tend to endorse collectivism, chronically think about the self as interdependent whereas people from Australia, people who do not endorse collectivism, chronically think about the self as independent. Kim & Park (2010) suggest that chronic differences in independent and interdependent self-construals may be the reason there are differences in risk-taking with Vietnamese vs. American participants.

It is important to note the limitations of Kim & Park (2010). First, the data is cross-cultural, which makes it correlational in nature, and as such, other explanations, other than self-construals, for differences in risk-taking cannot be ruled out. Second, Kim & Park (2010) provide indirect evidence for a main effect of interdependent self-construals on risk-taking (chronic interdependent self-construals lead to less risk-taking). Their data do not suggest that interdependent self-construals can lead to more risk-taking.
The Present Research

The present research aims to show experimentally that (1) there are differential effects of interdependent vs. independent self-construals on risk-taking, (1a) but that the differential effects are constrained to situations in which the potential consequences of risk involve others as well as the individual and the concerns of others and the individual conflict. When the situation clearly involves only the individual or it is not apparent others will be affected by a risky choice, the differential effect of self-construals should not be observed because the concerns of others and the individual do not conflict. (2) Additionally, the studies will show that interdependent self-construals can decrease as well as increase risk-taking. (2a) Whether an interdependent self-construal decreases or increases risk-taking will depend on the costs & benefits of the risky choice for the individual vs. others. If the individual as well as others share the costs associated with a risky choice, then interdependent self-construals should decrease risk-taking. If only the individual bears the cost associated with the risky choice and others stand to benefit from risk, then interdependent self-construals should increase risk-taking.
Chapter 2: Study 1

The purpose of Study 1 was twofold. First, Study 1 examined the differential effects of independent vs. interdependent self-construals on risk-taking. I predicted that in contexts where the potential costs of a risky action are shared with others, interdependent self-construals should lower risk-taking compared to independent self-construals. Second, Study 1 examined the specific conditions in which self-construals affect risk-taking. I predicted that the differential effect of independent and interdependent self-construals on risk-taking should only be observed in situations when the conflict between others and individual concerns regarding the course of action to be taken is made salient. For decisions where the conflict is not salient, self-construals should have no effect.

To this end, participants were experimentally induced to think about the self as either independent or interdependent before completing a measure of risk-taking. In the risk-taking measure, when the conflict between others and individual concerns was made salient, the potential costs of a risky action were shared with other people. In addition, the risk-taking measure differentiated decisions where conflict between others and individual concerns was salient or not (i.e., the two motives suggest different courses of action or not, respectively).
I predicted that interdependent compared to independent self-construals should lead to less risk-taking. I also predicted to observe the differential effect only when the conflict between others and individual concerns was made salient.

Method

Participants

Seventy-three Ohio State University undergraduate students (32 women, 41 men) completed the study in exchange for course credit. Participants were randomly assigned to either the interdependent or independent self-construal condition and tested in groups of 1 to 4. There were no significant effects of gender in this, or any of other studies reported here.

Materials & Procedure

Self-construal manipulation. Participants first completed an exercise designed to prime independent or interdependent self-construals. Brewer & Gardner (1996) first validated the priming exercise I used. Participants were presented with a paragraph describing a trip to a city. The participant’s task was to circle all the pronouns in the paragraph. The independent version and interdependent version differed only with respect to the pronouns used (see Appendix A). In the independent self-construal condition, participants searched for singular pronouns (e.g., I, mine). In the interdependent self-construal condition, participants searched for plural pronouns (e.g., we, ours). Previous research shows this manipulation induces interdependent vs. independent self-construals reliably (e.g., Brewer & Gardner, 1996; Oyserman & Lee, 2008).
**Risk-taking measure.** After completing the self-construal manipulation, participants completed the Choice Dilemma Questionnaire (CDQ; Kogan & Wallach, 1964). The CDQ measures non-domain specific risk-taking by asking participants to respond to twelve hypothetical scenarios in which they pretend to be the decision-maker (Kogan & Wallach, 1964). Each of the twelve scenarios presents a choice between two courses of action: (a) a high-risk, high-reward action or (b) a low-risk, low-payoff action. Participants were asked to select the minimum odds for success they would require before pursuing the high-risk, high-reward option.

The twelve scenarios in the CDQ were divided into two categories. Two independent raters unaware of the hypotheses were asked to divide the scenarios according to whether it was salient or not that the choice would affect others. To help the raters with this task, a scenario of each type was used to illustrate.² The raters divided the

² Scenario where the decision affects others as well as the individual:
“Mr. A, an electrical engineer, who is married and has one child (underline added), has been working for a large electronics corporation since graduating from college five years ago. He is assured of a lifetime job with a modest, though adequate, salary, and liberal pension benefits upon retirement…While attending a convention, Mr. A is offered a job with a small, newly founded company which has a highly uncertain future. The new job would pay more to start and would offer the possibility of a share in the ownership if the company survived the competition of the larger firms.”

Scenario where the decision affects individual only:
“Mr. F is currently a college senior who is very eager to pursue graduate study in chemistry leading to the Doctor of Philosophy degree. He has been accepted to both University X and University Y. University X has a worldwide reputation for excellence in chemistry. While a degree from University X would signify outstanding training in this field, the standards are so very rigorous that only a fraction of the degree candidates actually receive the degree. University Y, on the other hand, has much less of a reputation in chemistry, but almost everyone admitted is awarded the Doctor of Philosophy degree, though the degree has much less prestige than the corresponding degree from University X.”
remaining ten scenarios. Initial inter-rater agreement was 80 percent. The two discrepant scenarios were resolved through discussion. The outcome of this process yielded six scenarios where it was salient that the choice affected others as well as the individual and six scenarios where it was not salient that the choice would affect others (see Appendix A).

It was assumed that in the six scenarios where others as well as the individual were affected, that the potential costs of a risky action were shared (see Appendix B for each of these six scenarios). Based on this assumption, it was further assumed that the course of action suggested by others and individual concerns differed. Because of the shared costs, I suggest that what is best for others is a course of action more conservative (i.e., less risky) than what the individual could tolerate if others were not involved. If others are not involved, or not taken into consideration (i.e., others are not salient), the potential costs are not burdened onto others, freeing the self to pursue a course of action that is less conservative (i.e., more risky). Conversely, in scenarios where only the individual is involved (or seems like only the individual is affected because others are not salient), there is no conflict between others and individual concerns because others are not present to influence decision-making (see Appendix B for these six scenarios).

After completing the CDQ, participants then provided demographic information (e.g., gender, age, year in school). Upon completion, a funneled debriefing was administered (Bargh & Chartrand, 2000). No participants reported being suspicious of the relationship between the self-construal manipulation and responses on the CDQ. Afterward, participants were carefully debriefed and dismissed.
Results and Discussion

CDQ scores were transformed such that higher scores indicated greater amounts of risk-taking. Transformed CDQ scores were submitted to a Prime (Independent vs. Interdependent self-construal) × Situation (Self vs. Self+Other(s)) mixed ANOVA with repeated measures on Situation. There was a significant effect of Prime, $F(1, 71) = 5.82, p = .02$, indicating that participants were less risky when experimentally primed with an interdependent self-construal than an independent self-construal ($M_{\text{Interdependent}} = 18.85$ vs. $M_{\text{Independent}} = 20.82$). There was also a significant effect of Situation, $F(1, 71) = 8.32, p < .01$, indicating that participants were less risky in situations where it was salient that the choice would affect others than in situations where it was not salient that others would be affected by the choice ($M_{\text{Self+Other(s)}} = 19.10$ vs. $M_{\text{Self}} = 20.57$). Importantly, as predicted, the Prime × Situation interaction emerged as a significant effect, $F(1, 71) = 3.84, p = .05$ (see Figure 1). When it was salient that others could be affected by the decision, simple effects tests revealed participants in the interdependent condition were less risky than participants in the independent condition ($M_{\text{Interdependent}} = 17.62$ vs. $M_{\text{Independent}} = 20.08$), $F(1, 71) = 12.59, p < .01$. When it was not salient that others could be affected by the decision, there was no significant difference in risk-taking between the two self-construal conditions ($M_{\text{Interdependent}} = 20.58$ vs. $M_{\text{Independent}} = 21.06$), $F(1, 71) = .40, p = .53$.

The results from Study 1 provide initial evidence suggesting that interdependent self-construals can lead to less risk-taking than independent self-construals. In this study, participants primed with an interdependent self-construal were less risky than participants primed with an independent self-construal when the potential costs of a risky action were shared. Furthermore, as predicted, the differential effect was observed only in decision-
making contexts where it was salient that the choice could affect others. That is, interdependent participants were less risky than independent participants only in decision-making contexts where the concerns of others and the individual conflicted. Risk-taking did not differ for interdependent and independent participants in decision-making contexts where it was not salient that their choice could affect others. As a whole, this pattern of data suggests that when the potential costs of a choice are shared with others, it is salient that others will be affected by the choice, and the concerns of others and the individual conflict, interdependent self-construals lead to choices that are less risky than independent self-construals.
Chapter 3: Study 2

Although Study 1 data support the hypotheses, I wanted to ensure that the findings were not due to idiosyncratic features of the priming procedure I used. Given the experimental materials that were used (circling singular versus plural pronouns) a social identity explanation may be invoked to explain the findings. That is, one alternative explanation for the data is that it was not interdependent self-construals, thinking about the self as a person whose actions influence others and as a person who lets others’ concerns influence him, per se that caused decreases in risk-taking when others were salient, the concerns of others and the individual conflicted, and the potential costs were shared, but more collective self-representations, representations of the self where the self becomes more like a prototypical group member (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). According to social identity theory, of the many group characteristics the self may incorporate into his identity are the concerns a prototypical group member may have (Turner et al., 1987). A social identity re-interpretation of the data might suggest that people believe that group members in the scenarios valued risk aversion and thus displayed more risk aversion in an effort to behave like the prototypical group member. Although past research has used the singular versus plural pronoun circling task to induce independent and interdependent self-construals, respectively (see
Oyserman & Lee, 2008), inducing these self-construals with an experimental task that controls for collective self-representations would allow for stronger conclusions that interdependent self-construals per se decrease risk-taking.

The purpose of Study 2 was to conceptually replicate the findings in Study 1 using a different self-construal manipulation. To this end, participants were presented with a different self-construal priming manipulation before completing the risk-taking measure from Study 1.

Method

Participants

Fifty Ohio State University undergraduate students (17 women, 33 men) completed the study in exchange for course credit. Participants were randomly assigned to either the interdependent or independent self-construal condition and tested in groups of 1 to 4.

Self-construal manipulation. Independent and interdependent self-construals were experimentally manipulated by having participants read a story about a Sumerian warrior (Trafimow, Triandis, & Goto, 1991, Study 2) (see Appendix C). In the story, Sostoras, a warrior of the Sumerian people, is asked to appoint a commander for a group of 1 to 4.

Methodologically, Oyserman & Lee (2008) suggest that this task is unlikely to prime collective self-representations because it is difficult to imagine going to the city with everybody from one’s ethnic group, gender, university, etc. As they put it: “Activating the concepts ‘I’ and ‘we’ should activate relevant values, ways of describing oneself, and engagement with others. The paragraphs used in this task all have in common going to or being at a specific place either alone or with a group. The group is assumed to be small enough to go together to the place—one hardly imagines going to the city with all the members of one’s racial/ethnic, religious, or national group; one is more likely to imagine going with a few close others” (Oyserman & Lee, 2008, p. 316).
of soldiers by Sargon III, Mesopotamia’s king. In the independent self-construal condition, Sostoras’s decision on the commander seems uninfluenced by how the decision would affect others — Sostoras’s decision is described as being motivated by individual reward and personal prestige. Conversely, in the interdependent self-construal condition, Sostoras’s decision on the commander does seem to be influenced by how it would affect others; in this case, his family, and the loyalty he could cement with them and the prestige the decision could bring them. It seems, in the former, Sostoras “after thinking about it for a long time…” decided that his actions did not have implications for others, but in the latter, the Sostoras thought his actions did have implications for others. Previous research shows this manipulation induces interdependent vs. independent self-construals reliably (e.g., Trafimow et al., 1991; Gardner et al., 1999; Oyserman & Lee, 2008).

Risk-taking measure. After reading the story, participants completed the risk-taking measure used in Study 1, the CDQ. Participants then completed a demographic questionnaire. As in Study 1, a funneled debriefing was administered and none of the participants were able to identify the relationship between the self-construal manipulation and responses on the CDQ. Afterward, participants were carefully debriefed and dismissed.

Results and Discussion

As in Study 1, CDQ scores were transformed such that higher scores indicate greater amounts of risk-taking. Transformed CDQ scores were submitted to a Prime (Independent vs. Interdependent self-construal) × Situation (Self vs. Self+Other(s)) mixed ANOVA with repeated measures on Situation. As in Study 1, there was a
significant effect of Prime, $F(1, 48) = 4.44, p = .04$, indicating that participants were less risky when experimentally primed with an interdependent self-construal than an independent self-construal ($M_{\text{Interdependent}} = 19.76$ vs. $M_{\text{Independent}} = 21.50$). As in Study 1, there was also a significant effect of Situation, $F(1, 48) = 14.78, p < .01$, indicating that participants were less risky in situations where it was salient that the choice would affect others than in situations where it was not salient that others would be affected by the choice ($M_{\text{Sel+Other(s)}} = 19.26$ vs. $M_{\text{Self}} = 22.00$). As in Study 1, importantly, the Prime $\times$ Situation interaction emerged as a significant effect, $F(1, 48) = 4.43, p = .04$ (see Figure 2). When it was salient that others could be affected by the decision, simple effects tests revealed participants in the interdependent condition were less risky than participants in the independent condition ($M_{\text{Interdependent}} = 17.64$ vs. $M_{\text{Independent}} = 20.88$), $F(1, 48) = 17.70, p < .01$. When it was not salient that others could be affected by the decision, there was no significant difference in risk-taking between the two self-construal conditions ($M_{\text{Interdependent}} = 22.12$ vs. $M_{\text{Independent}} = 21.88$), $F(1, 48) = 1.51, p = .23$.

The results from Study 2 provide additional evidence suggesting that interdependent self-construals per se can lead to less risk-taking than independent self-construals. As in Study 1, when the potential costs of a risky action were shared, participants in Study 2 who were primed with an interdependent self-construal were less risky than participants primed with an independent self-construal. Furthermore, as in Study 1, the differential effect was observed only in decision-making contexts where it was salient that the choice could affect others. That is, interdependent participants were less risky than independent participants only in decision-making contexts where it was clear that their choice had implications for other people. As in Study 1, risk-taking did
not differ for interdependent and independent participants in decision-making contexts where it was not salient that the decision could affect others. Conceptually replicating Study 1, Study 2 provides additional evidence to suggest that when the potential costs of a risky choice are shared with others, it is salient that others will be affected by the risky choice, and the concerns of others and the individual conflict, interdependent self-construals lead to choices that are less risky than independent self-construals. Study 2 also helps discount a social identity re-interpretation of the data as the manipulation of self-construal used in Study 2 controls for collective self-representations (Oyserman & Lee, 2008).
Chapter 4: Study 3

Studies 1 & 2 were experimental studies showing that interdependent self-construals can lead to less risk-taking. Study 3 is designed to show the opposite — interdependent self-construals can lead to more risk-taking. Study 3’s finding would thus establish an interactive effect between interdependent self-construals and the differential costs & benefits of risky actions for the individuals vs. others. When the potential costs or a risky action are shared with others, interdependent self-construals lead to less risk-taking (Studies 1 & 2); however, I believe, when costs of a risky action are borne primarily by the individual and others stand to benefit from risk, interdependent self-construals should lead to more risk-taking.

Study 3 is designed to show that interdependent self-construals can decrease risk-taking (replicate findings from Studies 1 & 2) as well as increase risk-taking (a new effect) within the same study. To this end, participants were experimentally induced to think about the self as independent or interdependent before completing a measure of risk-taking. In the risk-taking measure, some of the items had the potential costs of a risky action being shared with others, however, in other items, the potential costs of a risky action were not shared with others but borne primarily by the individual.
Method

Participants.

Sixty-six Ohio State University undergraduates (23 female, 43 male) participated in the study in exchange for course credit. Participants were randomly assigned to condition and tested in groups of 2 to 8.

Self-construal manipulation. Participants completed the self-construal manipulation from Study 1: the I vs. We word search (Brewer & Gardner, 1996). That is, in a paragraph describing a trip to the city, half of the participants were randomly assigned to the independent self-construal condition and asked to circle singular pronouns (e.g., I, my) whereas the other half of the participants were randomly assigned to the interdependent self-construal condition and asked to circle plural pronouns (e.g., we, ours).

Cost burden manipulation. Risk-taking was measured using a modified CDQ — six CDQ scenarios and six CDQ-like scenarios. Specifically, to replicate the previous effect, that interdependent self-construals decrease risk-taking when the potential costs of a risky action are shared, the six CDQ scenarios used in Studies 1 & 2 where the potential costs of a risky action were shared were used (i.e., six CDQ scenarios). To illustrate that interdependent self-construals can increase risk-taking if the individual shoulders the cost of a risky action and not others, six new CDQ-like scenarios were created (see Appendix D)(i.e., six CDQ-like scenarios). In each of these CDQ-like scenarios, as in the items in the CDQ, there are two courses of action to choose from: (a) a high-risk, high-reward option or (b) a low-risk, low-payoff action. To reiterate, what differentiates the two, is that the CDQ-like items are designed such that the potential costs associated with the
risky course of action are borne by the individual and not shared with others; the potential costs of risky actions seem to be shared with others when the individual as well as others can be affected by risky actions in the original CDQ items (see Appendix B; Kogan & Wallach, 1964).

*Risk-taking measure.* As in the previous studies, the minimum odds it would take for the individual to take the high-risk, high-reward action in each of the 12 scenarios was used as the measure of risk-taking. After responding to each of the 12 scenarios, participants then completed a demographic questionnaire. As in the previous studies, a funnelled debriefing was administered and none of the participants were able to identify the relationship between the self-construal manipulation and responses on the CDQ. Afterward, participants were carefully debriefed and dismissed.

**Results and Discussion**

As in the previous studies, scores on the modified CDQ were transformed such that higher scores indicated greater amounts of risk-taking. Transformed CDQ scores were submitted to a Prime (Independent vs. Interdependent self-construal) × Cost burden (Other(s) share cost vs. Individual bears cost) mixed ANOVA with repeated measures on Cost burden. Unlike the previous studies, there was no significant effect of Prime ($M_{Interdependent} = 21.04$ vs. $M_{Independent} = 20.98$), $F(1, 64) = 0.01, p = .94$. There was also no significant effect of Cost burden ($M_{Other(s) shares cost} = 20.71$ vs. $M_{Individual bears cost} = 21.32$), $F(1, 64) = 1.44, p = .23$. Importantly, the Prime × Cost burden interaction emerged as a significant effect, $F(1, 64) = 14.78, p = .04$ (see Figure 3). Replicating the findings from the previous two studies, simple effects tests revealed that when the potential costs of risky actions were shared with the others, participants in the interdependent condition
were less risky than participants in the independent condition ($M_{\text{Interdependent}} = 19.76$ vs. $M_{\text{Independent}} = 21.66$), $F(1, 64) = 4.25, p = .04$. Importantly, simple effects tests also revealed that when the potential costs of risky actions were borne by the individual only and not shared with others, participants in the interdependent condition were more risky than participants in the independent condition ($M_{\text{Interdependent}} = 22.32$ vs. $M_{\text{Independent}} = 20.31$), $F(1, 64) = 4.11, p = .05$.

In the context of Studies 1 & 2, this latter finding shows a new effect: interdependent self-construals increase risk-taking. This novel finding illustrates that interdependent self-construals interact with the different costs & benefits a risky choice has for the individual vs. others to bias decision-making so that others and not just the individual may benefit from decisions that involve risk. In situations where others may suffer the potential costs of a risky action, interdependent self-construals lead to relatively less risk-taking than independent self-construals (Studies 1-3). However, in situations where the individual shoulders the cost of risk and others may benefit from risk, interdependent self-construals increase risk-taking relative to independent self-construals (Study 3).
Chapter 5: General Discussion

The studies reported here illustrate numerous findings. Specifically, that interdependent self-construals affect risk-taking if and only if the concerns of others and the individual conflict and the conflict is made salient. These studies also delineate the situations in which interdependent self-construals systematically decrease or increase risk-taking.

First, the studies suggest that interdependent self-construals, thinking about the self as someone who is influenced by others and as an agent who influences them back, influence decision-making only when other people will be affected or thought to be affected by the decision — situations in which the concerns of others and the individual conflict. In Studies 1 & 2, when it was not made salient that other people could be affected by a risky action, the degree to which people thought about themselves as interdependent with others did not influence risk-taking (i.e., there was no difference in risk-taking observed for participants experimentally induced to either an independent vs. interdependent self-construal). Conversely, self-construals did influence risk-taking in every experimental condition in which a risky action could affect others. It is important to be mindful that the differential effects of self-construals should only be observed in situations when the concerns of others and the individual conflict in a social situation. In social situations where they do not conflict, there should be no effect of self-construals on risk-taking.
Second, these studies suggest that interdependent self-construals interact with the situation to influence risk-taking. That is, it is not useful to think of interdependent self-construals as generally leading to either more or less risk-taking. These three studies illustrate the importance of identifying the different payoffs to individuals vs. others for specific courses of action that a decision-maker may face. In situations where the potential costs of a risky action were shared with other people, interdependent self-construals led to less risk-taking. However, in situations where the potential costs of a risky action were borne by the individual and not others, interdependent self-construals led to more risk-taking.

Third, it is important to note the varied operationalizations of the independent variable. Two different self-construal manipulations were used to manipulate interdependent vs. independent self-construals. Although the word search manipulation (Brewer & Gardner, 1996) was used in two of the three studies, as further evidence that it was in fact thinking of the self interdependently per se that influenced risk-taking, Study 2 conceptually replicated Study 1 findings by implementing a manipulation that calls into doubt a common reinterpretation of Study 1 findings (Oyserman & Lee, 2008).

Fourth, these are the first experimental studies examining the effect of independent and interdependent self-construals on risk-taking. Replicating data suggested by previous correlational research (Kim & Park, 2010), interdependent self-construals were shown to decrease risk-taking. Additionally, the results from these experimental studies showed that interdependent self-construals could be associated with more risk-taking.
Possible reinterpretations

**Construal levels.** Recently, researchers have suggested that interdependent self-construals may be related to global perceptual processing (Lin & Han, 2009; Kühnen & Oyserman, 2002, Study 1) and as a result to abstract, high-level construals (Förster & Dannenberg, 2010). According to construal level theory (CLT; Trope & Liberman, 2003), the same object or event can be mentally represented at varying levels of abstraction. High-level construals are mental representations that are abstract and invariant; they extract the essence of objects and events (e.g., cake is a sweet food, commonly served as dessert). On the other hand, low-level construals are concrete mental representations that are unique and context specific (e.g., my upcoming birthday cake will have 28 candles, be made of ice cream, have blue frosting, and so on).

I would like to argue, however, that self-construals (independent vs. interdependent) and construal levels (concrete, low-level vs. abstract, high-level) should be considered conceptually distinct. Logically, a person can think of an independent or interdependent self abstractly or concretely. For example, while I may think of myself as a self fundamentally embedded and connected to other lab members, the level of construal at which I am thinking about this may differ: I could think of myself as a lab member who is part of a larger network of other researchers (interdependent, abstract self-construal) or I could think of myself a lab member defined by very specific and concrete duties that affect what other researchers in my lab may be able to do (e.g., run studies in a shared lab space, use shared lab resources, present in lab meetings, and so on)(interdependent, concrete self-construal). On the other hand, I could think of myself in terms of my current direct experience (e.g., I am writing my dissertation in a coffee
shop by myself) which activates concrete, low-levels of construal (Trope & Liberman, 2003) (independent, concrete self-construal) but I could also think about myself as a constellation of abstract personality traits (e.g., warm, conscientious, agreeable) (independent, abstract self-construal).

This line of reasoning suggests that degree of interdependence and levels of construal can be related but are conceptually independent of one another. It is unclear the level of construal that is activated when experimentally inducing independent vs. interdependent self-construals in the lab, as I did in these studies. It is probably the case that depending on the specific induction used, interdependent self-construals could be related to more abstract construals and independent self-construals could be related to more concrete construals, the opposite: interdependent self-construals could be related to more concrete construals and independent self-construals could be related to more abstract construals, or lead to self-construals that are the same level of construal. Future research distinguishing construal levels (high-level vs. low-level) and self-construals (independent vs. interdependent) in regards to experimental inductions of self-construal is certainly warranted.

*Regulatory Focus.* Research by Lee, Aaker, & Gardner (2000) suggest that an interdependent self-construal is more related to prevention-focused information processing, sensitivity to negative changes from the status quo, than promotion-focused information processing, sensitivity to positive changes from the status quo. That is, interdependent self-construals cause people to focus more on the costs rather than the benefits of the situation (Lee et al., 2000). As such, an alternative explanation suggested by their findings is that it is not interdependent self-construals per se that leads to
systematic changes in risk-taking but prevention-focused information processing. That is, it is not thinking about the self as fundamentally embedded within a network of others, but a greater focus on costs rather than benefits that influenced risk-taking in these studies.

This regulatory focus interpretation is tenable for a portion of the data in Studies 1 & 2; namely, the decrease in risk-taking observed among interdependent participants when making decisions that involve the individual as well as others. According to this interpretation, interdependent participants, when making decisions where the concerns of others and the individual were in conflict, focused more on the potential costs of a risky decision than independent participants, and as such, were more conservative in their decision-making. However, it is unclear how this interpretation can account for the non-significant difference in risk-taking between interdependent and independent participants when making decisions that involve only the individual. If preferential weighting of costs vs. benefits is producing the effects, then decision-making should be more conservative whether the choice affects others in addition to the individual or just the individual.

However, more problematic for a regulatory focus interpretation of the data reported here are the results from Study 3 where an interdependent self-construal was shown to be associated with increased risk-taking. If interdependent self-construals are associated with preferential weighting of costs over benefits (Lee et al., 2000), then it seems like interdependent self-construals should always lead to decisions that are more conservative. However, in Study 3, I showed that interdependent self-construals led to decisions that were more risky. It is difficult to explain the data from Study 3 based on
the conclusions by Lee et al. (2000) regarding interdependent self-construals and prevention-focused information processing. This is not to say that regulatory focus is not related to self-construals, just that the relationship between interdependent self-construals and prevention-focused information processing may not always be necessary to influence decision-making.

_Egosystem vs. Ecosystem motivations._ Research by Crocker and colleagues (e.g., Garcia & Crocker, 2008) suggest two different motivational orientations for the self: an egosystem orientation vs. an ecosystem orientation. In the former, people have egosystem motives and are focused on satisfying their own personal goals ahead of the wellbeing of others. In the latter, people have ecosystem motives and are focused on the needs of others, including other people’s concerns as well as their own when deciding what to do. As Garcia & Crocker (2008, p. 454) have put it: “The term ‘ecosystem motivation’…refer[s] to a motivational framework in which people see themselves as part of a larger whole; a system of individuals whose needs are equally important, and whose actions have consequences for others...”

It is clear that ecosystem motivations, as described by Crocker and colleagues, and interdependent self-construals, as defined here, are very similar concepts and share a lot of the same properties. I would suggest that this work and previous research on self-construals, contribute to the burgeoning work of egosystem vs. ecosystem orientations by providing an intrapsychic person variable that is systematically associated with an egosystem orientation vs. an ecosystem orientation, an independent self-construal vs. an interdependent self-construal, respectively. Additionally, I would suggest that this work
pulls the self-construal literature and ego vs. eco-system literature closer together and highlights the overlap between the two.

Implications

*Implications for cross-cultural research*

These data provide a plausible psychological mechanism by which to explain cross-cultural differences in willingness to take risk (e.g., Kim & Park, 2010). Previous research (Kim & Park, 2010) suggests that people from the East (people from Korea and other Asian countries) tend to be less willing to take risk than people from the West (people from Australia, America, and Western European countries). Although people in the East and West differ on a number of dimensions (e.g., Hofstede, 1980), cross-cultural research has consistently found that people in the East tend to chronically think about the self interdependently whereas people from the West tend to chronically think about the self independently. The degree of interdependence that people from the East and West think about the self in everyday life may influence their risk-taking in real life and in the lab (e.g., Ozyerman & Lee, 2008).

Although cross-cultural data suggest that people from the East are predominantly less risky than people from the West (Kim & Park, 2010), the data reported here suggest that depending on the situation, people from the East could be more risky than people from the West. Specifically, these data suggest, that Easterners, in situations where the potential costs associated with risky actions are shared with others, will be less risky than Westerners; however, in situations where the potential costs associated with risky actions are borne by the individual only and not others, Easterners will be more risky than Westerners.
Implications for the Cushion Hypothesis

Readers familiar with the Cushion Hypothesis, as explicated by Hsee & Weber (1999), maybe confused with the predictions I make because on the surface of it, the Cushion Hypothesis makes the opposite predictions; interdependence with others should lead to more risk-taking. Specifically, Hsee & Weber’s (1999) suggest that people who are interdependent with others should be more willing to take risk as others can provide resources, a cushion as Hsee & Weber (1999) put it, in case a risky action fails. In regards to data, Hsee & Weber (1999, Study 2) showed that Chinese participants indicated a greater willingness to take risk investing their (hypothetical) savings in stocks with varying returns (e.g., a return of 0% or 8% of savings with equal probability) rather than putting their (hypothetical) savings in a savings account (e.g., a return of exactly 2% of savings) than American participants. Previous research has shown that the Chinese chronically think of the self as more interdependent but Americans chronically think of the self as more independent (e.g., Hofstede, 1980; Markus & Kitayama, 1991).

It is important to be mindful of some things regarding the Cushion Hypothesis data. First, the data compares people from two cultures and is thus correlational in nature: The risk-taking of Chinese participants is compared to American participants. Because of the correlational nature of the data, it is impossible to conclude that interdependent self-construals per se were the casual factor that led to more risk-taking among the Chinese vs. the American participants. Second, the process I propose seems quite different from the process suggested by Hsee & Weber (1999). I suggest that interdependent self-construals lead people to be more or less risky on the behalf of others because they weigh the concerns of others as much or more so than individual concerns;
however, Hsee & Weber (1999), if one believes that interdependent self-construals per se are driving the effect and not something else like cultural practices, suggest that interdependent self-construals lead people to be more risky because others can do something for a person in case risk results in failure. In other words, I am investigating how self-construals interact with the situation to lead to more or less risk-taking through concern for others whereas Hsee & Weber (1999) seem to be examining how self-construals can lead to more risk-taking when other people can do something for the self. I think this suggests that the research herein is investigating something different than the phenomenon that Hsee & Weber (1999) investigated.

In regards to the data herein, if the findings from Hsee & Weber (1999) are interpreted to mean that interdependent self-construals lead to more risk-taking because others can provide resources in case risky action fails, then there should be differential effects of self-construals on decisions that are framed as only affecting the self (Studies 1 & 2); the logic being that thinking about the self interdependently rather than independently is more likely to bring to mind resource providing others when making decisions that only affect the self. The data, however, suggests that the self-construal manipulation had no impact on risk-taking when the decisions were framed as only influencing the self; thus, providing no support for the cushion hypothesis predictions in these studies.

Implications for previous self-construal research

It is also important to note the difference in how interdependent self-construals are conceptualized here versus how interdependent self-construals have been conceptualized by other researchers. An interdependent self-construal, as defined here, is
thinking about the self as an individual who is influenced by others and as an agent who influences others back. That is, when people are thinking about themselves interdependently, they think about themselves as fundamentally embedded in some social network (of close others or a larger group), that their actions can influence others in their social network, and that the welfare of others is taken into consideration when making decisions.

Previous research has described interdependent self-construals in a similar ways. For example, Markus & Kitayama (1991) and others (e.g., Kühnen & Oyserman, 2002), have described interdependent self-construals as thinking about the self as a socially embedded, interpersonally connected self. However, other researchers have defined an interdependent self-construal as a construal of the self as defined by social relationships (e.g., “I am a son”; Trafimow et. al., 1991) or social groups (e.g., “I am an Ohio State student”; Turner et al., 1987) or both (Brewer & Gardner, 1996). What I would like to argue, is that the essence of an interdependent self-construal is not defining the self by other people per se but defining the self as someone who can influence other people and who lets other people influence the self. That is, although defining the self in terms of social relationships or social groups may make it more likely that people view the self interdependently, what matters is not defining the self by social relationships or social groups per se but whether people think that they influence others and allow others to influence the self in their relationships and groups. In the instances I have provided, interdependence does not mean viewing the self as a human, male offspring (i.e., a son) but as a self whose actions influence their parents (e.g., “It makes my parents proud when I do well in school.”) and as a self who lets their parents influence him (“My Mom is
right, I should try out for the tennis team.”). Similarly in regards to social groups, interdependence does not mean just thinking about the self as a member of a larger group or a more prototypical group member but as a self whose actions can influence the group (e.g., “If I look like a slob when I give my talk it could harm Ohio State’s reputation, so I’ll dress nice.”) and as a self who lets group norms and concerns influence him (e.g., for Ohio State students, replying “I-O” when a group member says “O-H”).

Implications for judgment & decision-making research

These data show how an intrapsychic person variable that has been historically studied by social psychologists (degree of interdependence in which a person thinks of himself) interacts with the situation to influence risk-taking, an oft-studied topic in judgment & decision-making (JDM; e.g., Kogan & Wallach, 1964; Kahneman & Tversky, 1979; Weber, Blais, & Betz, 2002), in systematic ways. These data, contribute to the growing trend among JDM researchers to understand not just person (e.g., impulsive sensation seeking; Zuckerman & Kuhlman, 2000) or situational variables (e.g., framing effects as illustrated by the “Asian Disease Problem” in Tversky & Kahneman, 1981) in regards to risk-taking but the interaction between the two (MacDonald, Fong, Zang, & Marineau, 2000; Wray & Stone, 2005).

The utility of paying more scrutiny to the person × situation in regards to risk-taking, and more broadly, decision-making, is illustrated by examining the CDQ itself, the dependent variable used to assess risk-taking in Studies 1 & 2. To date, since its publication, Kogan & Wallach (1964) (i.e., the CDQ), has been cited 655 times and 47 years have passed. This data is the first that I know of that separate the CDQ in regards to hypothetical decisions where it is salient that others will be affected vs. decisions
where it is not apparent others will be affected (see Appendix B). It is important to be mindful that original materials were used. Preliminary analyses indicated that the experimental manipulation of self-construals (interdependence vs. independence) had stronger effects on scenarios where others were involved than in scenarios where others were not involved. After these preliminary analyses, two coders, unaware of the hypotheses, divided the CDQ items into the two aforementioned types of scenarios. The preliminary analyses were confirmed. They were then confirmed again in a conceptual replication (Study 2).

It is clear from these data that not all risk is the same — it depends on the context (Weber et al., 2002). Differentiating choices and decisions that have the potential to impact others vs. not may be worth systematic investigation. Furthermore, the studies reported here suggest that previous person variables associated with risk-taking (e.g., impulsive sensation seeking Zuckerman & Kuhlman, 2000) may be moderated by whether the risky action is framed as affecting others or not and whether cost is shared with others or borne entirely by the decision-maker.

*Translational implications*

Whether risk-taking is good or bad depends on the costs & benefits of the situation. That is, although risk-taking tends to be associated with negativity (e.g., engaging in unprotected sex), in some situations, what is desirable is more risk. For example, in today’s economy, young people in America are thought to be too conservative in regards to saving for retirement (Lim, 2006). The data reported here suggest that decreasing or increasing a decision-maker’s interdependence can systematically influence risk-taking in a desirable way. Depending on the preferred
outcome — more or less risk-taking — once the differential payouts for the individual vs. others of risky choices are known, more or less interdependence can be introduced to lead to decisions in accordance with the preferred outcome.

Sometimes the most beneficial outcomes are associated with riskier actions. In these situations, when individuals bear the cost of a risky action and others do not, increasing interdependence will increase risk-taking and thus increase the likelihood of obtaining what is wanted. For example, to meet women, a group of single men will sometimes send a lone emissary from the group to gauge the receptiveness for social interaction from a group of women. It is easy to imagine the conflict for the man who is nominated for the task: If he does not do it, then there is no chance for him and his friends to have the pleasure of female company; however, if he does it, there is a risk he will suffer rejection. In situations such as these, increasing interdependence will lead to more risk-taking and thus a greater likelihood of obtaining the preferred outcome, in this instance, meeting women. However, in situations where costs are shared but risk-taking is desirable, these data suggest that decreasing interdependence should increase risk-taking. For example, a young, professional female, who is recently married, may be more likely to invest aggressively for her retirement (e.g., in stocks rather bonds) if she views herself less interdependently and more independently.

In other situations, the most beneficial outcomes are associated with less risky, more conservative actions. In situations where this is the case, when individuals bear the cost of a risky action and others do not, decreasing interdependence will lead to less risk-taking. For example, a teen, encouraged by friends, maybe less likely to commit an act of mischief (e.g., toilet papering a house) if he thinks about himself as less interdependent
with his peers. However, when costs of a risky action are shared and what is desirable is less risk-taking, then interdependence should be increased. For example, because the potential costs of unprotected sex are shared, increasing interdependence should lead to an increased likelihood of engaging in safe sex.

Future Directions

Thinking about the self as interdependent with others was studied in a risk-taking context for these studies; however, the decision-making process described here is equally applicable in other contexts. For example, research conducted by my colleagues and I on the psychology of martyrdom (Orehek, Sasota, Kruglanski, Ridgeway, & Dechesne, 2011) suggest that the degree to which people view the self as interdependent influences whether they would be willing to die for a collective cause or die to save the lives of other group members. Specifically, in these studies, we find that those participants primed with an interdependent self-construal vs. an independent self-construal were more likely to endorse statements like “If faced with circumstances that required as much, I would sacrifice my life for a cause that was important to me” and if the group was important to them, more likely to indicate in a variant of the footbridge dilemma (Swann, Gómez, Dovidio, Hart, & Jetten, 2010), that they would jump in front of a runaway trolley so that four other group members may live.

The studies reported here, and the studies described in the previous paragraph, indicate that the degree of interdependence in which people think of the self should systematically influence decision-making when the concerns of others and concerns for individuals conflict. If people view the self as relatively more interdependent, the logic goes, then people take into consideration the concerns of others and make decisions that
reflect others’ concerns (e.g., less or more risk-taking on behalf of the group, willingness to sacrifice the self so that others may live); however, if people view the self as relatively more independent, then people do not take others into consideration and make decisions that reflect personal concerns (e.g., less or more risk-taking on behalf of the individual, unwillingness to die for others). It may be fruitful to examine the influence of interdependent vs. independent self-construals in decision-making contexts other than risk-taking where the concerns of others and the individual conflict.

Examining how motivation affects decision-making when the concerns of others and the individual conflict may also be worthy of future research. In general, motivation should enhance the effect of interdependence. For people who view the self as interdependent, the more they care about others, the more they should take others into consideration when making their choices. The footbridge dilemma study mentioned above suggests as much; the influence of increasing group importance on willingness to die for others was only observed in the interdependent self-construal condition (and not the independent self-construal condition). Specifically, for interdependent participants, but not independent participants, the more important the group was to the participant, the more willing they were to die for others. In the studies reported here, it seems reasonable to assume that the other people affected by the risky action were other people the participants in the experiment could imagine naturally being motivated to care about: a spouse, a fiancé, children, employees, teammates, fellow POWs, and parents (see Appendix B & D). It would be expected that taking into account how much participants cared about the other people in the scenarios, that the more participants cared about them, the less risky they would be if the costs of a risky decision were shared with them
(Studies 1-3) but more risky if the costs were borne by the participant only and they stood to benefit from risk (Study 3).

Conclusion

Broadly, the work presented here showed that construing the self as interdependent, as a self whose actions influence others and as self who lets others influence him back, interacts with the differential costs & benefits of risky actions for the individual vs. others to influence risk-taking. First, the work showed that there are differential effects of interdependent vs. independent self-construals on risk-taking, but that the differential effects were constrained to situations in which the concerns of others and the individual conflict — situations in which the potential consequences of risk involve others as well as the individual. Second, the studies showed that interdependent self-construals could decrease and as well as, third, increase risk-taking. Fourth, the studies showed that whether an interdependent self-construal decreased or increased risk-taking depended on the differential costs & benefits of risky actions for the individual vs. others. If the individual as well as others shared the costs associated with a risky choice, then interdependent self-construals decreased risk-taking. If only the individual bore the cost associated with the risky choice and others stood to benefit from the risky choice, then interdependent self-construals increased risk-taking.
References


Appendix A: I vs. We Word Search

Instructions: Please read the paragraph on the next page carefully and circle all the PRONOUNS found within the paragraph. The pronouns may be singular (e.g. he, she, me, I, you, mine, yours, etc.) or plural (e.g. we, they, our, their, etc). Please take your time.

Independent self-construal condition

I go to the city often. My anticipation fills me as I see the skyscrapers come into view. I allow myself to explore every corner, never letting an attraction escape me. My voice fills the air and street. I see all the sights, I window shop, and everywhere I go I see my reflection looking back at me in the glass of a hundred windows. At nightfall I linger, my time in the city almost over. When finally I must leave, I do so knowing that I will soon return. The city belongs to me.

Interdependent self-construal condition

We go to the city often. Our anticipation fills us as we see the skyscrapers come into view. We allow ourselves to explore every corner, never letting an attraction escape us. Our voices fill the air and street. We see all the sights, we window shop, and everywhere we go we see our reflections looking back at us in the glass of a hundred windows. At nightfall we linger, our time in the city almost over. When finally we must leave, we do so knowing that we will soon return. The city belongs to us.
Appendix B: Choice Dilemma Questionnaire (CDQ)

CDQ items affecting both others and the individual decision-maker

Mr. A, an electrical engineer, who is married and has one child (underline added), has been working for a large electronics corporation since graduating from college five years ago. He is assured of a lifetime job with a modest, though adequate, salary, and liberal pension benefits upon retirement. On the other hand, it is very unlikely that his salary will increase much before he retires. While attending a convention, Mr. A is offered a job with a small, newly founded company, which has a highly uncertain future. The new job would pay more to start and would offer the possibility of a share in the ownership if the company survived the competition of the larger firms.

Mr. C, a married man with two children (underline added), has a steady job that pays him about $30,000 per year. He can easily afford the necessities of life, but few of the luxuries. Mr. C’s father, who died recently, carried a $15,000 life insurance policy. Mr. C would like to invest this money in stocks. He is well aware of the secure “blue-chip” stocks and bonds that would pay approximately 6% of his investment. On the other hand, Mr. C has heard that stocks of a relatively unknown Company X might double their present value if a new product currently in production is favorably received by the public. However, if the product is unfavorably received, the stocks would decline in value.

Mr. E is president of a light metals corporation (underline added) in the United States. The corporation is quite prosperous, and has strongly considered the possibilities of business expansion by building an additional plant in a new location. The choice is between building another plant in the US, where there would be a moderate return on the initial investment, or building a plant in a foreign country. Lower labor costs and easy access to raw materials in the country would mean a much higher return on the initial investment. On the other hand, there is a history of political instability and revolution in the foreign country under consideration. In fact, the leader of a small minority party is committed to nationalizing that is, taking over, all foreign investments.

Mr. D is the captain of College X’s football team (underline added). College X is playing its traditional rival, College Y, in the final game of the season. The game is in its final seconds, and Mr. D’s team, College X, is behind in the score. College X has time to run one more play. Mr. D, the captain, must decide whether it would be best to settle for a tie score with a play which would be almost certain to work or, on the other hand, should he try a more complicated and risky play which could bring victory if succeeded, but defeat if not.
Mr. L, a married 30-year-old research physicist (underline added), has been given a five-year appointment by a major university laboratory. As he contemplates the next five years, he realizes that he might work on a difficult, long-term problem, which, if a solution could be found, would resolve basic scientific issues in the field and bring high scientific honors. If no solution were found, however, Mr. L would have little to show for his five years in the laboratory, and this would make it hard for him to get a good job afterwards. On the other hand, he could as most of his professional associates are doing, work on a serious of short-term problems where solutions would be easier to find, but where the problems are of less scientific importance.

Mr. M is contemplating marriage to Miss T (underline added), a girl who he has known for a little more than a year. Recently, however, a number of arguments have occurred between them, suggesting some sharp differences of opinion in the way each view certain matters. Indeed, they decide to seek professional advice from a marriage counselor as to whether it would be wise for them to get married. On the basis of these meetings with a marriage counselor, they realize that a happy marriage, while possible, would not be assured.

CDQ items affecting only the individual decision-maker used in Studies 1 & 2:

Mr. B, a 45-year-old accountant, has recently been informed by his physician that he has developed a severe heart ailment. The disease would be sufficiently serious to force Mr. B to change many of his strongest life habits- reducing his work load, drastically changing his diet, giving up favorite leisure-time pursuits. The physician suggests that a delicate medical operation could be attempted which, if successful, would completely relieve the heart condition. But its success would not be assured, and in fact the operation might prove fatal.

Mr. F is currently a college senior who is very eager to pursue graduate study in chemistry leading to the Doctor of Philosophy degree. He has been accepted to both University X and University Y. University X has a worldwide reputation for excellence in chemistry. While a degree from University X would signify outstanding training in this field, the standards are so very rigorous that only a fraction of the degree candidates actually receive the degree. University Y, on the other hand, has much less of a reputation in chemistry, but almost everyone admitted is awarded the Doctor of Philosophy degree, though the degree has much less prestige than the corresponding degree from University X.

Mr. G, a competent chess player, is participating in a national chess tournament. In an early match he draws the top-favored player in the tournament as his opponent. Mr. G has been given a relatively low ranking in view of his performance in previous tournaments. During the course of his play with the top-favored man, Mr. G notes the possibility if a deceptive though risky maneuver which might bring him quick victory. At the same time, if the attempted maneuver should fail, Mr. G would be left in an exposed position and defeat would almost certainly follow.
Mr. H, a college senior, has studied the piano since childhood. He has won amateur prizes and given small recitals, suggesting that Mr. H has considerable musical talent. As graduation approaches, Mr. H has the choice of going to medical school to become a physician, a profession that would bring certain prestige and financial rewards; or entering a conservatory of music for advanced training with a well-known pianist. Mr. H realizes that even upon completion of his piano studies, which would take many more years and a lot of money, success as a concert pianist would not be assured.

Mr. J is an American captured by the enemy in World War II and placed in a prisoner-of-war camp. Conditions in the camp are quite bad, with long hours of hard physical labor and a barely sufficient diet. After spending several months in this camp, Mr. J notes the possibility of escape by concealing himself in a supply truck that shuttles in and out of the camp. Of course there is no guarantee that the escape would prove successful. Recapture by the enemy could well mean execution.

Mr. K is a successful businessman who has participated in a number of civic activities of considerable value to the community. Mr. K has been approached by the leaders of his party as a possible congressional candidate in the next election. Mr. K’s party is a minority party in the district, though the party has won occasional elections in the past. Mr. K would like to hold political office, but to do so would involve a serious financial sacrifice, since the party has insufficient campaign funds. He would also have to endure the attacks of his political opponents in a hot campaign.
Appendix C: Story self-construal manipulation

INSTRUCTIONS: We would like you to read a couple of paragraphs on the following page. After reading these paragraphs, you will be asked to make a judgment about the main character.

Independent self-construal condition

Sostoras, a warrior in ancient Sumer, was largely responsible for the success of Sargon III in conquering all of Mesopotamia. As a result, he was rewarded with a small kingdom of his own to rule.

About 10 years later, Sargon III was demanding warriors for a new war. Sostoras was obligated to send a detachment of soldiers to aid Sargon III. He had to decide who to put in command of the detachment. After thinking about it for a long time, Sostoras eventually decided on Tiglath who was a talented general. This appointment had several advantages. Sostoras was able to make an excellent general indebted to him. This would solidify Sostoras’s hold on his own dominion. In addition, the very fact of having a general such as Tiglath as his personal representative would greatly increase Sostoras’s prestige. Finally, sending his best general would be likely to make Sargon III grateful. Consequently, there was the possibility of getting rewarded by Sargon III.

Interdependent self-construal condition

Sostoras, a warrior in ancient Sumer, was largely responsible for the success of Sargon III in conquering all of Mesopotamia. As a result, he was rewarded with a small kingdom of his own to rule.

About 10 years later, Sargon III was demanding warriors for a new war. Sostoras was obligated to send a detachment of soldiers to aid Sargon III. He had to decide who to put in command of the detachment. After thinking about it for a long time, Sostoras eventually decided on Tiglath who was a member of his family. This
appointment had several advantages. Sostoras was able to show his loyalty to his family. He was also able to cement their loyalty to him. In addition, having Tiglath as the commander increased the power and prestige of the family. Finally, if Tiglath performed well, Sargon I would be indebted to the family.

**Question:** Do you admire Sostoras? Choose one.

- Yes
- No
- Not sure
Appendix D: CDQ-like items

Mr. B, a 45-year-old accountant, married with three kids, has recently been informed by his physician that he has developed a severe heart ailment. The disease would be sufficiently serious to force Mr. B into early retirement if left untreated which would leave him, his wife, and his kids destitute. The physician suggests that a delicate medical operation could be attempted which, if successful, would completely relieve the heart condition. But its success would not be assured, and in fact the operation might make the heart ailment worse which would leave him in a wheelchair. If the operation causes his condition to worsen, the insurance company will provide financial assistance for him and his family.

Mr. G, a competent chess player, and on the high school chess team, is participating in a national chess tournament. In an early match he draws the top-favored player in the tournament as his opponent. Mr. G has been given a relatively low ranking. During the course of his play with the top-favored man, Mr. G notes the possibility of a deceptive though risky maneuver, which might bring him quick victory and prestige to the team. At the same time, if the attempted maneuver should fail, Mr. G would be left in an exposed position and defeat would almost certainly follow.

Mr. H, a college senior, the son of two music teachers, has studied the piano since childhood. He has won amateur prizes and given small recitals, suggesting that Mr. H has considerable musical talent. As graduation approaches, Mr. H has the choice of going to medical school to become a physician, a profession that would bring certain prestige and financial rewards; or entering a conservatory of music for advanced training with a well-known pianist. Mr. H realizes that even upon completion of his piano studies, which would take many more years and a lot of money, acclaimed success as a concert pianist would not be assured. Mr. H thinks, given their occupation, that his parents would be much prouder having a concert pianist as a son than a physician.

Mr. J is an American platoon leader and along with the rest of his platoon is captured by the enemy in World War II and placed in a prisoner-of-war camp. Conditions in the camp are quite bad, with long hours of hard physical labor and a barely sufficient diet. After spending several months in this camp, Mr. J notes the possibility of escape by concealing himself in a supply truck that shuttles in and out of the camp. If Mr. J escapes he could get help for his platoon. Of course there is no guarantee that the escape would prove successful. Recapture by the enemy, to set an example to his platoon, could well mean Mr. J’s execution.
Mr. L, 30-year-old research physicist with a small but active research team, has been given a five-year appointment by a major university laboratory. As he contemplates the next five years, he realizes that he might lead his team into working on a difficult, long-term problem, which, if a solution could be found, would resolve basic scientific issues in the field and bring them high scientific honors. If no solution were found, however, Mr. L would have little to show for his five years in the laboratory, and this would make it hard for him to get a good job afterwards. On the other hand, he could as most of his professional associates are doing, work on serious short-term problems where solutions would be easier to find, but where the problems are of less scientific importance.

Mr. M is contemplating marriage to Miss T, a girl who he has known for a little more than a year. Although they say they love each other, recently, however, a number of arguments have occurred between them, suggesting some sharp differences of opinion in the way each views certain matters. Indeed, they decide to seek professional advice from a marriage counselor as to whether it would be wise for them to get married. On the basis of these meetings with a marriage counselor, they realize that a happy marriage, while possible, would not be assured. Miss T thinks that everything will work out and they should go ahead with marriage, but Mr. M is unsure.
Appendix E: Figures

Figure 1. Interdependent self-construals led to lower risk-taking when the potential costs or a risky action were shared and if and only if the decision affected others as well as the individual in Study 1. Higher scores reflect greater risk-taking.
Figure 2. Interdependent self-construals led to lower risk-taking when the potential costs of a risky action were shared and if and only if the decision affected others as well as the individual in Study 2. Higher scores reflect greater risk-taking.
Interdependent self-construals led to less and more risk-taking depending on where the burden of cost was placed. Replicating Studies 1 & 2, interdependent self-construals led to lower risk-taking when the potential costs associated with a risky action were shared with the others. Illustrating a new effect, interdependent self-construals led to more risk-taking, but only when the potential costs associated with a risky action was borne by the individual and not shared with others. Higher scores reflect greater risk-taking.