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Self-Framing of Risky Choice

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ABSTRACT

This research examines how decision-makers themselves spontaneously frame choice outcomes and the effects of the self-framing on risky choice. Pie-chart-displays were used to present the expected outcomes of monetary or life-death problems presented in terms of “outcome”, “survival outcome” or “mortality outcome”. Independent judges rated the hedonic tone of the participants’ interpretations of the pie-chart displays. The results revealed that (1) risk aversion was more prevalent when the choice options were self-framed positively, and vice versa. (2) The self-framing was the most positive in the mortality condition, suggesting a motivational function of self-framing. (3) The self-framing became significantly less positive in the monetary domain than in the life domain. (4) More positively framed options were more attractive options.

Key Words: Self framing, Affective/hedonic tone, Framing effects, Hedonic editing, Decision cues, Risk preference, Risky choice

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INTRODUCTION

One of the active and proliferating research areas in the literature of human judgment and decision making has been the study of framing effects, named after the finding that decision makers respond differently to different but objectively equivalent descriptions of the same problem (Tversky & Kahneman, 1981). Over the past decade, the existence of framing effects has been documented in many task domains with different kinds of respondents (for recent reviews, see Levin, Schneider & Gaeth, 1998, and Kühberger, 1998). However, the past "framing" research has largely focused on how the choice information framed by external sources influences the response of a decision maker. Little is known about how the decision-makers themselves spontaneously encode and frame a choice problem.

Why Study Spontaneous Self-Framing?

Studies of (exogenous) framing effects suggest that framing occurs automatically, without the decision maker being aware of the framing manipulation. A major limitation of the "framing" research, however, is the inability to predict what hedonic frame a decision-maker uses spontaneously when encoding choice options. A common feature of most studies of framing is that choice options are framed either positively or negatively by the experimenter rather than decision-makers themselves. Over the past years, an increasing number of investigators have noted the lack of research examining how decision makers spontaneously frame the choice outcomes and risk information (e.g., Elliott & Archibald, 1989; Fischhoff, 1983; Van Schie &

Van der Pligt, 1990). Thaler and Johnson (1990) identified this problem as an important issue requiring further empirical investigation.

The study of self-framing should benefit our understanding of risky choice for the following reasons. (1) In real life situations, choice options are commonly framed by the decision-makers themselves. (2) Real decision information is often ambiguous, requiring self-generated interpretation. (3) It is important to know whether the positive and negative self-frames of expected outcomes have the same directional effects on choice behavior as do the exogenous frames imposed by an experimenter or other people. (4) There are naturally occurring frames in life, such as the differing frames that are created by the buying and selling roles. Neale, Huber, Northcraft (1987), for instance, found that in negotiation experiments sellers think about the transaction in terms of gaining resources whereas buyers view the transaction in terms of loss. Similarly, the hedonic tone of self-framing is biased and situational. For instance, one type of self-framing (positive or negative) may be more dominant than the other in different task domains. (5) Finally, for understanding the functionality of framing effects, it is useful to examine whether the hedonic tone of self-framing is not only sensitive to the outcome probability and payoff amount but also social and organizational cues inherent in a decision problem.

Although the literature on self-framing is sparse, several experiments indicate that people prefer positive frames to negative frames (e.g., Elliott & Archibald, 1989; Van Schie & Van der Pligt, 1990). In addition, a decision maker's subjective framing of a choice problem as either a gain or a loss is influenced by perspective (e.g., buyer or seller) and biased towards viewing his/her actions in a positive light (Beggan, 1994). In these studies, the participants were asked to

indicate either which frame they preferred from alternatives provided by the researcher or the extent to which they thought that they would view a choice outcome as a gain or a loss.

In the present study, to avoid possible intervention caused by giving explicit instruction, an equivocal pie-chart display of expected choice outcomes was used to explore participants' self-framing of the displayed outcomes in both life and monetary domains. The hedonic tone of the wording in self-framing was then measured and analyzed.

STUDY 1

Sentence Completion Task of Self-Framing

A commonly used illustration of descriptive framing is a picture of a glass of water that is half full and half empty. The glass of water in the eyes of the viewer may be different due to both personal and situational variations.

According to the descriptive invariance axiom of expected utility theory, a viewer's preference order for the glass of water should not change as a result of the description of the glass of water. Would this normative axiom hold true for spontaneously framed choice options? How would a viewer verbalize or mentally frame this picture? Particularly, for the purpose of this research, what are the factors that influence the self-framing process? How does self-framing in turn influence decision making behavior?

Five specific hypotheses were examined in Study 1.

Hypothesis 1: The direction of self-framing effects will be consistent with findings in the framing literature. As Levin, Schneider and Gaeth (1998) summarized, previous studies of framing effects reveal a relatively consistent tendency for people to be more likely to take risks when options are framed negatively than when options are framed positively. The opposite

pattern, wherein risk taking is more common for the positive than the negative frame, is very rare. We expected self-framing to show the same directional effect.

Hypothesis 2: The overall hedonic tone of self-framing will be positive. When making choices at risk, the goal setting of the decision-maker should always be higher or more positive than the worst possible outcome. Compatible with the positive goal in a task, the expected outcomes would be more likely to be viewed in a positive light. Therefore, an overall positive tone of self-framing is expected.

Hypothesis 3: The hedonic tone of self-framing will be sensitive to the nature of the task. In managing money as opposed to life-death problems, people may become more strategic and thus more likely to use both positive and negative frames in evaluating risks. Levin, Schneider and Gaeth (1998) argued "the hedonic tone of the outcome at stake can be intrinsically positive (e.g., life) or intrinsically negative (e.g., debt), which may make the framing manipulation more complex or unnatural in the frame opposite the given hedonic tone" (p. 153). We predict that the hedonic tone of self-framing will be more positive in making a life-death decision than a monetary decision.

Hypothesis 4: The viewing perspective of the decision maker will play a role in determining the hedonic tone of self-framing. In a pilot study of self-framing, using a life-death problem with a pie-chart display of expected outcomes, we found that the framing of the participants in interpreting the displayed outcomes was dominantly positive (e.g., "200 out of 600 lives will be saved" as opposed to "400 lives will die"). However, others have proposed that the positive bias observed in this pilot study may be biased by the description of the pie-chart display (i.e., "the expected survival outcomes are illustrated as below"). The word "survival"

could bias the self-framing process so that the participants viewed the displayed outcomes in terms of lives being saved rather than lives lost.

In study 1, the pie-chart display will be presented in terms of “outcomes”, “survival outcomes” or “mortality outcomes”. It is predicted that the positive (survival) perspective will be more likely to elicit positive frames of the expected outcomes whereas the negative (mortality) perspective will be more likely to elicit negative frames of the same expected outcomes.

Hypothesis 5: The effects of self-framing will be most significant when the risk preference of the participants is less decisive, as indicated by a 50-50 choice distribution between a sure option and a game of equal expected value. Recent studies suggest that exogenous framing effects occur when the choice preference of the decision-maker is weak (e.g., Frisch, 1993; Wang, 1996; Zickar & Highhouse, 1998).

Method

Experimental Materials

A sentence-completion task was used to examine self-framing in two task domains (i.e., life and money). A pie-chart display of choice outcomes associated with two alternative options was placed below a story of a life-death dilemma involving 600 lives at stake (see Appendix 1).

As shown in Appendix 1, there were three versions of the life-death problem, creating three (i.e., neutral, positive and negative) viewing perspectives. In these three versions, the pie-chart display was introduced as presenting expected "outcomes", “survival outcomes” and “mortality outcomes”, respectively.

The participants were required to complete the sentences after viewing the pie-chart display: "Based on your interpretation of the pie-chart display of the expected outcomes,

complete the following sentences in your own words: If Plan A is adopted, _____ people will _____. If Plan B is adopted, there is a one-third chance that _____ people will _____ and a two-thirds chance that _____ people will _____."

In the monetary domain, the participants were asked to "imagine that the company from which you bought \$6 (or \$6000) worth of stock has filed a claim for bankruptcy recently. The company now provides you with two alternative options to deal with your money". The estimated outcomes of the two options were illustrated in a pie-char display similarly to the one used in the life-death problem. The participants were then asked to complete the following sentences in their own words, based on their interpretation of the pie-chart display:

"If Option A is adopted, \$ _____ of your money will _____. If Plan B is adopted, there is a one-third chance that \$ _____ of your money will _____ and a two-thirds chance that \$ _____ of your money will _____."

The two versions of the monetary problem were identical except in the total amount of money at stake.

In order to minimize the effects of making risky choice on the self-framing of the displayed outcomes, the participants were asked to make a choice between the sure option and the gamble after they had completed the self-framing task.

Note that the pie-chart display was equivocal in that the pie-slice in the display of the sure option could be interpreted either as the number of lives (or the amount of money) saved or as the number of lives (or the amount of money) lost. That is, a one-third slice of pie can be interpreted either as "lives saved" or as "lives lost", implying two-thirds saved. In this case, the negatively framed outcome is in fact more positive. Moreover, the two different interpretations of a one-third slice of pie indicate unequal expected values.

For the above reasons, the two types of interpretations of a one-third slice of pie need to be analyzed separately. However, given the constraints of the sentence-completion task, all but 3 participants interpreted that the slice represented the number of lives or the amount of money being saved. The data of the three participants were excluded from further analysis. Therefore, the subjective expected value of the two options was the same.

Rating and Recording of the Self-Framing Data

To achieve a more reliable and consistent valence coding of the self-framing of each participant, a group of forty independent judges (20 men and 20 women) were recruited from the same participant pool. All the self-frames of the pie-chart outcomes from the sentence-completion task for the life problems were listed on a sheet of paper in a random order. Another list of self-frames was made for the money problems. The judges were informed that these listed words and expressions were framed by their fellow students in evaluating either the outcomes of a life-death problem or a monetary problem. The two lists of the self-frames were presented to the judges in a balanced order. The judges were asked to rate the overall pleasant-unpleasant and positive-negative tone of each expression, on a 5-point scale with the numbers of 1 to 5 representing unpleasant & negative; slightly unpleasant & slightly negative; neutral; slightly pleasant & slightly positive; and pleasant & positive, respectively. The self-frames of the pie-chart outcomes and their received mean ratings are listed in Appendix 2 and Appendix 3.

Participants and Procedure

The participants were 164 undergraduate students (63 men and 101 women) who agreed to take part in the study for extra course credit. This datum does not include the three subjects who

interpreted a one-third slice as “lives lost”. They averaged 21.4 years of age. Using a between-subjects design, each participant received only one choice question.

Results and Discussion

As rated by the forty independent judges, the participants' self-framing was dominantly positive in the life domain across the three perspective conditions where the pie-chart display was presented in terms of “outcomes”, “survival outcomes” or “mortality outcomes”.

Using the neutral point on the 5-point rating scale as a reference, the participants' self-framed outcomes were classified into either a positive or a negative category. A self-frame with a mean rating greater than 3.0 was classified as a positive frame whereas a self-frame with a mean rating equal to or lower than 3.0 was classified as a negative frame. In cases when the participant used different hedonic frames (expressions) in describing the gamble outcomes, the two rating scores were averaged.

The percentages of the participants who used the positive frame in describing the expected outcomes in the survival, neutral and mortality perspective conditions were 80%, 92% and 100%, respectively.

Similarly, in the monetary domain, a majority (64.0%) of the participants self-framed the outcomes in the pie chart display more positively (see Table 1). However, the prevalence of positive framing was substantially reduced in the monetary domain. The difference in the hedonic tone of self-framing in the two task domains (i.e., life vs. money) was significant, $\chi^2(1, N=164) = 15.03, p < .0001$.

Hypothesis 1 was partially supported. The predicted effects of self-framing on risk preference were found only in the monetary decision task but not in the life-death decision task.

As shown in Table 2, under positive self-framing, the participants who self-framed the pie-chart outcomes positively were more risk averse than those who framed the same choice outcomes negatively, $\chi^2(1, N= 89) = 6.33, p < .001$ (see Table 1).

Insert Table 1 about here

These results support Hypotheses 2 and 3. Consistent with Hypothesis 2, the overall hedonic tone of self-framing was positive in both life and money domains. Consistent with Hypothesis 3, when dealing with life-death problems, the positive framing was particularly prevalent, but when dealing with monetary problems, the negative self-framing became significantly more popular in the participants' responses.

A caution needs to be taken regarding the observed dominance of positive self-framing. One possible bias of using the pie-chart display is that a one-third slice of pie may prompt the participants to see that piece as “what remains” not “what has been taken away”. Thus, the analysis should focus on the relative effects instead of absolute frequency of either positive or negative framing.

Hypothesis 4 concerns the effects of the perspective manipulation on self-framing. Although the positive self-framing was dominant across all three perspective conditions, the manipulation had a significant effect on how positive the self-framing was, $\chi^2(2, N= 75) = 6.96, p < .003$. However, the direction of the effect was the opposite of our prediction in Hypothesis 4. The self-framing was the most positive in the mortality perspective condition and the least positive in the survival perspective condition. The percentages of positive self-framing were 80%, 92%, and 100% under survival, neutral and mortality viewing perspective, respectively.

This result suggests a motivational function of positive self-framing to counterbalance an experimenter imposed negative perspective.

The perspective manipulation had no significant effect on the risk preference of the participants.

Consistent with Hypothesis 5, the self-framing effect on risk preference occurred in a condition where the participants were likely to be more indecisive. Only the participants in a subgroup were responsible for this effect of self-framing. The self-framing effect was significant in the \$6 condition, $\chi^2(1, N=45) = 5.99, p < .01$ but not in the \$6000 condition, $\chi^2(1, N=44) = 0.29, p < .59$. In the \$6000 condition, the dominant choice was the sure option under both positive and negative self-frames. In contrast, in the \$6 condition, the overall choice preference was less decisive and closer to a 50-50 split between the two choice-options. The overall choice percentage of the sure option was 81.8% in the \$6000 condition but 57.8% in the \$6 condition, $\chi^2(1, N=89) = 6.22, p < .001$. This result suggests that like its exogenous counterpart, self-framing is likely to be effective when the choice preference of the decision maker is indecisive.

However, it should be noted that a 50-50 choice pattern is only a proximal cue of indecisiveness in risk preference and may not be reliable in all conditions. It is possible that 50 percent of the participants strongly favored one option and the other 50 percent of the participants strongly favored the other option.

STUDY 2

Open Ended Self-Framing Task

To further examine the effects of self-framing, we employed an open-ended self-framing task in which a pie-chart display of expected outcomes was followed by open-ended interpretations without the constraints of sentence completion.

Recent studies have shown that the effects of framing depend on not only formal variables of probability or the amount of payoff but also some social and organizational variables, such as group, size and group composition (Levin, Schneider & Gaeth, 1998; Kühberger, 1998; Wang, Simons, & Brédart, 2001). The primary aim of Study 2 was twofold. First, the study examined the sensitivity of self-framing to group cues embedded in the life-death decision problem. Second, the study investigated further effects of self-framing in terms of which choice option would be preferred when the self-frames of the alternative options had the opposite affective tones.

1. Self-Framing in Social Contexts

In a recent paper, Wang, Simons, and Brédart (2001) suggest that verbal framing of choice options is used as a secondary cue in making decisions at risk, and thus tends to have its effects only when primary cues (e.g., kinship cue in life-death decisions) are either lacking or in conflict. Would self-framing be also sensitive to social cues embedded in a life-death decision problem?

It was predicted that (1) by classifying the open-ended self-framing into a positive and a negative (less positive) category, we predicted that participants would be more risk averse under positive self-framing and more risk taking under negative self-framing.

(2) Compared to a problem presented in a stranger context, the negative nature of the life-death problem in a kinship context would lead to a higher percentage of negative self-framing.

2. Hedonic Editing Hypothesis

There are many decision tasks wherein a cognitive evaluation may lead to indecisive or ambivalent risk preference. Under these circumstances, a choice option may be chosen based on its hedonic tone. According to this hedonic editing hypothesis, positively framed choice options would be more attractive.

Method

Experimental Materials

The pie-chart displays of choice outcomes of life-death problems involving a number of lives at stake were similar to those used in Study 1 (see Appendix 1). The life-death problem was presented in three hypothetical group contexts, a large group of 600 anonymous people, a small group of 6 anonymous people, and a kin group of 6 blood relatives of the participant.

The equivocal pie slice in the display is open for two possible interpretations. It can be either understood as the number of lives saved or understood as the number of lives lost. The first interpretation entails a subjective probability (survival rate) of one-third and the second interpretation means that the subjectively perceived survival rate is two-thirds.

Recording of the Self-Framing Data

The participants' self-framing of the two choice options was first coded by two research assistants independently, who had not known the purpose of the experimental manipulations at the time of data coding. The dichotomously classified frames based on the ratings of the

independent judges in Study 1 were then used as a reference list for double-checking. Any inconsistencies in the coding were identified and resolved by either reaching an agreement or being dropped if no agreement was reached.

Hedonic Gradient Scale of Self-Framing

Two data sets were constructed according to the participants' written interpretation of the pie-chart display. The first data set contained the participants who interpreted the pie-chart slice as the number of lives saved. The second data set included the participants who interpreted that the pie-chart slice as the number of lives lost.

For both data sets, the self-framing of the sure thing and gamble option was coded separately with one of the three types: positive code (P) in terms of lives saved, negative code (N) in terms of lives lost, and mixed code (M) in which the hedonic tone of self-framing is mixed or neutral.

The overall hedonic tone of self-framing was then measured by combining the hedonic codes for both the sure thing and gamble options. From the nine possible P, N, and M self-framing patterns, a five-degree hedonic scale that follows was derived.

PP: Both sure thing and gamble positively framed (P-P pattern of hedonic coding).

P: One choice option positively framed and the other neutral or mixed (P-M and M-P).

NP: Both options framed in a neutral or mixed way (M-M), or one framed positively and the other framed negatively (P-N and N-P).

N: One choice option negatively framed, and the other neutral or mixed (N-M, and M-N).

NN: Both options negatively framed (N-N).

From top to bottom, the hedonic gradient becomes more negative.

Dichotomous Codes of Self-Framing

In order to examine whether hedonically more positive frames correspond to a higher percentage of risk-averse choice and vice versa, the self-framing data were classified into two dichotomous categories. The positive self-framing category included PP and P hedonic types of self-framing, and the negative (less positive) self-framing category contained the remaining hedonic types (i.e., NP, N, NN).

Participants and Procedure

The participants were 253 undergraduate students who agreed to take part in the study for extra course credit. They averaged 21.9 years of age. The participants were randomly assigned to the three group-context conditions. Using a between-subjects design, each participant received only one life-death problem. After reading the cover story and viewing the display, the participants were required to give their written interpretations of the pie-chart displays and then make a binary decision between the two alternative options.

Results and Discussion

Hedonic Tone of Self-Framing

Of the 235 participants, 184 (78%) interpreted the choice outcomes of pie-chart display in terms of a 1/3 survival rate, and 51 (22%) interpreted the same display in terms of a 2/3 survival rate. Eighteen participants were screened out from further analysis, including 11 participants who did not explicitly specify their perceived probability of survival and 7 participants whose written interpretation was incomplete.

The hedonic tone of self-framing was similarly positive in both groups of the participants, those who interpreted the pie-chart outcomes in terms of a 1/3 survival rate and those who interpreted the same display in terms of a 2/3 survival rate. For the first group, the percentages of the PP, P, NP, N and NN hedonic codes were 43%, 22%, 28%, 4%, and 3%, respectively. For the second group, the percentages of the PP, P, NP, N and NN hedonic codes were 47%, 18%, 23%, 8%, and 4%, respectively.

Since the overall hedonic tone of self-framing was basically the same regardless of the interpretation of the survival rate, only the data from the participants who understood the expected survival rate as being one-third were used in the following analysis.

Self-Framing Effects

Table 2 presents the dichotomous self-framing data across three hypothetical social contexts.

Insert Table 2 about here

The effect of self-framing on risk preference was consistent with that of exogenous framing effects reported in the literature. The participants who self-framed the choice options positively tended to be more risk averse. Of the participants classified into the positive self-framing category, 58.3 percent of them favored the risk-averse choice (the sure thing). However, for those whose self-framing was more negative, only 37.5 percent of them chose the sure thing, $\chi^2(1, N=184) = 7.25, p < .007$.

One limitation of this analysis is that we don't know the flow of thought in terms of the exact causal relationship between self-framing and risk preference. Procedural control was taken

so that the risky choice was made after the self-framing was completed. However, although unlikely, it is still possible that the participant made a choice while interpreting the pie-chart display and the self-framing was a result of justification of the choice. Future studies using think-aloud protocols should be able to examine the direction of causality more closely.

Hedonic Encoding and Risky Choice

According to the hedonic editing hypothesis, positively encoded choice option would yield a higher chance of being chosen as the favored option, and a negatively or less positively framed option would have a lower chance of being selected. The best data for testing this prediction came from the participants who used opposite hedonic frames for the two options (i.e., the sure thing and the gamble) and thus could favor either a more positively framed option or a more negatively framed option. Of the 60 participants who self framed the two choice options with different hedonic tones, a majority of them (83%) chose the choice option that was framed more positively.

An alternative account of the above finding could be a post-decision rationale hypothesis as opposed to a pre-decision affective encoding hypothesis. Although the participant had to self-framed the choice outcomes before making a decision, one may frame an option positively because it was more attractive. The alternative mechanisms should be examined in future studies.

Social Context Effects on Self-Framing and Risk Preference

As predicted, the participants were more risk seeking when the life-death problem was presented in the kinship context. The percentages of the participants choosing the sure thing

option were 60.3%, 54.9%, and 36.7% in large group, small group, and kin group contexts respectively (see Table 2).

As predicted, the tone of self-framing was the most negative in the kinship context. The percentage of the participants who were classified into the negative self-framing category was significantly higher in the kin group context (45.0%) than in the large group context (30.0%) and in the small group context (29.4 %) combined, $\chi^2 (1, N= 184) = 4.10, p < .04$.

In addition, the social group context manipulation had a significant overall effect on the risk preference of the participants, $\chi^2 (2, N= 184) = 7.76, p < .02$. The difference in the percent of risk-averse choice between the two self-framing groups was larger in the stranger groups than the kin group. However, the significant difference was found between the large stranger group and the small stranger group.

GENERAL DISCUSSION

Properties of Self-Framing

Frames of choice options are different ways of presenting information to others whereas self-framing involves different ways of representing information to ourselves. Like the tone of voice used in communication, the hedonic tone of self-framing can be either positive or negative, affecting the risk perception of choice problems. Encoding an expected choice outcome positively or negatively may activate positive or negative associations in memory (e.g., Levin, & Gaeth, 1988). The tone of self-framing may also influence the affective valence of knowledge structure recruited from memory. This mechanism is hypothesized for the effects of attribute framing by Levin, Schneider and Gaeth (1998). The effects of the self-framing on risky choice

found in Studies 1 and 2 suggest that information framing involves not only the way of communicating risks to others but also the way of encoding and representing risks to ourselves.

Preconditions of Self-Framing Effects

In making monetary decisions, the hedonic tone of the spontaneously encoded information influenced the risk preference in a predicted direction. The participants were more risk averse under positive self-framing, and vice versa. However, this directional effect of self-framing was only significant in one of the two experimental groups where the participants showed a less decisive risk preference. The hedonic tone of information framing, either exogenous or spontaneous, appears to be a secondary cue in determining risk preference and is most effective when prioritized cues are lacking or in conflict.

Social Contexts and Cue Priorities

The priority of kinship cue over other social cues in making risky decisions in hypothetical dilemmas has been well demonstrated in recent studies (e.g., Burnstein, Crandall, and Kitayama, 1994, Petrinovich, and O'Neill, 1996; Petrinovich, O'Neill, and Jorgensen, 1993; Wang, Simons, & Brédart, 2001). The negative nature of the life-death problem in a kinship context not only made the participants perceive and spontaneously frame the expected outcome more negatively but also forced them to choose the gamble option to avoid the emotionally unacceptable certain loss. Group contexts thus have both informational effects on the process of encoding risks and behavioral effects on risk preference.

Hedonic Editing as a Tie Breaker

During the initial encoding of choice options, a decision-maker assigns hedonic labels to each anticipated outcome. These hedonic labels (frames) serve as decision weights in determining risk preference. Specifically, when choice preference is indecisive or ambivalent, the hedonic frames would be used so that more positively framed options are more likely to be chosen.

Hedonic editing is proposed as a tie breaking mechanism for resolving ambiguity or ambivalence in risk preference based upon the hedonic tone of self-framed choice options. To end indecisive cognitive calculations of alternative payoffs, one cognitive evaluation upon another may not work, and a stopping rule of an affective nature is needed. Regulating risk preference according to the hedonic tone of self-framing may be one way of solving this problem.

Consistent with the Hedonic Encoding hypothesis, positively labeled options were more attractive options, either because they were attractive in the first place or because they were attractively framed.

What have we learned in the two studies about functional and operational properties of self-framing of choice options?

Briefly, risk aversion was more prevalent when the choice options were self-framed positively and risk taking was more prevalent when the choice options were self-framed negatively. The effects and the hedonic tone of spontaneous self-framing were related to task domains (money vs. life), dependent on social contexts (stranger groups vs. kin group), and sensitive to viewing perspectives (survival, neutral, or mortality) of the decision-maker.

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Appendix 1

Appendix 1

A Pie-Chart Display of Expected Outcomes

Appendix 2

Ratings of the Self-Frames of the Expected Outcomes in the Life-Death Problem

Framing	Mean Rating (N = 40)
be killed.	1.08
die.	1.33
die from the fatal disease.	1.37
be ended.	1.38
cease to exist.	1.40
perish.	1.40
cease.	1.41
be ruined.	1.48
be taken as a result of the fatal disease.	1.55
end.	1.59
be gone.	1.60
end in disease.	1.63
be lost.	1.80
be taken.	1.80
be cut short.	1.91
be in risk.	2.44
be spared.	3.45
be saved, or have a better chance.	3.59
keep on going.	3.59

not die but live.	3.91
survive.	4.15
be alive.	4.18
be helped.	4.19
be saved from death.	4.23
be saved (they live).	4.23
survive the fatal disease.	4.25
live.	4.30
overcome the disease.	4.33
be saved (they will survive).	4.44
be saved.	4.60
be cured.	4.63

Appendix 3

Ratings of the Self-Frames of the Expected Outcomes in the Monetary Problem

Framing	Mean Rating (N = 40)
be gone for good.	1.18
disappear.	1.28
be lost.	1.30
become \$0.	1.30
be gone.	1.33
be taken.	1.33
amount to \$0.	1.33
go down the drain.	1.38
be lost or you got nothing.	1.38
be \$0, nothing.	1.38
be none.	1.40
be all gone.	1.43
be taken in the bankrupt.	1.44
none will be given back.	1.45
not be returned.	1.58
be lost because of poor investing.	1.60
become 1/3 of the value.	2.08
amount to 1/3 of the value.	2.16

be reduced to 1/3.	2.25
be 1/3.	2.38
not be left.	2.40
stay where it is.	2.93
be kept.	3.05
be returned to me so that I break even.	3.18
be all that it is worth.	3.23
stay and be kept.	3.25
still exist.	3.27
still be given back or stock be worth sheet.	3.29
break even.	3.30
be mine.	3.33
be received.	3.40
give a 1/3 return.	3.48
remain viable.	3.50
be all.	3.53
retain.	3.55
be available for me.	3.55
stay.	3.58
remain the same amount as initially invested.	3.58
remain.	3.60
full.	3.63
be gotten back.	3.63

be returned in you.	3.68
be retained.	3.69
stay the same.	3.70
be given for your profit.	3.85
be given to you.	3.85
return.	3.90
be returned back.	3.90
be returned / available to me.	3.91
go back to you.	3.95
be paid back to me.	4.06
come back to you.	4.10
be returned to you.	4.10
amount to its total value.	4.15
give you all return.	4.15
be given back.	4.16
be recovered.	4.18
be refunded.	4.20
be reinstated to you.	4.20
be returned in full.	4.25
be rewarded back to you.	4.30
be guaranteed.	4.31
be given back to you.	4.33
be returned to me.	4.33

be returned to me riskless.	4.35
not be lost; you will not lose any \$.	4.35
be fully returned.	4.38
be saved.	4.39
be returned.	4.46
be reimbursed.	4.49

Table 1

Self-Framing of Monetary Outcomes and Risky Choice for Recovering \$6 and \$6000 in Study 1.

The Amount of Money at Stake	Group Total (N)	Choice of the Sure Option across Framing Conditions	Choice of the Sure Option under Positive Frame	Choice of the Sure Option under Negative Frame
\$6	45	57.8%	73.1%	36.8 %
\$6000	44	81.8%	83.9%	76.9%
Overall	89	64.0%	79.0%	53.1%

Table 2

Self Framing Effects Examined in Three Social Contexts in Study 2

Social Group Context	Hedonic Category	Total (N)	Choice of the Sure Thing	Chi-Square Statistics
Large Group	Positive	51	66.7%	$\chi^2 = 2.89$ $p < .09$
Large Group	Less Positive	22	45.5%	
Small Group	Positive	36	61.1%	$\chi^2 = 1.91$ $p < .17$
Small Group	Less Positive	15	40.0%	
Kin Group	Positive	33	42.4%	$\chi^2 = 1.05$ $p < .31$
Kin Group	Less Positive	27	29.6%	

Note. The overall χ^2 (5, N= 184) = 13.39, $p < .02$. The unequal Ns for each pair of self framing groups was a result of participants' self-framing of the choice alternatives with unequally distributed hedonic gradient.

