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Reconciling Mood Congruency and Mood Regulation: The Role of Psychological Distance

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Abstract

Two important research streams on affect are mood congruency, which states that people respond in accordance with their mood, and mood regulation, which states that people try to manage their mood. We propose that an important moderator of such mood effects is the *psychological distance* between individuals and the consequences of their decisions. Mood congruency is predicted for psychologically distal outcomes, which lack affective feedback. In contrast, mood regulation is expected for psychologically proximal outcomes, which have strong affective feedback and can therefore impact current mood. This conceptualization is supported in a series of experiments, using manipulations and measurements of both mood and psychological distance. A meta-analytic classification complements these experiments by demonstrating that psychological distance reconciles prior mood congruency and mood regulation studies. We conclude by discussing the theoretical implications of this work for the interaction of affect and cognition.

Reconciling Mood Congruency and Mood Regulation: The Role of Psychological Distance

Two of the major streams of research on affect are mood congruency and mood regulation. Mood congruency states that people's responses match the valence of their mood. In contrast, the more motivational hypothesis of mood regulation states that people attempt to behave and make decisions in ways that maximize their hedonic state.

In many cases, responding in a manner that reflects one's current mood is inconsistent with regulating one's mood; that is, mood congruency and mood regulation often yield diametrically opposed predictions (e.g., Parrott and Sabini, 1990). For instance, mood congruency predicts that people in a sad mood (compared to a neutral mood) should generate more negative thoughts and judgments, whereas mood regulation predicts that people will engage in positive thinking in order to improve their mood. Nevertheless, over the past several decades, both theories have received a great deal of empirical support (see, e.g., Forgas, 1995). Given the seeming inconsistency between these two important theories, a critical question is what determines whether mood congruency or mood regulation will predominate in a given situation.

We suggest that an important moderator of the impact of mood is the *psychological distance* between individuals and the consequence of their actions and decisions (Lewin, 1951; Trope and Liberman, 2003). Specifically, building on research on temporal construal (e.g., Liberman and Trope, 1998), anticipatory emotions (e.g., Loewenstein and Lerner, 2003), and reward saliency (e.g., Mischel, 1981), we propose that mood congruency is most likely to be observed in decisions with psychologically distal outcomes, which lack the potential to influence current mood. Conversely, we posit that mood regulation is most likely to occur when outcomes are proximal to the self and easy to experience psychologically, and therefore, can impact the decision-maker's existing affective state.

The paper is organized as follows: we begin with a brief review of mood congruency and mood regulation, followed by a conceptual model that reconciles the two phenomena. Next, building on prior research, we consider the concept of psychological distance and its impact on affective states. This analysis leads to the proposition that psychological distance facilitates mood congruency effects, whereas psychological proximity promotes mood regulation attempts. We then present a series of experiments that support this hypothesis, using manipulations as well as measurements of both mood and psychological distance. The first four experiments investigate mood congruency and mood regulation in the context of choices between hedonic luxuries ("positive desires") and utilitarian necessities ("negative desires"). In these experiments, we manipulate psychological distance by using real versus hypothetical choices (Experiments 1 and 3), near versus distant future outcomes (Experiments 2 and 3), and high versus low probability outcomes (Experiment 4). A fifth experiment generalizes the results to a different (social) context and employs a measurement of psychological distance using the self-relevance of social judgments. Finally, we support the main proposition by showing that psychological distance can actually reconcile prior affect research. Specifically, we conduct a meta-analytic classification of previous mood congruency and mood regulation studies that demonstrates that the latter involved experimental tasks and stimuli that were more relevant and proximal to the self. We conclude by discussing the role of psychological distance in the interaction of affect and cognition.

Mood Congruency and Mood Regulation

Over the past three decades, considerable empirical evidence has accumulated regarding the operation of both mood congruency and mood regulation in human behavior, judgment, and decision making. Such mood effects have been demonstrated in a broad variety of domains, including memory, altruism, self-reward, likelihood judgments, and person-perception. In many

cases, empirical support for one theory appeared inconsistent with the other (e.g., Parrott and Sabini, 1990). Of course, other influential theories on affect have emerged (see, e.g., Pham 1998; Schwarz, 1990; Schwarz and Clore, 1983, 1996). In this research, however, we focus on reconciling mood congruency and mood regulation by examining psychological distance as a moderator of the two phenomena. Next, we briefly review research on these theories, followed by an analysis of the conditions that promote one mechanism over the other.

Mood Congruency

Mood congruency is a cognitive mechanism that has been used to explain a wide variety of mood effects in which there is a match in valence between people's mood and their responses (Mayer et al., 1992). That is, feelings serve as a filter for incoming stimuli and self-generated cognition, directing attention to, and increasing the accessibility of, information that is consistent with the person's mood (e.g., Bower, 1981). Support for the mood congruency hypothesis has been documented in numerous studies and across diverse contexts (for a review, see Blaney, 1986).

For example, research on memory has demonstrated that, compared to neutral mood, positive mood increases the likelihood of recalling positive information and negative mood tends to increase the likelihood of recalling negative information (e.g. Bower, 1981, 1987; Bower et al., 1981). The implications of mood-congruency were also demonstrated in social judgment and person perception studies. For instance, Forgas and Bower (1987) found that happy subjects formed more favorable impressions and made more positive judgments of others than did sad subjects. Relatedly, mood congruency effects were documented in studies on helping behavior, whereby, compared to neutral mood, positive [negative] mood increased [decreased] the likelihood of helping (e.g., Moore et al., 1973). Further evidence for mood congruency was found in research on likelihood evaluations of positive and negative future events (e.g., Johnson

and Tversky, 1983; Write and Bower, 1992).

Although a great deal of evidence supports the operation of mood congruency, such effects have been less robust and often inconsistent in the domain of negative affect (e.g., Forgas and Bower, 1987; Forgas et al., 1984; Isen, 1987). For example, some studies that found a facilitative effect of positive mood on recall of positive material did not find a facilitative effect of negative mood on recall of negative material (e.g., Bartlett et al., 1982; Nasby and Yando, 1982; Teasdale and Fogarty, 1979). Research on social judgments has revealed a similar pattern, whereby positive affect led to more pronounced mood congruency effects than did negative affect (e.g., Forgas and Bower, 1987; Forgas et al., 1984; Masters and Furman, 1976). Moreover, a considerable body of research (e.g., Cialdini et al., 1973, Isen et al., 1973) demonstrates that negative mood can even produce the same kind of responses as those produced by positive mood (i.e., compared to a baseline, neutral mood condition). As described next, a more motivational mechanism has been proposed to account for these findings.

Mood Regulation

The mood regulation hypothesis offers an alternative framework for understanding the effects of mood (e.g., Manucia, Baumann, and Cialdini 1984; Isen, 1987). According to this hypothesis, people regulate their feelings by generating thoughts and taking actions that maximize their hedonic state. Thus, a positive affective state is posited to generate attempts to maintain and protect that state, which typically entails behaving and thinking in a positive way.

In situations involving negative affect, the mood regulation hypothesis states that people will try to improve their mood. Such mood repair attempts have been demonstrated in a variety of domains. For example, negative compared to neutral mood has been found to enhance the likelihood of helping, forming favorable self-perceptions, and seeking immediate gratification

(e.g., Baumann, Cialdini, and Kendrick, 1981; Cialdini et al., 1973; Donnerstein et al., 1975; Tice, Bratslavsky, and Baumeister, 2001). Mood incongruency effects were also observed in the area of memory and have been interpreted as attempts to repair negative mood (e.g., Blaney, 1986; Isen, 1987; Parrott and Sabini, 1990).

Reconciling Mood Congruency and Mood Regulation

The research reviewed earlier offers a great deal of support for both mood congruency and mood regulation. To reiterate, mood congruency entails a symmetric effect, whereby relative to neutral mood, positive mood increases [decreases] the likelihood of positive [negative] responses and negative mood does the exact opposite. In contrast, mood regulation entails an asymmetric effect, whereby positive and negative moods give rise to similar responses.

Thus, in situations involving positive affect, the predictions of mood congruency and mood regulation typically coincide. For example, positive compared to neutral mood people are hypothesized to recall and predict happier events, judge people more kindly, and show greater benevolence. The shared prediction of the two theories may explain the high consistency in findings regarding positive mood.

However, in the case of negative affect, mood congruency and mood regulation yield diametrically opposed predictions. On the one hand, mood congruency predicts that sadness will lead people to recall and predict sadder events, judge people and objects more negatively, and tend to be less helpful. On the other hand, mood regulation predicts mood incongruent effects, involving, for example, an increased propensity to recall positive life events, seek self-reward, and engage in pro-social behavior (Cialdini et al., 1973; Mayer and Gaschke, 1988). Next, we present a conceptual model that reconciles the two mood mechanisms, leading to the proposition that psychological distance moderates their relative strength.

A Conceptual Model

A conceptual model that can account for both mood congruency and mood regulation is presented in Figure 1 (upper panel). Using the figure's terminology, mood congruency is assumed to occur when individuals' current affective state colors their *responses*, that is, their perceptions of, or behavior toward, external *stimuli* or their internal cognitive operations (e.g., memory). The current affective state is infused into the individual's thoughts, leading to a mood-congruent *outcome*. In contrast, mood regulation entails a (cognitive or behavioral) response intended to produce an outcome with a favorable *affective feedback* for the person's current mood state. For instance, people induced with negative affect may retrieve happy autobiographical memories or behave positively toward some stimulus (e.g., a needy person) in order to generate a happy outcome that could repair their negative mood. The notion that imagined decision consequences can influence current mood is supported by recent research on anticipatory emotions (Loewenstein and Lerner, 2003; Loewenstein et al., 2001; see also Slovic et al., 2002).

This analysis suggests that when the affective feedback loop is salient, mood regulation responses may override mood congruency. However, when such affective feedback is unlikely or weak, the default, automatic process of mood congruency will emerge (e.g., Forgas, 1991, 1995; Mayer et al., 1992).

Prior research supports the notion that weakening the affective feedback loop attenuates the mood regulation effect. Manucia et al. (1984) demonstrated that the enhanced altruism of sad compared to neutral mood participants is eliminated when participants are led to believe that their mood is temporarily fixed (using a bogus mood-freezing pill; see also Bushman, Baumeister, and Phillips, 2001). Relatedly, Tice et al. (2001) showed that the perceived ineffectiveness of mood regulation (manipulated using a "mood-freezing" aromatherapy)

attenuated the tendency to seek immediate gratification and frivolously procrastinate. Other research (Cialdini and Kenrick, 1976) has shown that compared to neutral mood, sad mood reduced altruism among young children (a mood congruency effect) but enhanced altruism among older children (a mood regulation effect). These findings were explained as a result of older children internalizing the self-gratifying nature of helping others, thereby responding with increased benevolence in order to repair their negative mood. In contrast, younger children were argued to be less likely to internalize the reward value of altruism; for them, helping others has no affective feedback.

Combined, these studies suggest that mood regulation is more likely when the outcomes of various responses can potentially affect the individual's current mood state, that is, when the affective feedback loop is salient. In contrast, mood congruency is likely to predominate when affective feedback is weak or non-existent. A critical issue, then, is identifying the factors that moderate the strength of the affective feedback loop, thereby influencing the likelihood of mood congruency versus mood regulation. Next, we propose that an important such moderator is psychological distance.

The Role of Psychological Distance

To understand how psychological distance may moderate the effects of mood on cognition and behavior, it is helpful to first consider prior research related to psychological distance and emotions. Accordingly, we first review such work, leading to the proposition that mood regulation predominates when cognitive and behavioral outcomes are psychologically proximal to the self, whereas mood congruency predominates when such outcomes are psychologically distal. This proposition is then tested using a series of five experiments and a meta-analytic classification of prior affect research.

The Concept of Psychological Distance

The notion of psychological distance was introduced by Lewin (1951) and was recently revived within construal level theory (Trope and Liberman, 2003). According to this theory, distant future outcomes are construed at a more abstract level, whereas near future outcomes are represented at a more concrete level. Importantly, Trope and Liberman (2003) suggested that temporal distance may be part of a broader, multi-faceted construct of psychological distance consisting of dimensions such as social distance (e.g., self vs. other; actual vs. possible identity), spatial distance, the degree of certainty of an outcome, and whether an outcome is real or hypothetical.

Consistent with a generalized conception of psychological distance, Kivetz and Simonson (2002) demonstrated that decisions to indulge increased when outcomes were (a) hypothetical rather than real, (b) temporally distal rather than proximal, (c) of low rather than high likelihood, and (d) experienced by another person rather than oneself. Psychological distance facilitates indulgence because it allows for a more conceptual or "cold" decision, in which feelings of guilt are attenuated. In other words, the increased psychological distance weakens the affective feedback (involving guilt) emanating from the outcome of indulging.

Recent research on the illusion of courage (Van Boven et al., 2004) provides further support for the notion that psychological distance tempers the affective feedback loop. This research shows that people state a higher willingness to engage in embarrassing performances when such performances are temporally delayed or hypothetical. Similar to the effect of psychological distance on guilt, here distance appears to weaken the affective feedback (involving fear of embarrassment) originating from the outcome of performing publicly.

Classic research on delay of gratification also highlights the role of psychological

distance in moderating the affective feedback loop. In this literature, Mischel and his colleagues have shown in numerous experiments that the tendency to wait for preferred rewards (e.g., food treats) is enhanced when the psychological salience of rewards is reduced, such as when (a) the reward is not physically present, (b) the subject engages in cognitive distractions from the reward, or (c) the reward is mentally represented in "cool" (abstract) rather than "hot" ways (Metcalfe and Mischel, 1999; Mischel, 1981, 1983; Mischel and Ebbesen 1970; Mischel, Ebbesen, and Zeiss 1972; for related analysis see also Hoch and Loewenstein, 1991). Reducing the salience of a stimulus increases its psychological distance from the self, thereby making the outcome of interacting with (e.g., consuming) that stimulus more difficult to experience psychologically. The increased overall psychological distance between the self and the outcome, in turn, weakens the affective feedback loop. For example, the temptation of eating a chocolate cake (essentially an affective consequence of imaging the outcome of eating that cake) is weaker when the cake is construed in an abstract (i.e., psychologically distant) manner.

Psychological Distance as a Moderator of Mood Congruency versus Mood Regulation

Figure 1 illustrates variations in psychological distance as a function of the dimensions discussed earlier. When the outcome of a particular response or operation (e.g., deciding whether to indulge) is delayed, unlikely, or hypothetical the psychological distance between the self and that outcome is greater. Such an increase in psychological distance is represented in the change from the upper to the middle panel of Figure 1 (i.e., $b' > b$). In addition, the bottom panel of Figure 1 depicts increased psychological distance due to a stimulus with low self-relevance or a cool or abstract representation (i.e., $a' > a$). The bottom panel can also be used to illustrate increased psychological distance as a function of a response or operation that is removed from

the self. For example, judgments and decisions may vary in their relevance for different individuals. The outcomes of decisions with lower self-relevance are psychologically more distal.

Regardless of the particular mechanism underlying changes in psychological distance, such variations will influence the strength of the affective feedback loop. When the outcome of a particular response is distant from the self, the affective consequences of this response will be weak. In such situations, people are unlikely to engage in motivated processing aimed at regulating their current mood. Rather, the abstract, cool, or conceptual nature of the situation will facilitate substantive, open processing that is expected to lead to affect infusion and mood congruency effects (see also Forgas, 1995). In contrast, we predict that individuals who are psychologically proximal to the outcomes of their responses will be motivated by a salient affective feedback loop to regulate their mood.

The discussion leads to the following proposition:

> Mood congruency will predominate when outcomes are psychologically distal from the self, whereas mood regulation will predominate when outcomes are psychological proximal to the self (hereafter, the psychological distance hypothesis).

Overview of Experiments

We investigated the psychological distance hypothesis in five experiments. The first four experiments examined mood congruency and mood regulation using choices between items of indulgence (or luxury) and necessity. In the first two of these experiments, we randomly assigned participants to one of three mood manipulations (negative, neutral, or positive)[1] and varied psychological distance by using real versus hypothetical choices (Experiment 1) and near versus distant future outcomes (Experiment 2). In Experiment 3, we replicated these manipulations of psychological distance but measured rather than manipulated participants' mood states. In

Experiment 4, psychological distance was varied using high versus low probability outcomes and mood was again manipulated.

Experiment 5 investigated mood congruency and mood regulation in a different context, namely social judgment, and measured psychological distance using the self-relevance of such judgment. In particular, we manipulated managers' and non-managers' mood and compared their judgments of potential job candidates. We assume that such judgments are more self-relevant and therefore psychologically closer for managers than for non-managers.

A meta-analytic classification of the mood congruency and mood regulation literatures complements these five experiments. Specifically, we asked two independent judges to categorize past studies according to the self-relevance of the experimental task and stimuli. We test the hypothesis that --- compared to studies demonstrating mood congruency --- those showing mood regulation involve lower psychological distance, as indicated in their use of experimental situations that are relatively more self-relevant.

Tests of Mood Congruency versus Mood Regulation Using Manipulations of Psychological Distance

The first four experiments manipulate psychological distance and test the main hypothesis by examining choices between indulgences or luxuries (e.g., a pampering massage, a gourmet chocolate, and an expensive bottle of wine) and necessities (e.g., groceries, batteries, and gasoline). We intentionally use luxuries and necessities since their defining characteristics allow for contrasting the predictions of mood congruency and mood regulation. More specifically, researchers have defined luxuries as *positive desires*, because they are hedonic objects that provide positive pleasure and allow going beyond what is needed (Berry, 1994; Scitovsky, 1992); in contrast, these authors have labeled necessities as *negative desires*, because they are functional objects that prevent a negative state of deficiency and allow meeting the bare needs of life.

Relatedly, luxuries can be conceptualized as maximal goals that add positives to one's life, whereas necessities can be viewed as minimal goals that eliminate or prevent negatives in one's life (Brendl and Higgins, 1996).

These definitions of luxuries and necessities as focusing on positive versus negative wants (respectively) give rise to diametrically opposed predictions of mood congruency and mood regulation. According to mood congruency, negative compared to neutral mood increases the attention directed toward negative aspects and decreases the attention directed toward positive aspects. Given that necessities focus on securing basic needs (i.e., eliminating negatives), whereas luxuries provide extra pleasure (i.e., adding positives), the former are more compatible with negative mood. Thus, mood congruency predicts that negative mood should increase the likelihood of choosing necessity over luxury. In contrast, according to mood regulation, sadness induces attempts to repair mood. Mood regulation, then, predicts that people in negative compared to neutral mood should be more likely to indulge in (hedonic) luxuries (see also Tice et al., 2001).

With respect to the effect of positive mood (relative to neutral mood), both theories lead to a similar prediction, whereby positive mood should enhance the likelihood of selecting luxury items. Thus, in Experiments 1 through 4, we test the hypothesis that psychological distance moderates the likelihood of mood congruency versus mood regulation by contrasting participants' choices under negative and neutral mood. For the sake of completeness, we also include a positive mood condition.

Experiment 1: Real versus Hypothetical Choices

In this experiment, we manipulate psychological distance by using real versus hypothetical choices between an indulgent luxury and a necessity. We test the prediction that participants will exhibit mood congruency when making hypothetical (i.e., psychologically distal)

choices and mood regulation when making real (i.e., psychological proximal) choices. More specifically, we expect that --- for hypothetical choices --- sad compared to neutral mood participants will be less likely to choose the luxury item, consistent with mood congruency. However, in the case of real choices, sad compared to neutral mood participants should be more likely to choose the luxury, consistent with mood regulation.

Method

Participants and design. Participants were 224 travelers (aged 20 to 70) who were waiting at domestic terminals in a major airport. Participants were run individually. They were randomly assigned to one of six conditions in a 3 (mood manipulation: negative, neutral, or positive) x 2 (type of choice: real vs. hypothetical) between-subjects design. The dependent variable was participants' choice between a luxury and necessity prize. The luxury prize was "a 1-hour pampering Swedish or Sports massage (retail value = $80) at a premium day spa at a location of your choice." Participants were told that the spa certificate was provided by SpaFinder.com and was redeemable at over 500 premier day spas throughout the United States. The necessity prize was "$80 of credit toward a future grocery bill at a local grocery chain." Participants were told that the grocery certificate was redeemable at any grocery chain throughout the United States.

Mood manipulation.[2] Four pairs of happy, sad, and neutral pictures were used in the positive, negative, and neutral mood conditions, respectively. In each (between-subjects) mood condition, participants received a questionnaire with four pairs of color photographs of similar valence. Participants were asked to consider each pair of pictures, briefly explain what they think each picture shows, and then indicate which of the two pictures in that pair tells a "happier," "sadder," or "more modern" story (positive, negative, or neutral mood conditions, respectively).

These pictures were selected from a large set of high-quality images based on a pre-test with 48 participants sampled from the same population.

Procedure. The experimenter approached participants who were sitting alone. In all six experimental conditions, participants first completed the mood manipulation task, which was presented as a "Psychology Department Study on Pictures" intended to examine how people evaluate various visual materials. In the real (psychologically proximal) choice conditions, after completing the mood manipulation task participants received a lottery form showing two prizes, a luxury (massage) and necessity (grocery) prize. The lottery form indicated that, as a token of appreciation, participants could enter a lottery (with winning odds of 1 in 100) in which the winner will receive one of two prizes. Participants were asked to indicate in advance which prize they choose to receive in case they win, so that the lottery organizers could plan ahead. The participants were then instructed to tear off the bottom half of the lottery form and to keep it as a receipt. This lottery receipt had a number on it and a Website address on which participants could subsequently check whether they had won.

In the hypothetical (psychologically distal) choice conditions, after completing the mood manipulation task (i.e., the "psychology department" survey) participants received a (supposedly) unrelated survey titled "Business School Questionnaire about Making Choices." This survey, which was printed using different paper, font, and layout, contained four hypothetical scenarios with choices between different options or products. The first hypothetical scenario consisted of the lottery described previously and contained identical information. Participants were asked to indicate in advance which prize they would have selected had they participated in such a lottery. These participants did not receive a lottery receipt.

After participants made their choices (in both the real and hypothetical conditions), they were given an additional page that included a mood manipulation check. Specifically, participants rated how they felt after evaluating the pictures using three 7-point items adopted from Pham (1998) that measure mood valence (unhappy/happy, pleased/annoyed, and bad/good mood).[3] At the conclusion of this and all subsequent experiments, before participants were debriefed and thanked, they were probed for suspicion and asked to indicate what they thought was the purpose of the research. With the exception of one participant in Experiment 4 and one in Experiment 5, none suspected that the evaluation of the pictures was intended to influence their mood or that it was linked to their decisions.[4]

Results and Discussion

Manipulation check. The three mood valence items were averaged into a single scale of mood valence ($\alpha = .88$), which was then subjected to a 3 (mood manipulation condition) x 2 (type of choice) analysis of variance (ANOVA). The mood manipulation had a significant effect on the mood valence scale, $F(2, 166) = 101.5$, $p < .001$. Participants in the negative mood conditions ($M = 2.9$) reported feeling much sadder than did participants in the neutral mood conditions ($M = 4.4$), which in turn reported feeling much sadder than did participants in the happy mood conditions ($M = 5.6$). The average mood valence was significantly different between each pair of mood manipulation conditions (all p's $< .05$). No other effect was significant on this scale.

Choice between luxury and necessity. The choice shares of the luxury (massage) prize relative to the necessity (grocery) prize are presented in Figure 2. We used a logistic regression to test the psychological distance hypothesis, which predicts that sad compared to neutral mood participants will be less likely to choose the luxury over the necessity prize when making

hypothetical choices (consistent with mood congruency), but will be more likely to choose the luxury prize when making real choices (consistent with mood regulation). The (dummy) dependent variable received a value of 1 [0] if the luxury [necessity] prize was chosen. The independent variables included the mood manipulation condition (negative or neutral), the type of choice (real or hypothetical), and the interaction of the mood condition and type of choice.

As predicted by the psychological distance hypothesis, the interaction between the mood manipulation condition and the type of choice was statistically significant and in the hypothesized direction (*wald*-$\chi^2 = 5.7$, $p < .05$). Among participants who made a hypothetical (i.e., psychologically distal) choice, those in the negative mood condition were significantly less likely to choose the massage over the grocery prize compared to those in the neutral mood condition (31% vs. 51%, $t = 1.9$, $p < .05$). In contrast, as expected, among participants who made a real (i.e., psychologically proximal) choice, those in negative mood were more likely to choose the massage compared to those in neutral mood (47% vs. 29%, $t = 1.6$, $p < .06$).

With regard to the choices of positive mood participants, as discussed previously, both mood congruency and mood regulation predict that such participants should be more likely to choose the luxury prize compared to neutral mood participants. Consistent with these predictions, participants in the two positive mood conditions (i.e., both hypothetical choices [60%] and real choices [50%]) were more likely to choose the massage over the grocery prize than participants in the neutral mood conditions (51% and 29%, respectively). Furthermore, mood congruency --- but not mood regulation --- implies that positive mood participants should be more likely to choose the luxury prize compared to negative mood participants. Indeed, consistent with the moderating role of psychological distance, positive mood participants were significantly more likely to choose the luxury prize compared to negative mood participants when they made

hypothetical (i.e., psychologically distal) choices (60% vs. 31%, $t = 2.7$, $p < .005$), but not when they made real (i.e., psychologically proximal) choices (50% vs. 47%, $t = .3$, $p > .1$).

In summary, the results support the hypothesis that mood congruency will predominate when outcomes are psychologically distal from the self, whereas mood regulation will predominate when outcomes are psychologically proximal to the self. Next, we further test the main proposition by using a different manipulation of psychological distance.

Experiment 2: *Near versus Distant Future Outcomes*

Earlier, we suggested that psychological distance is a multi-faceted construct that can be operationalized using a variety of methods (see also Trope and Liberman, 2003). Accordingly, in the present experiment we manipulate psychological distance by varying the temporal distance of outcomes. Prior research has argued that delayed outcomes and events are perceived as pallid and construed more abstractly relative to present outcomes (e.g., Liberman and Trope, 1998; Loewenstein, 1987; Prelec and Loewenstein, 1991). Consequently, mood congruency should predominate when decisions have distant future outcomes and therefore a weak affective feedback loop. In contrast, mood regulation should predominate when decisions have present or near future outcomes and can therefore produce strong affective feedback for the person's current mood.

Experiment 2 tests this prediction by asking respondents to choose between a luxury and necessity reward for participating in either a present or a future study. We expect that participants in the "future study" condition will be less likely to choose the luxury reward when they are in negative compared to neutral mood. In contrast, participants in the "present study" condition should be more likely to choose the luxury reward when they are in negative mood compared to neutral mood.

Method

Participants and design. Participants were 206 airport travelers (aged 18 to 60) who were run individually. They were randomly assigned to one of six conditions in a 3 (mood manipulation: negative, neutral, or positive) x 2 (temporal distance: low vs. high) between-subjects design. The dependent variable was participants' choice between a luxury and necessity reward. To further generalize the findings of the previous experiment, we used a different pair of luxury and necessity items. The luxury reward was "Godiva 4 Piece Assorted Deluxe Chocolates (containing Dark Chocolate Cream Heart, Ivory Marble Scallop Shell, Milk Vanilla Caramel and Cherry Cordial)," whereas the necessity reward was a pack of "6 AA or AAA Alkaline Batteries (from Duracell or Energizer)."

Procedure. In all six conditions, the experimenter asked the respondent to participate in two (supposedly) unrelated studies conducted by the psychology department and the business school of the same university. The participant first completed a survey titled Psychology Department Study on Pictures, which consisted of the mood manipulation and was identical to the one used in the previous experiment. Then, the participant continued to the second survey, which was printed using different paper, font, and layout and was presented as a Business School Questionnaire about Making Choices. This survey contained four unrelated problems, the first of which consisted of the experiment's dependent variable. Specifically, participants were informed that the business school has decided to reward people for completing surveys and was searching for the best such "thank you" reward. In the present study (low temporal distance) condition, respondents were asked to imagine that they were just about to receive a thank you reward for participating in the current study. They were told that they could now choose between deluxe chocolates and alkaline batteries as their reward. In contrast, in the future study (high temporal

distance) condition, respondents were asked to imagine that sometime in the future they would participate in a study and would be offered a thank you reward. They were told that they would be able to choose between chocolates and batteries as their reward. After participants made their choices (in either the present or future study condition), they were given an additional page that included the mood manipulation check (identical to the one used in the previous experiment).

Results and Discussion

Manipulation check. The three mood valence items were averaged into a single scale of mood valence ($\alpha = .84$), which was then subjected to a 3 (mood manipulation condition) x 2 (temporal distance) ANOVA. The mood manipulation had a significant effect on the mood valence scale, $F(2, 143) = 73.8$, $p < .001$. Participants in the negative mood conditions ($M = 3.2$) reported feeling much sadder when they evaluated the pictures than did participants in the neutral mood conditions ($M = 4.3$), which in turn reported feeling much sadder than did participants in the happy mood conditions ($M = 5.3$). The average mood valence was significantly different between each pair of mood manipulation conditions (all p's $< .05$). No other effect was significant on this scale.

Choice between luxury and necessity. The choice shares of the luxury (chocolates) reward relative to the necessity (batteries) reward are presented in Figure 3. We used a logistic regression to test the psychological distance hypothesis, which predicts that sad compared to neutral mood participants will be less likely to choose the luxury over the necessity reward when making distant future choices (consistent with mood congruency), but will be more likely to choose the luxury reward when making present choices (consistent with mood regulation). Supporting this hypothesis, the interaction between the mood manipulation condition (negative or neutral) and the temporal distance of the outcome (present or future) was statistically

significant and in the hypothesized direction (*wald*-χ^2 = 3.8, p = .05). Among participants who chose a reward for a future study (i.e., a psychologically distal outcome), those in the negative mood condition were less likely to choose the chocolates over the batteries reward compared to those in the neutral mood condition (60% vs. 74%, t = 1.2, p = .1). In contrast, among participants who chose a reward for the present study (i.e., a psychologically proximal outcome), those in negative mood were more likely to choose the chocolates reward compared to those in neutral mood (77% vs. 60%, t = 1.6, p < .06).

Overall, the results supported the hypothesis that mood congruency will predominate when outcomes are psychologically distal from the self, whereas mood regulation will predominate when outcomes are psychologically proximal. These findings are consistent with the pattern of choices observed in Experiment 1, in which psychological distance was manipulated using real versus hypothetical choices. However, both experiments manipulated participants' mood. Accordingly, the next experiment provides a more general test of the psychological distance hypothesis by measuring participants' natural mood.

Experiment 3: *A Generalization Using Measurement of Affective States*

In this experiment, we measured participants' natural mood before they made their choices. We employed the scenarios, choice stimuli, and psychological distance manipulations used in Experiments 1 and 2. Specifically, one group of participants chose between a luxury and necessity prize in a (hypothetical or real) lottery. A second group of participants chose a thank you reward for a (present or future) study.

Method

Participants and design. Participants in the lottery test were 155 travelers (aged 18 to 65) who were waiting for trains at sitting areas in a major train station. Participants were run

individually. They were randomly assigned to either a real (i.e., psychologically proximal) or a hypothetical (i.e., psychologically distal) lottery choice. The dependent variable was participants' choice between the luxury (massage) and necessity (grocery) prizes described in Experiment 1.

Participants in the thank you reward test were 101 students (aged 17 to 32) at a large East Coast university. They were paid $7 each for their participation in several unrelated studies, which took place in a behavioral research lab. Participants were randomly assigned to either a "present study reward" (i.e., low temporal distance) or a "future study reward" (i.e., high temporal distance) condition. The dependent variable was participants' choice between the luxury (chocolates) and necessity (batteries) rewards described in Experiment 2.

Procedure. In both conditions of the lottery test, participants were first given a page with several background questions. These questions included the mood measurement, in which participants were asked to rate how they felt using the three 7-point mood valence items mentioned earlier. Participants then received another page, which contained the (hypothetical or real) lottery. The real lottery was described as a token of appreciation for participating in the study, whereas the hypothetical lottery was described as part of the study. The hypothetical and real lotteries were identical to those used in Experiment 1. After participants made their lottery prize choice, they completed two additional pages from an unrelated study. Finally, participants were questioned about the purpose of the research (none suspected the connection between the mood measurement and the lottery prize choice), debriefed, and thanked.

In the thank you reward test, lab participants received a booklet with several unrelated questionnaires. The first "introduction" page thanked them for participating in the studies and asked for some background information including their current mood (using the scale mentioned previously). The second page contained the experiment's dependent variable. Specifically,

respondents were told that the researchers have decided to offer a non-monetary reward to lab participants and were therefore searching for the best such thank you reward. The (between-subjects) manipulation of low versus high temporal distance (present vs. future study condition, respectively) was identical to that used in Experiment 2. After participants made their choice, they completed a series of additional, unrelated surveys. Finally, participants were questioned about the purpose of the research (none suspected the connection between the mood measurement and the thank you reward choice), debriefed, and thanked.

Results and Discussion

In each test, the three mood items were averaged into a single scale of mood valence (α = .80 in both the lottery test and the thank you reward test). Using this mood valence scale, the participants in each test were classified into three equally sized groups, representing "negative," "neutral," and "positive" mood groups (means and standard deviations of mood valence scores in the negative, neutral, and positive mood groups were 4.0 [s.d. = .72], 5.3 [s.d. = .25], and 6.5 [s.d. = .46] in the lottery test, and 3.3 [s.d. = .79], 5.0 [s.d. = .21], and 6.3 [s.d. = .53] in the thank you reward test, respectively). Figure 4 presents the choice share of the luxury relative to the necessity item in each test according to the mood groups.

In each test, we used a logistic regression to examine the psychological distance hypothesis, which predicts that negative compared to neutral mood participants will be less likely to choose the luxury over the necessity item when making psychologically distal choices (consistent with mood congruency), but will be more likely to choose the luxury item when making psychologically proximal choices (consistent with mood regulation). The (dummy) dependent variable received a value of 1 [0] if the luxury [necessity] item was chosen. The

independent variables included the measured mood group (negative or neutral), the type of choice (proximal or distal), and the interaction of the mood group and type of choice.

In the lottery test, consistent with the psychological distance hypothesis, the interaction between the measured mood group and the type of choice was statistically significant and in the hypothesized direction (*wald*-χ^2 = 4.3, $p < .05$). Among participants who made a hypothetical (i.e., psychologically distal) choice, those in the negative mood group were significantly less likely to choose the massage over the grocery prize compared to those in the neutral mood group (25% vs. 48%, $t = 1.7$, $p < .05$). In contrast, as expected, among participants who made a real (i.e., psychologically proximal) choice, those in the negative mood group were more likely to choose the massage compared to those in the neutral mood group (48% vs. 29%, $t = 1.3$, $p < .1$).

Similar results were obtained in the thank you reward test, with the statistically significant interaction between the mood group and psychological distance (*wald*-χ^2 = 4.6, $p < .05$). Specifically, among participants who chose a reward for a future study (i.e., a psychologically distal outcome), those in the negative mood group were directionally less likely to choose the chocolates over the batteries reward compared to those in the neutral mood group (58% vs. 65%, $t = .5$, $p > .1$). In contrast, among participants who chose a reward for the present study (i.e., a psychologically proximal outcome), those in the negative mood group were significantly more likely to choose the chocolates reward compared to those in the neutral mood group (56% vs. 9%, $t = 3.1$, $p < .005$).

In addition, the choices of positive mood participants were consistent with the moderating role of psychological distance (see Figure 4). As discussed earlier, mood congruency --- but not mood regulation --- implies that positive compared to negative mood will be associated with increased indulgence. Indeed, pooled across the two tests, positive compared to negative mood

participants were more likely to select the luxury item *only* when they made choices with hypothetical or distant future outcomes (58% vs. 41%, $t = 1.6$, $p < .06$). When choices had real or immediate outcomes, there was no difference in the likelihood of indulging between positive and negative mood participants (55% vs. 51%, $t = .3$, $p > .1$).

Overall, the present experiment generalizes the results of Experiments 1 and 2. Further, the finding that the main proposition is supported even when transient mood is measured (rather than manipulated) underscores the pervasive role of psychological distance in affect. That is, the moderating effect of psychological distance extends beyond experimentally manipulated mood to natural variations in people's everyday mood.

Experiment 4: *High versus Low Probability Outcomes*

The experiments so far employed two different manipulations of psychological distance, involving variations in the realism and timing of outcomes. The findings suggest that psychological distance is a multi-dimensional construct, where distance on one dimension can be compensated for using proximity on another. In Experiment 1, a mood congruency effect was demonstrated for (delayed) hypothetical outcomes; this effect was predicted based on the notion that hypothetical outcomes are psychologically distal from the self, and therefore, have weaker affective feedback. However, in Experiment 2, a mood regulation effect was obtained when a hypothetical outcome (earning a reward) was made temporally immediate rather than delayed.

In the present experiment, we seek to further demonstrate the compensatory and multi-dimensional nature of the psychological distance construct. In particular, we employ a hypothetical lottery similar to the one used to demonstrate a mood congruency effect in Experiment 1. To manipulate psychological distance, we vary the probability of winning the lottery. When the winning odds are 1 in 100 (as in Experiment 1), we expect to replicate the

mood congruency effect previously obtained under this condition. However, when the odds of winning are increased to 1 in 3, the outcome of winning the prize should become more concrete and easier to experience psychologically. Thus, given a high enough likelihood of winning, even a hypothetical outcome should generate a strong affective feedback, thereby giving rise to a mood regulation effect.

In addition, the present experiment generalizes the psychological distance construct by examining variations in the self-relevance of a choice stimulus (see upper vs. bottom panel of Figure 1). As a proxy for the self-relevance of a stimulus, we measure participants' frequency of consuming the luxury item (a bottle of red wine). We predict that although, as a group, participants in the high probability condition should exhibit mood regulation, those for whom the luxury prize has low self-relevance should reveal a mood congruency effect. For the latter, the (imagined) consequence of winning a bottle of wine has a weak (or nonexistent) affective feedback. In contrast, there are substantial affective consequences for choosing the luxury prize for participants (in the high probability condition) for whom this prize is highly self-relevant. Such individuals are expected to reveal a stronger mood regulation effect than that exhibited by the overall group.

Method

Participants and design. Participants were 225 airport travelers (aged 18 to 60) who were run individually. They were randomly assigned to one of six conditions in a 3 (mood manipulation: negative, neutral, or positive) x 2 (probability of winning: low vs. high) between-subjects design. The dependent variable was participants' choice between a luxury and necessity prize. The luxury prize was "A Stellar Bottle of Red Wine (retail value = $50)" (described as "1997 Morey-Saint-

Denis, Les Ruchots, Arlaud: Grand Cru flavors in a Premier Cru red Burgundy …"). The necessity prize was "A $50 Prepaid Fuel Card (valid at all major gasoline chains)."

Procedure. The procedure was similar to the one used in the hypothetical lottery condition of Experiment 1. Specifically, in all six conditions, the experimenter asked the respondent (who was sitting alone) to participate in two (supposedly) unrelated studies conducted by the psychology department and the business school of the same university. Participants first completed the psychology department survey, which consisted of the mood manipulation task described earlier. They then completed the "business school" survey, which was printed using different paper, font, and layout. This survey contained four unrelated problems, the first of which consisted of the experiment's dependent variable. Specifically, participants were asked to choose between a luxury (a stellar bottle of wine) and necessity (a prepaid fuel card) prize in a lottery with either a 1% or 33% (manipulated between-subjects) likelihood of winning.

After participants completed the business school survey, they were given an additional page that included the measurement of the self-relevance of the luxury prize. In particular, participants were asked to rate how frequently they drink red wine using a seven-point scale ranging from "Very seldom" (1) to "Very frequently" (7). Participants then completed the mood manipulation check used in the previous experiments.

Results and Discussion

Manipulation check. The three mood valence items were averaged into a single scale of mood valence ($\alpha = .85$), which was then subjected to a 3 (mood manipulation condition) x 2 (probability of winning) ANOVA. The mood manipulation had a significant effect on the mood valence scale, $F(2, 157) = 77.8$, $p < .001$. Participants in the negative mood conditions ($M = 3.1$) reported feeling much sadder when they evaluated the pictures than did participants in the neutral

mood conditions ($M = 4.2$), which in turn reported feeling much sadder than did participants in the happy mood conditions ($M = 5.3$). The average mood valence was significantly different between each pair of mood manipulation conditions (all p's < .05). No other effect was significant on this scale.

Choice between luxury and necessity. Figure 5 (upper panel) presents the choice shares of the luxury (wine bottle) relative to the necessity (fuel card) prize. We used a logistic regression to test the psychological distance hypothesis, which predicts that sad compared to neutral mood participants will be less likely to choose the luxury over the necessity prize when the lottery has low chances of winning (consistent with mood congruency), but will be more likely to choose the luxury prize when the lottery has high chances of winning (consistent with mood regulation). Supporting this hypothesis, the interaction between the mood manipulation condition (negative vs. neutral) and the probability of winning the prize (low vs. high) was marginally significant and in the hypothesized direction ($wald\text{-}\chi^2 = 2.9$, $p < .1$). Among participants who chose a low probability (i.e., psychologically distal) prize, those in the negative mood condition were directionally less likely to choose the wine over the fuel card compared to those in the neutral mood condition (24% vs. 32%, $t = 0.7$, $p = .2$). In contrast, among participants who chose a high probability (i.e., psychologically proximal) prize, those in negative mood were significantly more likely to choose the luxury prize compared to those in neutral mood (40% vs. 21%, $t = 1.7$, $p < .05$).

In addition, the choices made by positive mood participants relative to those made by negative mood participants (see Figure 5, upper panel) supported the moderating role of psychological distance. Specifically, positive compared to negative mood participants were more likely to select the luxury item when they faced a low probability outcome (44% vs. 24%, $t = 2.0$,

$p < .05$), consistent with mood congruency, but not when they faced a high probability outcome (36% vs. 40%, $t = .4$, $p > .1$), consistent with mood regulation.

To examine the impact of the measured self-relevance of the luxury item, participants (in the high probability conditions) were divided into two groups based on a median split of their frequency of drinking red wine (means and standard deviations of frequency ratings in the high vs. low self-relevance groups were 4.9 [s.d. = 1.4] vs. 1.3 [s.d. = 0.7], respectively). Figure 5 (lower panel) depicts the choice shares obtained in these two groups as a function of mood. We used logistic regression to test the prediction that low self-relevance individuals will exhibit mood congruency, whereas high self-relevance individuals will exhibit mood regulation. The (dummy) dependent variable received a value of 1 if the luxury prize was chosen and 0 otherwise. The independent variables included the mood manipulation condition (negative vs. neutral), the level of self-relevance (low vs. high), and the interaction between mood and self-relevance.

Consistent with the psychological distance hypothesis, the interaction between the mood condition and the measured self-relevance of the luxury prize was significant and in the hypothesized direction (wald-$\chi^2 = 4.7$; $p < .05$). Among low self-relevance participants (in the high probability condition), those in negative mood were directionally less likely to choose the luxury over necessity prize compared to those in neutral mood (6% vs. 17%, $t = 1.0$, $p < .2$). Conversely, as expected, among high self-relevance participants (in the high probability condition), those in negative mood were significantly more likely to choose the luxury over necessity prize compared to those in neutral mood (72% vs. 27%, $t = 2.9$, $p < .005$). Thus, although as a group participants in the high probability condition exhibited a mood regulation effect of 19% (40% - 21%), those for whom the experience of drinking wine was relatively irrelevant (i.e., psychologically distal) exhibited mood congruency; in contrast, those for whom

the experience of drinking wine was highly self-relevant (i.e., psychologically proximal) displayed an enhanced mood regulation effect of 45% (72% - 27%).

In summary, the results of Experiment 4 supported the main hypothesis, using the likelihood of an outcome as a manipulation for psychological distance. Participants facing a low probability outcome made decisions that were congruent with their current affective state, whereas those facing a high probability outcome made decisions that were aimed at regulating their affect. The present experiment also measured psychological distance using variations in the self-relevance of a choice stimulus. We argued that the self-relevance of the luxury item affects how participants construe the prospect of winning this item. Whereas high self-relevance leads to a hot, psychologically proximal representation, low self-relevance induces a cold, psychologically distal representation. Such differences influence the intensity of affective feedback emanating from choosing the luxury item, thereby moderating the likelihood of mood congruency versus mood regulation.

Experiments 1 *through* 4: *Discussion*

Using different manipulations and measurements of psychological distance and mood, a series of four experiments tested the main hypothesis. These experiments demonstrated that when outcomes are psychologically distal, negative compared to neutral mood decreases the preference for luxuries relative to necessities. This preference structure is consistent with mood congruency, because negative mood is compatible with "negative desires" (i.e., necessities) but not with indulging in "positive desires" (see Berry, 1994; Scitovsky, 1992). However, when outcomes are psychologically proximal, negative compared to neutral affect enhances the preference for luxuries. Apparently, psychological proximity facilitates attempts to repair negative mood by

indulging in luxuries. Thus, Experiments 1 through 4 provide strong support for the role of psychological distance in reconciling mood congruency and mood regulation.

A Test Using Measurement of Psychological Distance

So far, all of the experiments examined the psychological distance hypothesis in the domain of self-indulgence. Therefore, it is important to test this hypothesis in a different context. Accordingly, the next experiment contrasts mood congruency and mood regulation using social judgment and decision making, an area in which a great deal of prior affect research exists. In this experiment, we also investigate an additional dimension of psychological distance, namely the self-relevance of the response or decision at hand.

Experiment 5: *Decisions with High versus Low Self-Relevance*

We proposed that the psychological distance between the self and the outcome of a particular response determines the likelihood of mood congruency versus mood regulation. In the present experiment, we measure this distance using the self-relevance of the response or decision task. We argue that the outcome of a low self-relevance (i.e., psychologically distal) response is relatively abstract and affectively neutral (see upper vs. bottom panel of Figure 1).

Participants in Experiment 5 are asked to make employment (hiring) decisions that are part of either their actual identity or a hypothetical identity. In particular, we study two groups of participants, managers and non-managers. Managers, we find, typically hire people as part of their actual job; non-managers, in contrast, rarely make such decisions. Thus, for managers, employment decisions should be self-relevant and psychologically proximal, whereas for non-managers such decisions should be relatively irrelevant and distal. If such differences exist in the construal of employment decisions, then managers will exhibit mood regulation and non-managers mood congruency.

We test this prediction using two scenarios, each describing a job candidate based on a mix of positive and negative characteristics (e.g., "excellent verbal ability," "ill tempered"). Following a mood manipulation, participants decide whether they would hire the candidates.

In the context of such hiring decisions, mood regulation and mood congruency lead to opposing predictions. Specifically, one way in which people attempt to repair negative affect is by engaging in positive and pro-social behaviors toward others (e.g., Manucia et al., 1984). Thus, according to mood regulation, negative compared to neutral affect should increase the tendency to hire the described job applicants.

In contrast, the mood congruency hypothesis states that negative affect increases [decreases] the attention directed toward negative [positive] information. Indeed, prior research on social judgment and person perception has demonstrated that people form impressions and make decisions about others in accordance with their mood (Bower, 1981; Forgas and Bower, 1987). Further, some studies have shown benevolence and pro-social behavior to decrease with negative affect (e.g., Moore et al., 1973). Thus, according to mood congruency, negative compared to neutral affect should lead to critical perceptions of the described job candidates and fewer hiring decisions.

As discussed earlier, the effect of positive mood does not distinguish between the predictions of mood congruency and mood regulation. Therefore, in Experiment 5, we test the psychological distance hypothesis by contrasting the hiring decisions of managers versus non-managers under negative and neutral mood. For the sake of completeness, we also include a positive mood manipulation.

Method

Participants and design. Participants were 308 travelers (aged 20 to 60) who were waiting at domestic terminals in a major airport. Participants were run individually during times when managers were most likely to travel. They were randomly assigned to one of three mood manipulation conditions (negative, neutral, or positive). At the conclusion of the experiment, participants indicated their job title and whether their position was defined as a "manager." The dependent variables consisted of two employment decisions.

To reiterate, in this experiment, psychological distance was measured using the self-relevance of social decisions. We suggest that hiring decisions are self-relevant and psychologically proximal for managers but irrelevant and distal for non-managers.[5]

Materials. Two employment scenarios were used. In both scenarios, participants were asked to indicate whether or not they would hire the described job candidate. In the salesperson scenario, participants read the following information:

> Imagine that due to an unforeseen growth in sales you need to hire one more salesperson for your company. You are currently considering hiring Steve. The following information is available about him:
>
> > Steve has extensive sales experience. He is also hard working and very independent. However, Steve is somewhat ill tempered and sometimes has problems with accepting authority.
>
> Steve told you that he really needs the job because he is supporting his parents financially.

In the lawyer scenario, participants read the following information:

> Imagine that you are a top executive in a mid-sized consumer goods company. After analyzing the human resources needs of the company, you realize that you should hire one

more corporate lawyer. You are currently considering Mark, for whom the following information is available (this information is relative to other applicants):

> Mark has excellent verbal ability and is very persuasive. He also has impressive negotiation skills. However, Mark has limited work experience and average writing skills.

Procedure. We employed a "two study" procedure similar to the one used in the previous experiments. Specifically, participants first completed the psychology department survey, which consisted of the mood manipulation task. They then completed a (supposedly) unrelated business school survey, which was printed using different paper, font, and layout. This survey contained the salesperson and lawyer scenarios. After participants completed the business school survey, they were asked to indicate their job title and whether their position was defined as a manager. They were then given an additional page with the mood manipulation check.

Results and Discussion

Manipulation check. The three mood valence items were averaged into a single scale of mood valence ($\alpha = .86$), which was then subjected to a 3 (mood manipulation condition) x 2 (participant job position) ANOVA. The mood manipulation had a significant effect on the mood valence scale, $F(2, 230) = 145.4$, $p < .001$. Participants in the negative mood conditions ($M = 3.1$) reported feeling much sadder when they evaluated the pictures than did participants in the neutral mood conditions ($M = 4.3$), which in turn reported feeling much sadder than did participants in the positive mood conditions ($M = 5.5$). The average mood valence was significantly different between each pair of mood manipulation conditions (all p's $< .05$).

Employment decisions. Figure 6 presents the percentages of participants who decided to hire the job applicant in each scenario. In each test, we used a logistic regression to test the

psychological distance hypothesis, which predicts that --- for non-managers --- sad compared to neutral mood will decrease the likelihood of making a positive employment decision (consistent with mood congruency), whereas --- for managers --- sad mood will enhance the likelihood of hiring (consistent with mood regulation). The (dummy) dependent variable received a value of 1 if the participant made a positive hiring decision and 0 otherwise. The independent variables included the mood manipulation condition (negative vs. neutral), the participant job position (manager vs. non-manager), and the interaction of the mood condition and participant job position.

In the salesperson scenario, consistent with the psychological distance hypothesis, the interaction between the mood condition and the participant job position was statistically significant and in the hypothesized direction (*wald*-$\chi^2 = 8.5$, $p < .005$). Non-managers in the sad compared to neutral mood condition were significantly less likely to hire the described candidate (30% vs. 59%, $t = 2.3$, $p < .05$). In contrast, as expected, managers in the sad compared to neutral mood condition were significantly more likely to hire the candidate (52% vs. 35%, $t = 2.1$, $p < .05$).

Similar results were obtained in the lawyer scenario, with the statistically significant interaction between the mood condition and participant job position (*wald*-$\chi^2 = 4.8$, $p < .05$). Specifically, non-managers in the sad compared to neutral mood condition were significantly less likely to hire the described candidate (67% vs. 90%, $t = 2.2$, $p < .05$). In contrast, managers in the sad compared to neutral mood condition were directionally more likely to hire the candidate (81% vs. 75%, $t = 0.9$, $p < .2$).

The choices of positive mood participants were also consistent with the notion that psychological distance leads to mood congruency and psychological proximity to mood regulation. In particular, mood congruency --- but not mood regulation --- implies that happy compared to sad mood will foster more positive decisions toward others. Accordingly, in both

scenarios, happy compared to sad mood led to significantly more hiring decisions only among non-managers (see Figure 6).

In summary, this experiment provides further support for the psychological distance hypothesis using hiring decisions as the experimental context. It is noteworthy that a great deal of prior research on affect has investigated social judgment and decision making, with evidence for both mood congruency and mood regulation. The present findings suggest that one determinant of such differential mood effects is the self-relevance of the required response or decision.

General Discussion

Mood congruency and mood regulation are two of the major theories that have emerged from research on affect. Although both theories enjoy substantial empirical support, they often make contradictory predictions. The present research sought to resolve this seeming inconsistency by advancing psychological distance as a moderator of the impact of mood. In this section, we briefly review the key results of five experiments that supported the psychological distance hypothesis. We then report a complementary meta-analytic classification that shows that psychological distance helps reconcile prior mood congruency and mood regulation studies. We also consider the potentially pervasive role of psychological distance in affect and cognition.

Review of Key Findings

We proposed that an important moderator of the impact of mood is the psychological distance between individuals and the outcomes of their decisions and responses. Specifically, decisions with psychologically distal outcomes have weak affective feedback, and consequently, are less effective as mood regulatory mechanisms. The relatively abstract, cold, and dispassionate nature of such decisions facilitates substantive, open processing that leads to affect infusion and mood congruency effects (e.g., Forgas, 1995). In contrast, decisions with

psychologically proximal outcomes give rise to salient affective feedback. Such decisions are more likely facilitate mood regulation effects.

The first four experiments supported the psychological distance hypothesis in the context of choices between pleasurable luxuries and functional necessities. We employed different manipulations of psychological distance, using choices with outcomes that were either hypothetical or real (Experiments 1 and 3), temporally delayed or immediate (Experiments 2 and 3), and of low or high probability (Experiment 4).

Experiment 4 also tested the main proposition using an unobtrusive, post-decision measurement of psychological distance. In particular, the self-relevance of the luxury stimulus was employed as an individual-level measure of psychological distance. As predicted, individuals for whom the luxury item was highly self-relevant revealed a pronounced mood regulation effect; in contrast, individuals for whom the luxury item was relatively irrelevant demonstrated a reverse effect, namely mood congruency.

Experiment 5 generalized the findings of the previous experiments by using a different (social) context and decision task. In this experiment, we measured psychological distance using the self-relevance of the required response (a decision whether to hire a potential employee). As hypothesized, mood regulation was exhibited by managers, for whom hiring others is a self-relevant (i.e., psychologically proximal) decision. In contrast, mood congruency was demonstrated by non-managers, for whom such decisions are relatively self-irrelevant (i.e., psychologically distal).

Combined, the experiments use a triangulation of methods with different manipulations and measurements of psychological distance as well as transitory mood. The results provide strong support for the hypothesis that psychological distance moderates the likelihood of mood

congruency versus mood regulation. Next, we report a preliminary meta-analytic classification of prior mood research that provides further evidence for this hypothesis.

A Classification of the Mood Congruency and Mood Regulation Literatures

We argued that psychological distance between the self and the outcomes of various responses increases the tendency toward mood congruency rather than mood regulation. As described earlier, psychological distance can be measured using the self-relevance of choice stimuli or required responses. When stimuli and response tasks are highly self-relevant, they engender (imagined) outcomes that are psychologically proximal and affectively intense. In contrast, the outcome of interacting with low self-relevance stimuli and tasks is psychologically distal, thereby weakening the affective feedback loop. Accordingly, higher self-relevance of a stimulus or response was shown to increase the likelihood of obtaining mood regulation versus mood congruency.

These findings are consistent with research by Forgas (1989, 1991) that demonstrated that sad mood enhanced the preference for a rewarding over a competent partner (for a subsequent experiment) when participants chose for themselves but not for others (see also Forgas and Fiedler, 1996). Relatedly, Parrott and Sabini (1990) recognized that self-relevance may moderate the tendency to regulate mood by recalling positive memories. These authors studied the effects of mood on memory, an area in which considerable evidence for both mood congruency and mood incongruency (i.e., regulation) has since emerged. They conjectured that "only memory tasks relevant to the subjects' mood and self-concepts would be expected to elicit mood regulation" (p. 334). They further argued that while recalling autobiographical memories has these qualities (see also Schwarz and Clore, 1983), other memory tasks, such as recalling words, lack the potential to influence current mood.

This discussion suggests that psychological distance, operationalized via self-relevance, may reconcile prior mood congruency and mood regulation studies. Specifically, consistent with the psychological distance hypothesis, it is expected that prior mood regulation studies should involve experimental tasks and stimuli that are more self-relevant to participants than those involved in prior mood congruency studies.

To investigate this prediction, two independent judges (psychology students who were unaware of the hypotheses of the present research) coded all empirical studies on mood congruency and mood regulation that have appeared in the leading psychology journals between 1970 and the present.[6] The judges were instructed to read the method section of each study and determine whether or not the study's task and stimuli were self-relevant to the described participants. The inter-judge reliability was 91%, and disagreements were resolved by discussion.

The results show a significant difference in the self-relevance of mood congruency and mood regulation studies. Specifically, the proportion of studies that were coded as self-relevant (as opposed to self-irrelevant) was 95% (38/40) in the mood regulation literature compared to 39% (15/38) in the mood congruency literature ($t = 6.4$, $p < .001$). Studies that were coded as self-relevant examined, for example, autobiographical recall, perceptions and evaluations of the self, and self-reward. In contrast, studies that were coded as self-irrelevant investigated, for example, word recall, perceptions and evaluations of objects and hypothetical persons, and likelihood judgments of personally irrelevant, future events.

In summary, this preliminary classification suggests that psychological distance can help explain the coexistence of both mood congruency and mood regulation effects in the extant literature. Here, we used self-relevance as a single measure of the distance between the self and the outcome of various responses. Future research could conduct a more comprehensive and

systematic meta-analysis of mood studies, by considering multiple dimensions of psychological distance and examining effect sizes. Such a meta-analysis may shed light on the relative importance of various distance dimensions in moderating the impact of mood.

The Role of Psychological Distance in the Interplay between Affect and Cognition

The present research provides insights on the nature of the psychological distance construct, its antecedents as well as consequences. In Experiments 1 through 4, psychological distance was manipulated by varying the realism, temporal immediacy, and likelihood of outcomes. In Experiments 4 and 5, as well as in the classification of the extant literature, psychological distance was measured via the self-relevance of responses and/or stimuli. The commonality between these different dimensions is that each affects the psychological distance between the self and the (imagined) outcome of the response at hand (see Figure 1). This distance, in turn, moderates the strength of the affective feedback emanating from the individual's judgment, decision, or behavior.

The findings support the notion that the multiple determinants of psychological distance are compensatory (see also Trope and Liberman, 2003). That is, distance on one dimension can be offset through proximity on another. For example, although ceteris paribus real outcomes are psychologically closer than hypothetical outcomes (see Experiment 1), the latter can be made more proximal by increasing their likelihood, temporal immediacy, or self-relevance (see Experiments 2, 4, and 5, respectively).

In this paper, we focused on how psychological distance --- via the affective feedback loop --- moderates the likelihood of mood congruency versus mood regulation. Yet, similar to its multiple antecedents, psychological distance may give rise to numerous consequences. For example, the impact of temporal distance on social-cognition has been thoroughly explored by

Liberman and Trope (1998; Trope and Liberman, 2000, 2003). We believe that psychological distance also plays an important role in domains located at the intersection of affect and cognition.

For instance, consider the extant literature on self-control, which suggests that psychological proximity leads to shortsighted (myopic) decision making (e.g., Ainslie 1975; Herrnstein and Prelec, 1992; Hoch and Loewenstein, 1991; Loewenstein 1996; Loewenstein and Prelec, 1992; Metcalfe and Mischel, 1999; Mischel et al., 1989). Such research shows that people are worse at delaying gratification when rewards are close in terms of time, physical space, or mental representation. However, psychological proximity to rewards may also induce over-control or *hyperopia* (Kivetz and Simonson, 2002). We posit that psychological proximity increases the susceptibility to both myopic and hyperopic self-control problems by intensifying the decision's affective feedback involving feelings of temptation and guilt, respectively.

Closely related to the topic of self-control and intertemporal behavior is risky choice. Work by Loewenstein, Slovic, and their collaborators has highlighted the major role of anticipatory affect in such decisions (e.g., Finucane et al., 2000; Loewenstein, 1996; Loewenstein et al., 2001; Peters and Slovic, 2000; Slovic, 1987; Slovic et al., 2002; Slovic, Flynn, and Layman, 1991). Further, Loewenstein et al. (2001) argue that emotional reactions to uncertainty often diverge from the cognitive evaluation of risks, and critically, that when such divergence occurs, emotions often drive behavior and choice. For example, when the consequences of the risk are temporally immediate, vivid, or personally relevant, anticipatory emotions may override cognitive assessments of the uncertainty. Similar to its influence on self-control, here, too, psychological proximity can have diametrically opposed effects, magnifying both the aversion to and seeking of risk by intensifying anticipatory feelings of fear and excitement, respectively (see also Loewenstein, 1987; Loewenstein and Lerner, 2003).

Thus, psychological distance appears to be a central construct involved in the reciprocal relation between affect and cognition. A cognitive appraisal may be required to first determine the proximity of a decision outcome (e.g., "will the outcome materialize now or later?"). This assessment of distance then influences the strength of the affective feedback loop, which, in turn, helps determine the person's cognitive or behavioral response. Such cognition and behavior can be reactive, for example, when anticipatory fear inhibits risk-taking, or more dynamic and recursive, for example, when people exhibit mood regulatory responses.

This analysis underscores the complementary nature of two seminal research streams, which have so far developed separately. Specifically, past and contemporary research on psychological distance has approached the topic mainly from a cognitive perspective, focusing on such constructs as goals and construals (e.g., Lewin, 1951; Trope and Liberman, 2003). A synergistic, so we believe, research program has considered the role of anticipatory emotions (e.g., Loewenstein and Lerner, 2003; Loewenstein et al., 2001; see also Slovic et al., 2002). We hope that the present research will contribute to the bridging of these two research streams. Such an integrative approach --- pivoting on the relation of psychological distance and affective feedback --- can advance our understanding of many important questions related to the interaction of affect and cognition.

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Footnotes

[1] As shown by other researchers (e.g., Lerner and Keltner, 2001; Tiedens and Linton, 2001), different types of negative and positive affect exist (e.g., sadness, fear, anger). However, consistent with the majority of prior mood congruency and mood regulation studies, we used negative and positive mood manipulations that induced sad and happy moods, respectively.

[2] The authors are grateful to Gordon Bower for his suggestions on the mood manipulation.

[3] Prior research suggests a two-dimensional circumplex model of affect (e.g., Russell, 1980), whereby two major dimensions of affect are pleasure-displeasure (i.e., valence) and degree of arousal. To control for the possible effects of arousal, we measured this construct using three 7-point items adapted from Barrett and Russell (1998; aroused/unaroused, sleepy/wide awake, and excited/calm). There were no significant effects on this arousal scale (created by averaging the three arousal items) in this and the subsequent studies. Therefore, this scale is not discussed any further.

[4] These two participants did not suspect that the evaluation of the pictures was intended to influence their mood and did not articulate the hypothesis being tested. Nevertheless, because they suspected that the pictures were related to the subsequent decision, their data was excluded.

[5] To validate the assumption that hiring decisions are more self-relevant for managers, we had 112 new airport travelers indicate (a) their job title and whether their position was defined as a "manager," (b) whether they made hiring decisions as part of their job, and (c) the last time they made such a decision. Compared to non-managers, managers were significantly more likely to be responsible for employment decisions (82% vs. 24%; $p < .001$), with over 50% of managers making such a decision within the past six months (compared to less than 10% of non-managers; $p < .001$).

[6] Two other psychology students found these studies using the PsychInfo database. The criteria for search stipulated that the studies had to employ mood manipulations and sample normal humans. Only studies that unambiguously demonstrated either mood congruency or mood regulation were retained. Specifically, studies that used only positive and neutral moods were excluded (due to the similar predictions of mood congruency and mood regulation in such cases). Overall, the search yielded 38 mood congruency studies (from 26 articles) and 40 mood regulation studies (from 22 articles).

Figure Captions

Figure 1. The Role of Psychological Distance in Reconciling Mood Congruency and Mood Regulation --- A Conceptual Model

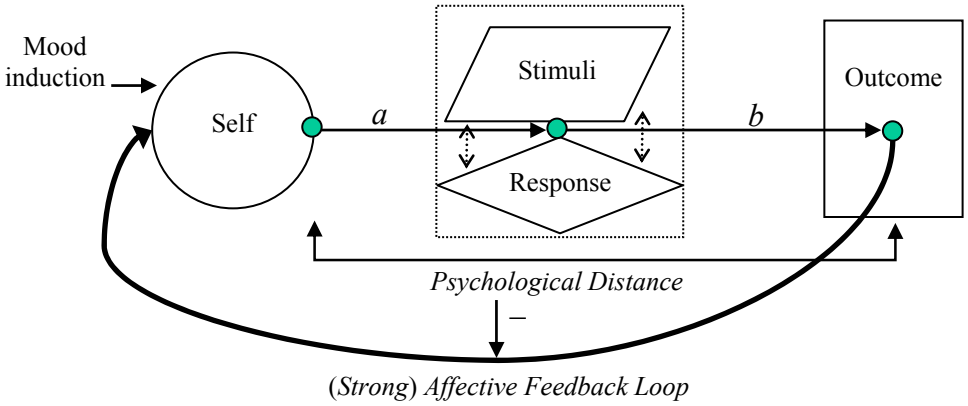
Figure 2. Real versus Hypothetical Choices (Experiment 1)

Figure 3. Near versus Distant Future Outcomes (Experiment 2)

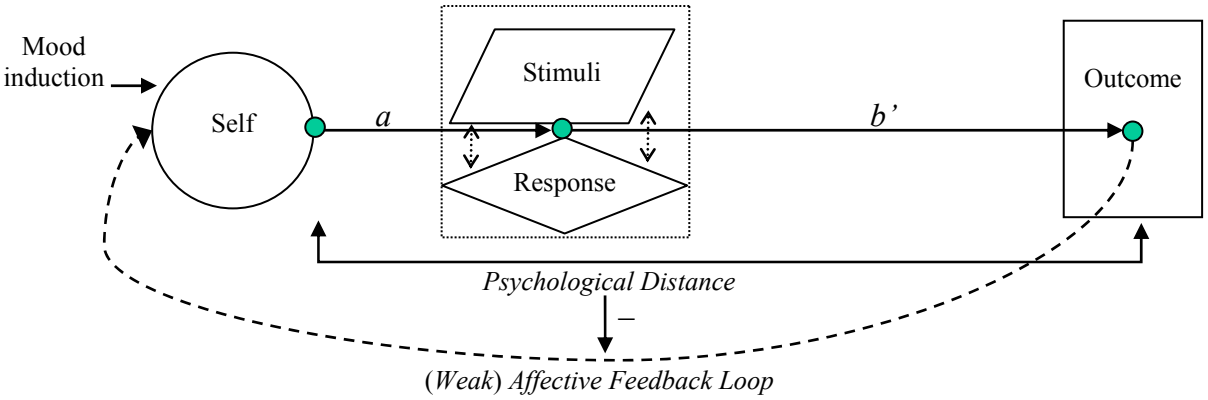
Figure 4. A Replication using Measurement of Affective States (Experiment 3)

Figure 5. High versus Low Probability Outcomes (Experiment 4)

Figure 6. Decisions with High versus Low Self-Relevance (Experiment 5)



Increased Psychological Distance due to a Distal Outcome



Increased Psychological Distance due to a Distal Stimulus or Response

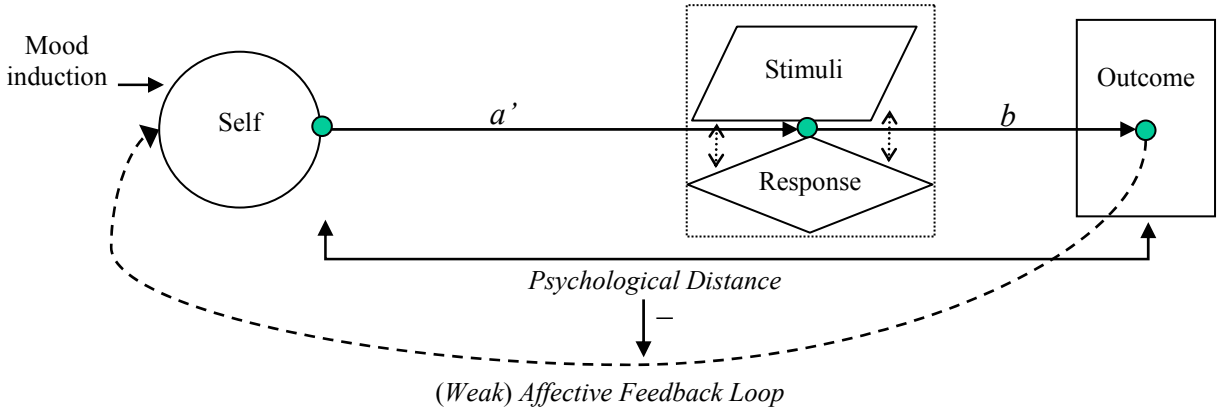


Figure 1.

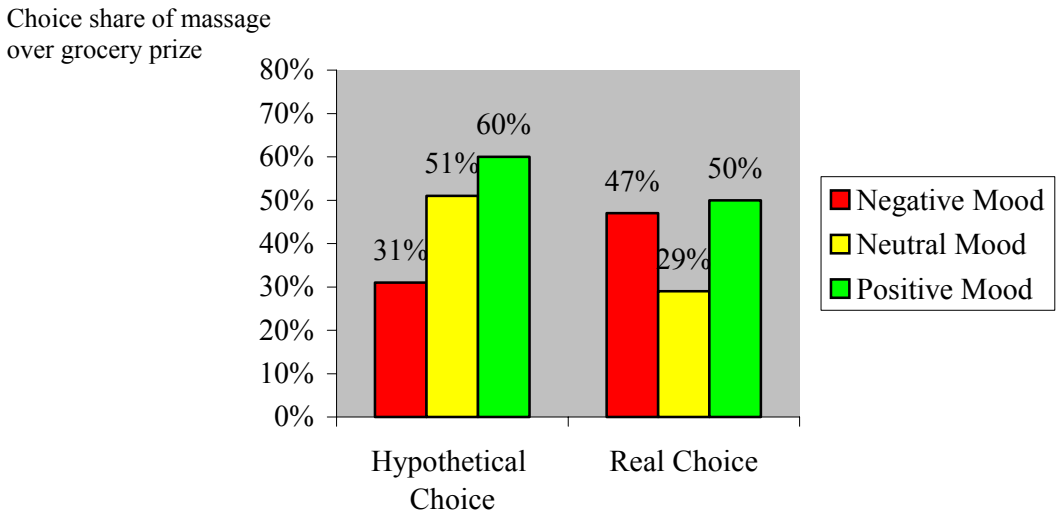

Choice share of massage over grocery prize
80%
70%
60%
50%
40%
30%
20%
10%
0%
31%
51%
60%
47%
29%
50%
Hypothetical Choice
Real Choice
Negative Mood
Neutral Mood
Positive Mood

Figure 2.

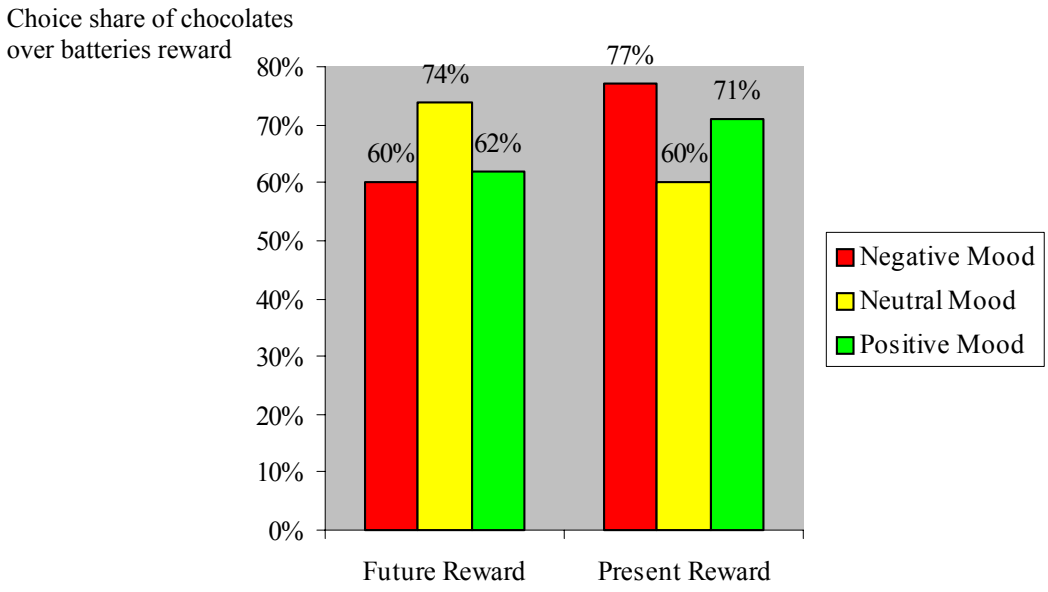
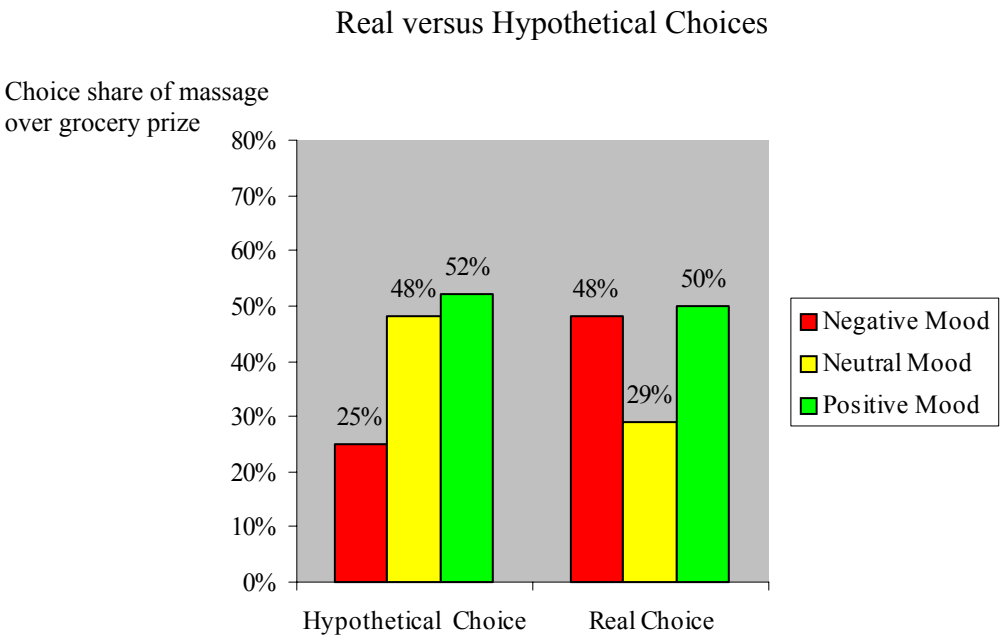

Choice share of chocolates over batteries reward
80%
70%
60%
50%
40%
30%
20%
10%
0%
60%
74%
62%
77%
60%
71%
Future Reward
Present Reward
Negative Mood
Neutral Mood
Positive Mood

Figure 3.


Real versus Hypothetical Choices
Choice share of massage over grocery prize
80%
70%
60%
50%
40%
30%
20%
10%
0%
25%
48%
52%
48%
29%
50%
Hypothetical Choice
Real Choice
Negative Mood
Neutral Mood
Positive Mood

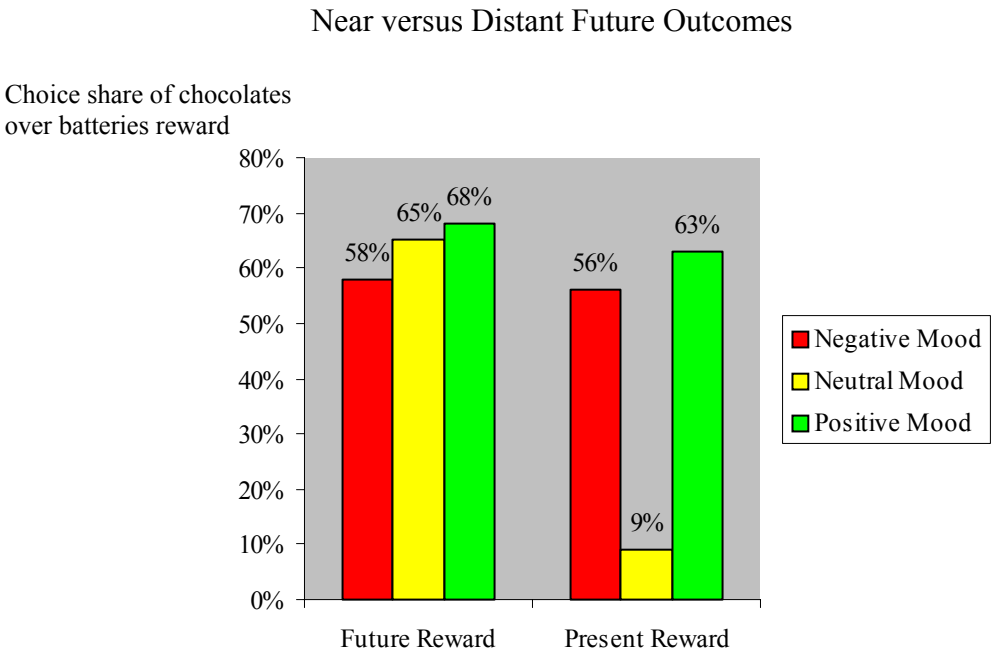
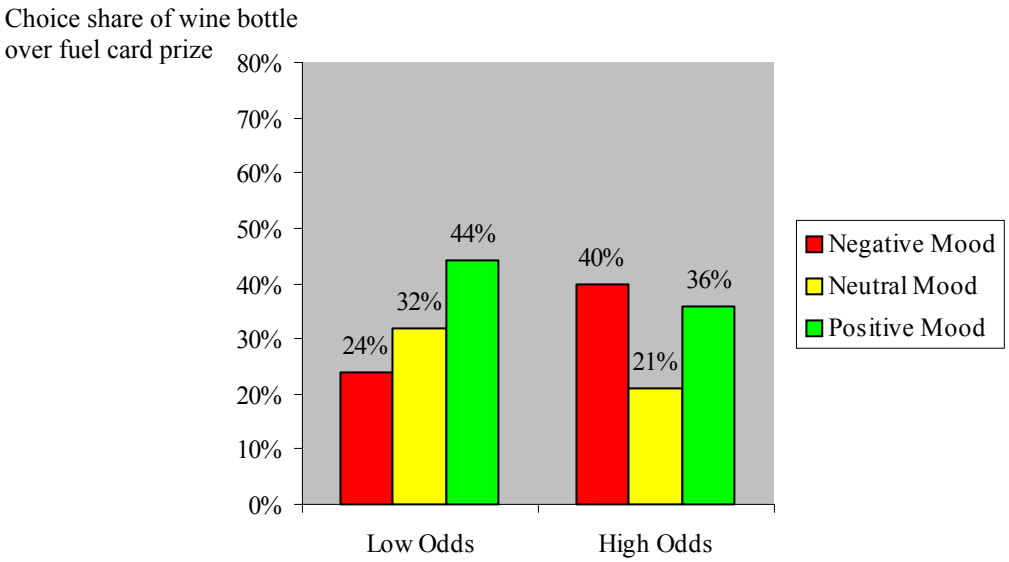

Near versus Distant Future Outcomes
Choice share of chocolates over batteries reward
80%
70%
60%
50%
40%
30%
20%
10%
0%
58%
65%
68%
56%
9%
63%
Future Reward
Present Reward
Negative Mood
Neutral Mood
Positive Mood

Figure 4.



High Odds Condition Only

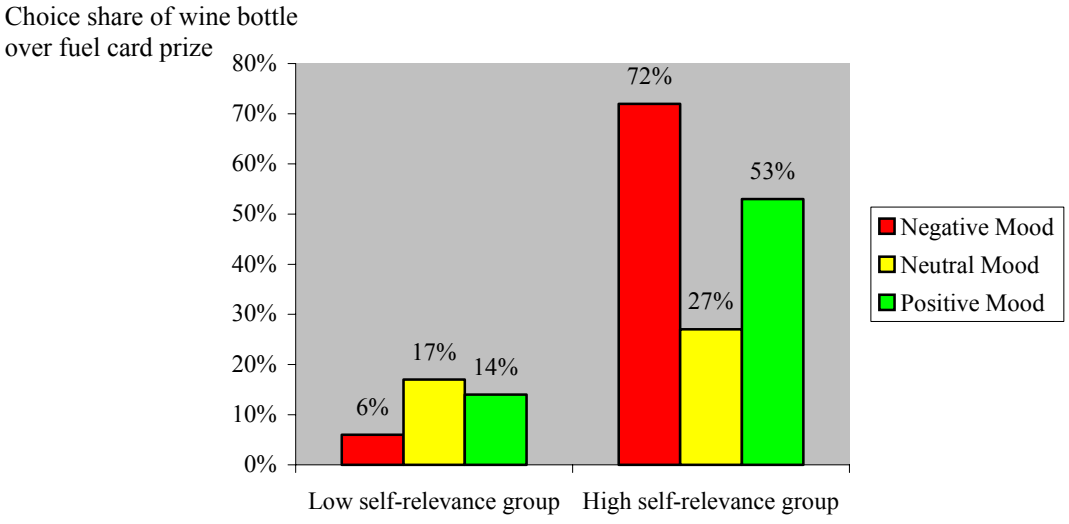
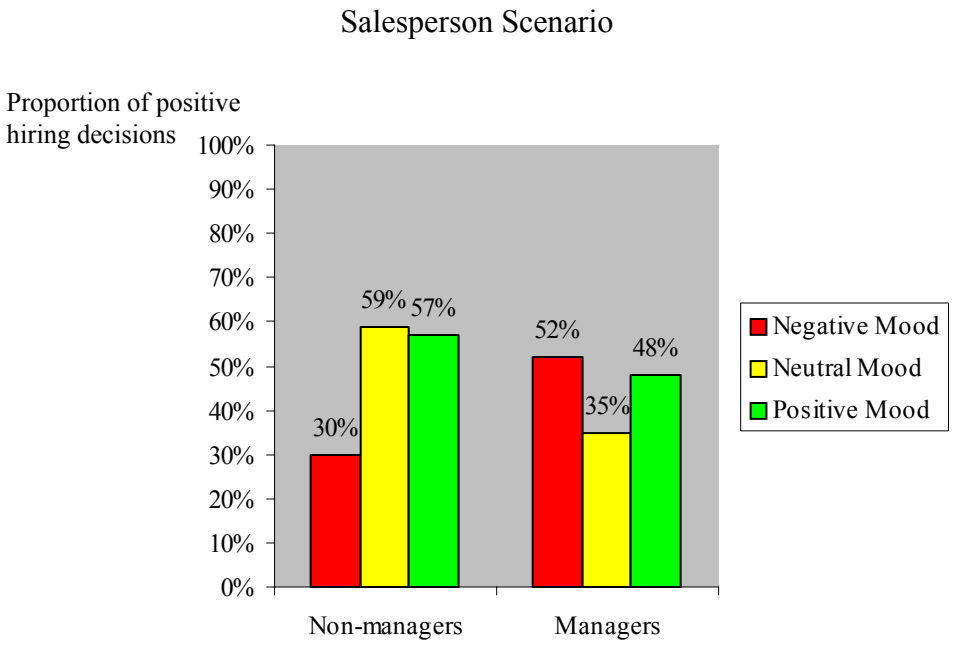


Figure 5.


Salesperson Scenario
Proportion of positive hiring decisions
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
30%
59%
57%
52%
35%
48%
Non-managers
Managers
Negative Mood
Neutral Mood
Positive Mood

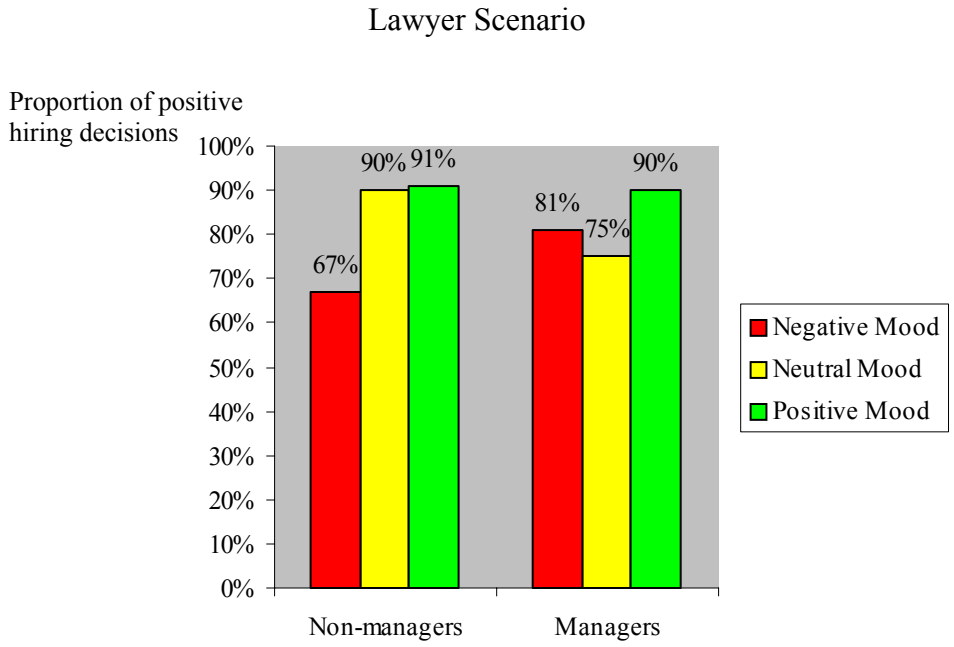

Lawyer Scenario
Proportion of positive hiring decisions
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
67%
90%
91%
81%
75%
90%
Non-managers
Managers
Negative Mood
Neutral Mood
Positive Mood

Figure 6.