Cognitive bias in the consideration of possible selves by depressed and nondepressed individuals

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Cognitive bias in the consideration of possible selves by depressed and nondepressed individuals

Huston, Michael Lee, Ph.D.
Iowa State University, 1990
Cognitive bias in the consideration of possible selves by depressed and nondepressed individuals

by

Michael Lee Huston

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Introduction

A basic tenet of social psychology is that people tend to go beyond the available, objective evidence when perceiving and evaluating others and themselves (Higgins & Bargh, 1987). One of the primary internal factors that influences how social information is perceived and processed is the individual's belief, or expectancy, about what the outcome will be in a given social situation. These expectancies are robust and tend to be maintained even when they are inconsistent with actual outcomes. The perceptions and interpretations of events are often distorted in order to support currently held beliefs (Miller & Turnbull, 1986).

The nature of this information processing bias appears to depend on the amount of knowledge on which the expectancy is based (Markus, 1977). When an individual has only very limited knowledge about another person, such as during the impression formation stage of a social encounter, cognitive processing tends to be biased in favor of information that is inconsistent with general expectancies (Crocker, Taylor & Fiske, 1984; Stangor & Ruble, 1989; Belmore, 1987). Once enough information is gained to form an expectancy for this individual, additional information is processed with an expectancy-consistent bias in order to preserve this expectancy (Crocker, Taylor & Fiske, 1984).

Expectancy-consistent cognitive biases have a significant impact in several areas of psychological functioning, including self-concept formation and depression (Higgins & Bargh, 1987). In self-concept formation,
information related to the self is subject to cognitive distortion as individuals strive to maintain a stable sense of who they are and try to predict their future outcomes (Fazio, Effrein, & Falender, 1981). Depressed individuals tend to predict a generally negative future for themselves as compared to nondepressed individuals, and therefore tend to be biased in favor of processing pessimistic information about possible future outcomes (Segal, 1988). Nondepressed individuals exhibit a generally optimistic outlook regarding their future, and therefore tend to be biased toward optimistic information about their possible future outcomes (Markus & Nurius, 1986). Thus, expectancy-consistent biases appear to maintain current mood states of depressed and nondepressed individuals by determining whether pessimistic or optimistic information is available in the self-concept (Markus & Nurius, 1986).

The present study examined whether expectancy-inconsistent cognitive biases could be triggered in depressed and nondepressed individuals when they were presented with information about their possible future. It was predicted that this would occur when possible outcomes were considered from the relatively distal future (25 years), as opposed to the relatively proximal future (2 months). This prediction is based on the assumption that with only limited knowledge available regarding their distal future, individuals will experience the same cognitive biases as found during impression formation, causing information that was inconsistent with general expectations to receive more extensive processing. On the other hand, it
was assumed that individuals would have sufficient information about their relatively proximal future to form expectancies, and that any additional information related to possible events in this time span would be subject to an expectancy-consistent bias. These predictions were tested by examining mood, recall, and self-focusing effects for depressed and nondepressed subjects after they were provided with information about either positive or negative outcome scenarios set in either the proximal or distal future. Because self-focus is linked closely to mood changes in depression (Pyszczynski, Holt & Greenberg, 1987), the effects of this manipulation on level of self-focus were also examined.

Cognitive Biases in Perception

Individuals are presented with an immense amount of information in social situations. If all of the information in such contexts received an equal share of the individual's limited cognitive resources, normal functioning would be impossible. One way this potential overload is managed is through the selective processing of information; in other words, social information is subject to cognitive biases. These biases are determined in large part by expectations for the behavior of others (Miller & Turnbull, 1986; Markus & Zajonc, 1985; Taylor & Crocker, 1981).

Research has shown that people are biased toward processing expectancy-consistent information in order to maintain existing beliefs (Higgins, King & Mavin, 1982; Bodenhausen & Lichtenstein, 1987; Wyer, Bodenhausen, & Srull, 1984). They do this by seeking out and remembering
information that is consistent with their beliefs (Snyder & Cantor, 1979; Snyder & Swann, 1978; Rothbart, Evans, & Fulero, 1979), by mis-labeling and mis-interpreting what they see as consistent with their expectancies (Jones, Farina, Hastorf, Markus, Miller, & Scott, 1984), and by persisting in their original beliefs even when the information that the initial impression is based upon is completely discredited (Ross, Lepper, & Hubbard, 1975). The phenomenon of cognitive distortion that leads people to perceive what they expect regardless of the evidence has substantial empirical support (Snyder, 1984; Hastorf & Cantril, 1954; Darley & Gross, 1983; Ickes, Patterson, Rajecki, Tanford, 1982; Hilton & Darley, 1985).

Information regarding one's self is also subject to cognitive biases (Markus & Wurf, 1987; Kihlstrom & Cantor, 1984). For example, numerous studies have found that stimulus materials that are highly self-descriptive are processed quickly, efficiently, and confidently (Markus, 1977; Kuiper & Rogers, 1979; Mueller, 1982). Recall and recognition for self-relevant stimuli is also enhanced relative to memory about others or to nonsocial information (Wallen, 1942; Cartwright, 1956; Bower & Gilligan, 1979; Hull & Levy, 1979; Kuiper & Rogers, 1979; Greenwald, 1980; Markus, 1980; Strube, Berry, Lott, Fogelman, Steinhart, et al, 1986). Individuals have also been shown to resist processing information that is incongruent with the beliefs they have about themselves, rejecting accounts of their behavior that differ from their own accounts (Greenwald, 1980; Markus, 1977, Swann & Read, 1981; Swann & Hill, 1982).
In addition, any behavior individuals enact that is inconsistent with their self-view is likely to be attributed situationally (Kulik, Sledge, Mahler, 1986).

Self-Concept Model

Markus and her colleagues (Markus & Wurf, 1987; Markus & Nurius, 1986, 1987; Markus & Kunda, 1986) have proposed a model that attempts to account for cognitive biases concerning self-related information. According to this model, self-knowledge is contained in a pool of self-conceptions, with a subset of these self-conceptions currently "on-line" and active in conscious awareness. This subset is termed the working self-concept because it is the set of beliefs that filters and assigns meaning to perceptions about the self. As such, the working self-concept is considered responsible for direct influences on the individual's emotional state and behavior. Core self-conceptions, organized into self-schemas, reside in the working self-concept to provide continuity and a sense of identity. Adaptability to changing circumstances is provided by a pool of peripheral self-conceptions which are not routinely involved in information processing, but which can be activated in response to situational cues or demands. As a particular self-conception becomes relevant to a given situation, it can be accessed to provide relevant self-knowledge.

In an early study partially supporting this model, Markus (1977; study 1) showed that the degree of knowledge one has about the self in a particular domain influences how beliefs are maintained. In her study, subjects that
demonstrated strong self-relevant beliefs and values in a particular domain were considered self-schematic for that domain because of the apparent development of a knowledge structure for the self in that domain. Those who did not show such beliefs were considered aschematic for that domain. Self-schematic subjects showed a bias for adjectives consistent with their self-schema in a recall task. Aschematics showed no such difference in recall. Self-schematic individuals were also more confident in their prediction of obtaining schema-congruent outcomes in the future, and of avoiding schema-incongruent outcomes, as compared to aschematics. This suggests that existing beliefs about the self in a particular domain promote views of the self in the future which are consistent with current beliefs, while the absence of such beliefs promotes uncertainty about the future.

A second study, (Markus, 1977; study 2), also supported the self-concept model. When self-schematic and aschematic individuals were presented with feedback on a task that was incongruent with their self-schemas, individuals with self-schemas were more likely to consider, but then reject, information incongruent with the self-concept whereas aschematics incorporated this new information into their self-descriptions. This study suggests that the processing of new information about the self in a particular domain depends on whether a body of self-relevant knowledge already exists for that domain.

In addition to current self-images, future-oriented self-conceptions are available for activation into the
working self-concept for use in processing information. Markus and Nurius (1986) found that most people were able to conceptualize goals, characteristics, general descriptors, or adjectives that could possibly describe themselves at some point in the future. This repertoire of possible selves is described as "the cognitive manifestation of enduring goals, aspirations, motives, fears and threats" (p. 158). Possible selves can be positive or negative, representing "the ideal selves that we would very much like to become [,] . . . the selves we could become, and the selves we are afraid of becoming" (Markus & Nurius, 1986, p. 954). Because they are so central to one's view of the self, possible selves are hypothesized to play a crucial role in the experience of affect. The possible selves that are currently activated in the working self-concept are considered responsible for providing the evaluative context that determines the individual's affect experience. If the working self-concept is dominated by conceptions of negative possibility, then the individual is vulnerable to experiencing the associated negative affect.

In the Markus and Nurius (1986) research, possible selves were assessed using a checklist of 150 possibilities for the self which had been previously developed by asking another group of students to "tell us about what is possible for you". Subjects also rated the probability of each possible self checked, and their current mood and sense of hopelessness. An overall positive bias in the endorsements of the possible selves was found and considered a reflection of general optimism about future events. Acknowledgment of
negative possible selves was related to self-reports of negative evaluation of the self in the past. In addition, higher probability ratings for negative possible selves were related to negative affect and feelings of hopelessness. From this research, they concluded that possible selves constitute "an independent dimension within the self-concept related to the individual's current affective state" and suggest that "the nature of an individual's working self-concept states could vary systematically with that individual's affective and motivational state, and vice versa" (p. 960). They concluded that possible selves are as labile as mood, and that a change in one will be reflected in changes in the other. Just as mood was shown to be related with a change in self-concept, the self-concept, specifically possible selves, should change to reflect an alteration in mood.

Cognitive Biases in Depression

The activation of self-conceptions, including possible selves, into the working self-concept depends on the demands of the situation, and on the cognitive biases which influence how these demands are perceived and interpreted. For a given individual, some self-conceptions are more easily activated from memory than others, reflecting individual differences in construct-accessibility (Bargh & Tota, 1988; Erdley & D'Agostino, 1988; Higgins & King, 1981; Wyer, Bodenhausen & Srull, 1984). Construct accessibility refers to the ease or readiness with which a construct is used in information processing (Segal, 1988; Higgins, Rholes & Jones, 1977; Tulving & Pearlstone, 1966). A self-
conception will be activated if it is highly accessible due to frequency of prior activation or motivational significance, or if it is highly salient in the current circumstances (Strauman & Higgins, 1987).

Almost all cognitive theories of depression consider pessimism to be central to the experience of negative mood. Beck's (1967) theory of depression has as its central component the depressive triad, a set of negative beliefs, or schemata, about one's self, one's world, and one's future. This depressive self-schema is postulated to continually distort self-relevant thoughts. According to Beck's (1967, 1976) cognitive model of depression, these negative evaluations are a core symptom and cause of depression. In this theory, depressives process self-relevant information using a systematic bias against the self in which they selectively abstract negative details of environmental events, overgeneralize others, and make arbitrary inferences based on information insufficient to justify their conclusions. According to Beck, these distorted inferences are produced by a collection of pervasive negative beliefs about the self and its relation to the world and the future.

Consistent with this theory, research has indicated that depressives are more pessimistic about their own futures than nondepressives. Beck (1967) found that 78% of the depressed patients in his study reported negative expectations about the future, as compared with 22% of the nondepressed subjects. Lobitz and Post (1979) found that depressed subjects expected less successful performance for
themselves on laboratory tasks than nondepressed subjects. Other research has shown that depressed subjects view sad events as more likely to happen to themselves than to an acquaintance, and that depressed subjects consider sad events as more likely to happen to themselves than do nondepressed persons (Pietromonaco and Markus, 1985; Pyszczynski, Holt & Greenberg, 1987, Study 1).

Research on cognitive processes suggests that negative self-schemata influence the probability judgments of future positive and negative life events (Kuiper, Derry & MacDonald, 1982). A large number of studies have demonstrated that depressed individuals think more negatively about themselves than about others, and that this negativity pervades all aspects of their information processing (Derry & Kuiper, 1981; Kuiper & Derry, 1981; Kuiper & MacDonald, 1982); Ingram, Smith, & Brehm, 1983; Kuiper & Higgins, 1985; Pietromonaco, 1985).

Depressed individuals have a strong bias toward processing expectancy-congruent (i.e. negative) information about the self. They appear more willing to focus on negative feedback, both realistic and unrealistic, than nondepressed individuals (Alloy & Abramson, 1988). This pessimistic bias may serve to maintain a continuity within the self-concepts of these individuals, reflecting the easily accessible negative self-conceptions used for processing information about the self (Barsh & Tota, 1988; Segal, 1988, Kuiper, Derry, & MacDonald, 1982).
Biases that serve to maintain existing beliefs have been shown to be reversed at the time that the beliefs are in the initial formation stage. At this point, expectancy-inconsistent information appears to be processed more extensively than expectancy-consistent information (Higgins & Bargh, 1987). Several memory studies have found, for example, that under impression formation conditions, expectancy-inconsistent information is recalled better than expectancy-consistent information (Belmore, 1987; Hastie & Kumar, 1979; Srull, 1981; Srull, Lichtenstein & Rothbart, 1985).

In a study by Hastie and Kumar (1979), subjects were given a description of a target person in the form of a list of adjectives related to the same trait (e.g. honest) and were then asked to read a list of behaviors performed by the target that were either consistent or inconsistent with the trait description, or irrelevant to it. Recall results showed that the behaviors that were inconsistent with the initial trait description were recalled better than those that were consistent with it, with the irrelevant behaviors being recalled least. Hastie (1980) interpreted these results as indicating elaborate processing of inconsistent information, resulting in associative linkages in memory as subjects attempted to integrate them into a unitary impression.

In their review of this literature, Higgins and Bargh (1987) concluded that the Hastie and Kumar (1979) studies, and subsequent research in their paradigm, concern
impression formation and not impression testing. "The findings therefore should not be interpreted as showing that information inconsistent with a well-formed prior belief is better recalled. They must be understood in the context of other research that demonstrates the greater attention and processing given to relatively infrequent behaviors during impression formation, and their resultant increased accessibility in memory (e.g. Hamilton & Gifford, 1976; Fiske, 1980; Hamilton, Dugan & Trolier, 1985; Ruble & Stangor, 1986)" (Higgins & Bargh, 1987, p. 382).

This research suggests that social expectancies can be viewed in a developmental framework, consistent with cognitive-developmental hypotheses that posit heightened sensitivity to relevant information as knowledge about a social domain is being formed (Kohlberg, 1966; Ruble, 1987). As expectancies are being formed, individuals initially may seek out and elaborately process relevant information to check the match with the developing expectancy. Uncertainty and a lack of information at this stage biases cognitive processing in favor of discrepant information. Once the expectancy develops past this initial uncertainty and becomes established, new information serves more to challenge the existing expectancy than to add to it. At this point, processing begins to be biased in favor of expectancy-consistent information in order to help maintain the expectancy (Stangor & Ruble, 1989; Crocker, Taylor & Fiske, 1984; Crocker, Hannah, & Weber, 1983).

The same cognitive processes related to social information seem likely to apply to self-relevant
information. Although the self is generally viewed in the literature as a uniquely well-developed and highly organized belief system (Higgins & Bargh, 1987), it appears to be as susceptible to the same cognitive processing effects as any other set of beliefs, such as expectancies for others (Bower & Gilligan, 1979; Fiske & Taylor, 1984; Kihlstrom & Cantor, 1984). Just as expectancy-consistent biases have been found in the processing of self-relevant information where an expectancy is well developed (Markus, 1977), expectancy-inconsistent biases appear likely when self-relevant information is encountered and the related expectancy is poorly developed. This type of impression formation bias is most likely to occur during the formation of possible self-conceptions in areas which are unfamiliar, yet relevant to the individual.

Possible selves are formed in the course of processing internally or externally derived information in terms of the self (Markus & Wurf, 1987). By their nature, possible selves are inferences about future outcomes and are less tied to reality than other self-conceptions. Individuals are free to consider a broad array of possible outcomes for any given event in their future. When presented with self-relevant information pertaining to a particular potential outcome, a possible self is generated and evaluated in light of the individual's expectancies for that domain (Markus & Nurius, 1986).

When the individual has considerable experience in a particular domain, expectancies for future outcomes in that domain will be well developed. Markus (1977) found, for
example, that subjects with well-developed beliefs for a particular behavioral domain were more confident in their predictions of their own behavior in that domain. The development of possible selves for behavioral domains with well-developed expectancies would be subject to expectancy-consistent processing bias. In other words, information about expectancy-consistent possible selves would receive more attention and processing than information that reflects expectancy-inconsistent outcomes.

When expectancies are absent or poorly developed, however, information about possible outcomes for the self that are inconsistent with general expectancies for the future would likely receive elaborate processing in the same manner as during impression formation. Markus and Nurius (1986) point out that "as representations of potential, possible selves will thus be particularly sensitive to those situations that communicate new or inconsistent information about the self" (p. 956). Encountering information about a possible outcome in a domain that has not been previously considered would prompt a new possible self, which would then be examined in light of general expectancies for the future. A possible self generated in this manner that contradicts general expectations for the future may receive more elaborate processing than an expectancy-consistent possible self as the expectancy is developed. This would be especially true of possible selves in domains of anticipated behavior. Whereas much expectancy-inconsistent information would be dismissed out-of-hand due to its lack of personal relevance, this would not be the case for information
pertaining to plans for the future, such as anticipated life role behavior.

It follows from this line of reasoning that, given their different general expectancies for the future, depressed and nondepressed would be biased in favor of different possible selves under impression formation conditions. Given their generally pessimistic outlook on the future, depressed individuals would be biased in favor of information suggesting positive possible selves in domains where specific expectancies were absent or poorly developed. Similarly, given the optimistic bias of nondepressed individuals, they would be inclined to favor information suggesting negative possible selves under these circumstances. Thus, while the expectancy-consistent processing biases of depressed and nondepressed individuals have been clearly demonstrated, the present discussion presents a potential means of reversing this processing mode.

Outcome Dependency

Another important factor shown to influence the effect of new information is perceived personal relevance. Information receives more attention when it is perceived to be relevant to future outcomes. Erber and Fiske (1984, study 1) found that outcome dependency increased attention to information, particularly when it was inconsistent with advance expectancies. They speculated that individuals will try harder to predict situations that matter to them. Since inconsistent information is potentially more informative than consistent information (Jones & McGillis, 1976),
successful prediction may require that attention be directed to expectancy-inconsistent information.

Normative life roles are anticipated by the individual and considered important. From a family life-cycle perspective, the progression of these life roles is single young adult, married without children, parent with young children, parent with adolescent children, and parent with adult children (Carter & McGoldrick, 1980). The development of expectancies for these life roles begins through anticipatory socialization (Merton, 1957), and accelerates as an individual comes closer to actually assuming the role. The full development of expectancies for the myriad situations to be faced in each life role is not possible, however, without actual experience in that role.

The life role occupied by the typical college student is that of single young adult. Through their experience, they will have developed expectancies for situations associated with this role. One of the situations likely to have well-developed expectations is that involving interacting with family members or close friends in the near future. The possible outcomes of such interactions are likely to be familiar and important for these individuals. For the young adult college student, information relevant to possible interactions with family members or friends in the near future (i.e. within the present life-cycle role) should be processed in light of well-developed expectancies for these situations. Such information should then be subject to the expectancy-consistent bias that accompanies well-developed expectancies.
The cognitive response should be different, however, when information is considered that bears on an anticipated, yet distal life role. One such role likely to be part of an individual’s life plan, yet relatively unfamiliar to the typical college student, is the role of parent of an adult child. Expectancies about possible outcomes of interactions between parent and adult child from a parental perspective will not be well developed in the young adult college student. This is a function of the remoteness of this role from that of single young adult in terms of the family life-cycle, as well as the length of the time span between these two roles, likely to be in the neighborhood of 25 years. Information related to possible interactions in a distal life role, such as interacting with an adult child as a parent, should be processed in the context of only generalized expectancies regarding the future, rather than well-developed expectancies specific to that behavioral domain. Such information should therefore be subject to the expectancy-inconsistent bias found in impression formation.

Because depressed individuals have generally pessimistic expectations about their future, young adult college students who are depressed are likely to have self-conceptions of failure and unhappiness regarding anticipated events, such as interactions with family members or friends in the proximal future. Information suggesting negative possible outcomes of such events will be readily imported into the working self-concept because of the expectancy-consistent bias. Information about possible positive outcomes will be subject to bias in the face of the existing
expectancies and will be discounted or not attended to. Information related to negative possibilities will serve to confirm the pessimistic outlook for the near future, maintaining depressed mood.

When presented with the same information relating to possible outcomes in a distal life role, however, depressed individuals should exhibit a bias toward positive information because it is inconsistent with their generally pessimistic expectancies. In other words, depressed individuals should regard the possibility that they may be a happy and good parent to their adult child in 25 years as expectancy-inconsistent; it should also be interesting, however, because there will be no specific negative expectancy to contradict this positive possibility. It should, in fact, be more interesting to them than negative possibilities due to the individual's efforts to reconcile incongruent information as a specific expectancy is being formed. Nondepressed single young college students should mirror the depressed students in the expectancy-consistent and expectancy-inconsistent biases they exhibit when presented with information related to possible proximal and distal future outcomes, respectively. Their processing should favor positive over negative outcomes related to interactions with family members or friends in the next few months, whereas processing should favor negative over positive possibilities related to the distal role of parent of an adult child. As for the depressed students, this reflects the different level of development of expectancies for these two behavioral domains, with specific, positive
expectancies relevant to the proximal domain and only a general, optimistic expectancy relevant to the distal domain.

Recall, Mood and Self-Focus Effect

The purpose of the present study was to demonstrate the cognitive bias effects proposed above through an experimental manipulation procedure. Because of their essentially cognitive nature, these biases are not directly observable and therefore must be inferred from observable events, such as subject self-reports. Three such measures were used as dependent variables in this study: 1) recall of manipulation stimulus materials; 2) mood following the manipulation; and 3) level of state self-focus following the manipulation. Each of these variables was considered able to provide indications of the cognitive biases in question.

Recall has been shown to relate to enhanced cognitive processing, and has been used extensively in research on cognitive biases (Wyer, Bodenhausen, & Srull, 1984; Erber & Fiske, 1984; Belmore, 1987), and has been shown to predict attention (Berscheid, Graziano, Monson, & Dermer, 1976). Recall measures used in these studies typically consist of free or prompted recall of details from the experimental stimulus materials after a delay of a few minutes, usually with an intervening task to reduce rehearsal.

Mood is predicted to change due to the effects that processing self-related information will have on the self-concept. As discussed above, there is preliminary evidence that possible selves play a major role in determining current mood when they are active in an individual's working
self-concept (Markus & Wurf, 1987; Markus & Nurius, 1986). Because cognitive biases have been shown to determine what self-conceptions are attended to and accessed by the working self-concept, self-reports of current mood may indicate the type of bias employed to process self-related information.

The relationship of mood to cognitive biases is complicated however, by the individual's level of self-focus when considering information related to possible positive and negative outcomes. When presented with negative feedback, for example, depressed individuals generally respond with higher levels of self-focus (Greenberg & Pyszczynski, 1986; Pyszczynski & Greenberg, 1985, 1986), while nondepressed individuals tend to exhibit the opposite pattern (Gibbons & Wicklund, 1976). Given the finding that focusing attention on the self tends to heighten emotional experiences (Gibbons, 1990; Carver & Scheier, 1977), depressed individuals are likely to exhibit a stronger affective response following exposure to negative feedback than nondepressed individuals. In other words, the type of bias applied by nondepressed individuals when processing negative information may not be reflected in their mood scores.

The same confound applies to how depressed individuals may react to positive feedback. Depressed individuals have been shown to avoid self-focus when given positive outcome feedback (Greenberg & Pyszczynski, 1986; Pyszczynski & Greenberg, 1985, 1986). When depressed individuals decrease their self-focus, they experience an increase in optimism (Pyszczynski, Holt, & Greenberg, 1987) which should lead to
improvements in positive mood (Markus & Nurius, 1986). Hence, improvements in mood after exposure to information about possible positive outcomes may occur as a result of a decrease in self-focus rather than as a consequence of incorporating positive possible selves into the working self-concept. In order to sort out these potentially confounding effects, self-focus will be assessed immediately after the assessment of mood following presentation of the manipulation.

Self-focus may serve a more important role, however, as an indicator of a processing bias difference between proximal and distal possible selves. Self-focus studies that have looked at how depressed and nondepressed subjects respond to negative or positive feedback have typically utilized some type of bogus task that, when completed by the subject, is "scored" by the experimenter who then provides the subject with either positive or negative feedback (Greenberg & Pyszczynski, 1986; Pyszczynski & Greenberg, 1985, 1986; Ingram, Cruet, Johnson, & Wisnicki, 1988). Findings of these studies suggest that this type of feedback is cognitively processed with an expectancy-consistent biases.

Given that self-focus increases the influence of the working self-concept on various cognitive processes (Carver & Scheier, 1981; Hull & Levy, 1979), increased self-focus by depressed subjects when presented with negative information suggests that they are attending to and processing this information because of its congruence with the overall negativity of their current self-concepts. Nondepressed
subjects exhibit expectancy-consistent bias by decreasing or avoiding self-focus in the face of negative feedback (Gibbons & Wicklund, 1976). Self-focusing responses to positive feedback by depressed and nondepressed individuals also suggest a expectancy-consistent bias in these studies; depressed individuals avoid self-focus enhancing stimuli (Greenberg & Pyszczynski, 1986), while increased self-focus is associated with positive outlooks by nondepressed individuals (Pyszczynski, Holt, & Greenberg, 1987).

The negative and positive feedback provided to subjects in this study is intended to bypass expectancy-consistent biases, and therefore should produce different self-focusing responses than have been found in previous studies. To the extent that the proximal possible self feedback condition promotes expectancy-inconsistent biases, the previously reported self-focusing patterns of depressed and nondepressed individuals should be reversed in the distal condition. In other words, depressed individuals should show an increase, and nondepressed individuals a decrease, in self-focusing following exposure to positive possible selves in the distal condition, with this pattern reversed after exposure to negative possible selves in the distal condition.

Overview

The present study examines the ways that depressed and nondepressed people react to information about positive or negative possible outcomes for themselves in either the proximal (2 months from now) or distal (25 years from now) future. These independent variables were analyzed with a 2
A 2 X 2 (depression X proximity X valence) randomized factorial design. The three primary dependent variables were recall, mood, and self-focus. The recall hypotheses were tested with an analysis of variance (ANOVA) procedure, and the mood and self-focus variables were analyzed with an analysis of covariance (ANCOVA) procedure. Each dependent variable was analyzed separately. Additional measures were included to confirm that the experimental manipulation had the desired effect. Each of these measures was also analyzed with the ANOVA procedure.

Hypotheses

Previous research has demonstrated that when presented with information about which they have a well-developed expectancy, depressed and nondepressed individuals are biased toward processing information which is consistent with their existing expectancy (i.e. they will exhibit an expectancy-consistent bias). This means that depressed individuals should be biased in favor of processing negative possible selves rather than positive possible selves, and that nondepressed individuals will be biased toward processing positive possible selves rather than negative possible selves.

This effect was expected to be reflected in this study as better recall for details of the expectancy-consistent possible self information than for the expectancy-inconsistent possible self information in the proximal condition. Mood scores in the proximal condition were expected to reflect the expectancy-consistent bias by remaining equal across the valence conditions. In other
words, depressed individuals were expected to report comparably depressed mood regardless of whether they were in the positive or negative outcome condition, and nondepressed individuals were expected to maintain positive mood scores after exposure to negative as well as positive possible outcomes in the proximal condition.

Self-focus was expected to be generally higher for the depressed individuals than for the nondepressed individuals in the proximal condition due to findings showing that depressed individuals generally engage in higher levels of self-focus than do nondepressed individuals (cf. Ingram, Lumry, Cruet, & Sieber, 1987; Smith, Ingram, & Roth, 1985). Also, following from previous findings indicating that depressed individuals tend to avoid self-focus after exposure to positive feedback, it was predicted that depressed subjects presented with information about possible positive outcomes in the proximal future would show lower self-focus than depressed individuals in the negative outcome condition.

The predictions unique to this study are based on the hypothesis that depressed and nondepressed individuals will process information about expectancy-inconsistent possible selves more extensively than expectancy-consistent possible selves in behavioral domains which have poorly-developed expectancies. It was predicted that this expectancy-inconsistent bias will be strong enough to override the expectancy-consistent biases that have been found for behavioral domains with well-developed expectancies. The specific predictions are:
Recall.

1) Depressed subjects presented with information about possible positive outcomes in the distal future will recall more of this information than depressed subjects presented with information about possible negative outcomes in the distal future.

[Dep/distal/(+) > dep/distal/(-)].

2) Depressed subjects presented with information about possible positive outcomes in the distal future will recall more of this information than depressed subjects presented with information about possible positive outcomes in the proximal future.

[Dep/distal/(+) > dep/proximal/(+)].

3) Nondepressed subjects presented with information about possible negative outcomes in the distal future will recall more of this information than nondepressed subjects presented with information about possible positive outcomes in the distal future.

[Nondep/distal/(-) > nondep/distal/(+)].

4) Nondepressed subjects presented with information about possible negative outcomes in the distal future will recall more of this information than nondepressed subjects presented with information about possible negative outcomes in the proximal future.

[Nondep/distal/(-) > nondep/proximal/(-)].
Mood.

5) Depressed subjects are expected to show more positive mood after presented with information about positive possible outcomes in the distal future than following presentation of information about proximal, positive possible outcomes.
\[\text{Dep/distal/(-)} \succ \text{dep/proximal/(-)}\].

6) Nondepressed subjects are expected to show more negative mood after being presented with information about possible negative outcomes in the distal future than following presentation of information about possible negative outcomes in the proximal future.
\[\text{Nondep/distal/(-)} \succ \text{nondep/proximal/(-)}\].

Self-Focus.

7) Depressed subjects are predicted to show higher levels of self-focus after being presented with information about possible positive outcomes in the distal future than following presentation of information about possible positive outcomes in the proximal future.
\[\text{Dep/distal/(+)} \succ \text{dep/proximal/(+)}\].

8) Nondepressed subjects are predicted to show higher levels of self-focus after being presented with information about possible negative outcomes in the distal future than following presentation of information about possible negative outcomes in the proximal future.
\[\text{Nondep/distal/(—)} \succ \text{nondep/proximal/(—)}\].
Method

Subjects

Subjects were recruited from the subject pool of the Psychology Department at Iowa State University and received extra credit for participation. In order to reduce several potentially confounding factors, selection of subjects for this study was be limited accordingly in three areas: gender, family role experience, and the presence or absence of depression indicators. Recent evidence points to a significant gender effect for self-focusing tendencies (Ingram, Cruet, Johnson, & Wisnicki, 1988), such that women show a greater propensity to focus attention on the self than do men. To rule out this potential bias, as well as to reduce other gender effects, only female subjects were used in this study. To rule out possible effects from different family role experience (e.g. marriage, parenthood), and cohort effects, only subjects who were less than 25 years old, never married, and childless were included. Also for the purposes of the factorial design of this study, only those subjects that were classified as either significantly depressed or nondepressed were included.

Measures

The measures are discussed in the order that they were presented during the procedure, with the exception of the post-manipulation mood measure, which is discussed along with the pre-manipulation mood measure.

Beck Depression Inventory (BDI). Pre-classification as depressed or nondepressed was based on the results of the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, &
Erbaugh, 1961). The split-half reliability is approximately 0.9 and its test-retest reliability is approximately 0.75. It has consistently been found to correlate well with clinician's ratings of severity of depression, as well as with other scales of depression (Williams, 1984). The BDI is presented in Appendix A.

Private Self-Consciousness Scale (PSC). Dispositional self-focus was measured using the Private Self-Consciousness subscale (PSC) from the Self-Consciousness Scale (SCS) (Fenigstein, Scheier, & Buss, 1975). The SCS contains 23 items that are answered on a 5-point Likert scale, 10 items of which assess private self-consciousness and comprise the PSC. The SCS as well as the PSC subscale have been used in a wide variety of studies of self-focused attention, and reliability and validity data have been well established (Carver & Scheier, 1981). The PSC is presented in Appendix B.

Mood scales. Mood was measured with two scales, each made up of eight mood adjectives selected from the Mood Affect Adjective Check List (MAACL; Zuckerman & Lubin, 1965), plus a ninth item asking about valence of current mood. The adjectives comprising the second scale were polar opposites of the adjectives in the first scale, providing a parallel assessment of mood while reducing transparency of the measure (Gibbons & Gerrard, 1989; Gibbons & Boney McCoy, in press). Subjects responded to the items on a 13-point Likert scale. The ratings of each item were totalled to produce a score for each mood scale. Cronbach's alpha coefficients for the first and second mood scales were .90
and .93, respectively. These scales are presented in Appendices D and E.

**State Self-Focus Scale (SSF).** Although the PSC was developed as a dispositional measure of self-focusing tendencies, the items can be changed to produce a situational emphasis, as was suggested by Ingram, Cruet, Johnson, & Wisnicki (1988). These authors reported modifications such as changing the item "I am always trying to figure myself out" to "I was trying to figure myself out" (p. 969). Similar changes were made in the PSC to produce the State Self-Focus (SSF) scale used in this study. The SSF scale was designed to assess the effects of the experimental manipulation on the subject's current level of self-focus. Cronbach's alpha coefficient for this scale was .51. This scale is presented in Appendix L.

**Manipulation check items.** Five single-item measures to assess whether the scenarios were perceived and judged by the subjects in the way intended. The similarities (SIM) item asked the question "How similar was the situation in the journal entry to your current life?" and was answered on a 9-point Likert scale (1 = Very Similar; 9 = Very Different). The frequency (FREQ) item consisted of the question "Before today, how often had you thought about this possible situation?" (1 = Very Often; 9 = Never). The ease (EASE) item consisted of the question "How easy did you find it to imagine yourself in the situation described in the journal entry?" (1 = Very Easy; 9 = Very Hard). The likelihood (LIKLHD) item consisted of the question "How likely do you think you are to actually experience a
situation similar to the one described in the journal entry?" (1 = Very Likely; 9 = Very Unlikely). The desirability (DESIR) item consisted of the question "How desirable would this situation be to you?" (1 = Very Desirable; 9 = Very Undesirable). These measures are presented in Appendix M.

These measures were expected to show that the proximity and outcome valence manipulations had their intended effect. It was predicted that proximal scenarios would be judged as more similar to current experience, and more frequently considered than distal scenarios. In addition, subjects were expected to be able to imagine the distal scenarios as easily as the proximal scenarios, as reflected in the ease of consideration item. Positive scenarios were predicted to differ from negative scenarios in terms of their desirability ratings, with positive scenarios expected to be rated as more desirable than negative scenarios. The likelihood rating was expected to reflect the optimism and pessimism of nondepressed and depressed subjects. Positive outcomes were predicted to receive a higher likelihood rating from nondepressed than depressed subjects, whereas negative outcomes were predicted to be rated as more likely by depressed than nondepressed subjects.

Recall measure. This measure asked subjects to recall two different types of information: details presented to the subjects in the scenarios (standard recall), and details of the scenario that they generated themselves (self-generated recall). The main reason for including both types of items was essentially practical; the brevity of the scenarios
limited the number of standard details that could be included in a recall measure and self-generated details were used to expand the measure. There was a secondary interest in how recall of the two types of details would differ, although a hypothesis was not generated regarding this question.

The self-generated component of the recall measure varied in number of items depending on whether a proximal or a distal scenario was presented in the manipulation. The self-generated recall component for proximal condition scenarios consisted of eight self-generated information recall items, whereas the self-generated recall component for distal condition scenarios consisted of six self-generated items. This item total difference in the self-generated recall measure resulted because two items specific to the proximal scenarios were inadvertently used in the distal recall measure, requiring them to be disregarded in the assessment of self-generated, distal recall. The standard recall items were scored by comparing answers to a key of correct answers by a judge who was blind to the experimental condition of the subjects. An answer was scored as correct if it contained a the key word or detail listed for that item. For example, the item "When did your visitor arrive for the weekend?" was scored correct if the answer contained the two words "Saturday" and "noon". The self-generated recall items were compared to the details provided by the subjects as they filled in the blanks of their scenario descriptions. These recall answers were scored as correct if they were identical to the previous
responses. This scoring was also done by a judge who was blind to the experimental condition of each subject. This measure is presented in Appendix O.

Procedure

Subject screening procedure. The Beck Depression Inventory (Beck, 1967), the Private Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975) and background questions regarding gender, age, marital status, and parenthood status were administered to a large number of students from the subject pool during a mass testing early in the semester and again to a new group of students at the midpoint of the semester. Subjects meeting these criteria were considered for participation if they were classified as depressed or nondepressed based on criteria used in other recent research on depression (Pyszczynski, Holt & Greenberg, 1987). For the purpose of this study, subjects with BDI scores of 10 and above were classified as depressed; subjects with BDI scores of 4 and below were classified as nondepressed. Based on these criteria, 70 depressed and 70 nondepressed subjects were selected for the study. They were contacted by telephone and were told that the purpose of the study was to examine how their thoughts and feelings were affected after reading a short story. They were told that participation consisted of coming to the lab, reading a short story, and then filling out several questionnaires about their thoughts and feelings. If they agreed to participate, a time and date was arranged for them to come to the lab to participate in the study.
Of the depressed subjects contacted, 68 agreed to participate, although two subjects produced a high proportion of missing values, causing their data to be discarded. Of the 70 nondepressed subjects selected and contacted for this study, 66 agreed to participate. The results of four of these subjects were discarded, however, due to their failure to respond to one or more of the measures. Thus, the Ns for the depressed and nondepressed cells were 66 and 62, respectively.

Experimental procedure. Prior to coming to the lab to participate, the depressed and nondepressed subjects were randomly assigned to one of the four experimental conditions. Upon arriving at the lab at the arranged time, subjects were again told that the study consisted of reading a story and answering some questions about their thoughts and feelings. The experimental procedure was explained by telling them that they would be given four separate questionnaire packets during the course of the experiment, and that each of these packets would be brought to them by the experimenter at given intervals. They were not informed about the recall task at this time, however.

Each subject was then taken into a small lab room and left alone to complete the first packet, which consisted of the consent form (see Appendix C), the initial mood measure (see Appendix D), and brief instructions on what to do with the manipulation materials that would be provided to them shortly (see Appendices F and G). After five minutes, subjects were provided with the scenario specific to their assigned experimental condition and told they had 12 minutes
to read and complete it (see Appendices H through K). After
12 minutes, these materials were removed and subjects were
given the third packet, consisting of the second mood
measure (see Appendix F), the state self focus measure
(SSF) (see Appendix L), the five manipulation check items
(see Appendix M), and a distraction task consisting of a
bogus opinion scale made up of questions about the opinions
that others hold about public issues (see Appendix N).
After exactly ten minutes, this packet was removed and the
recall measure was administered (see Appendix O). After
this was complete, subjects were debriefed and thanked for
their participation.

Experimental manipulation materials. The manipulation
was designed to present each subject with a personalized
scenario that she might imagine as possible for herself in
the future. These scenarios varied in terms of future
proximity and outcome valence. The future proximity factor
consisted of two levels, proximal and distal. Proximal
scenarios described events as occurring approximately 2
months in the future, whereas distal scenarios described
events as occurring 25 years in the future. The outcome
valence factor consisted of positive and negative outcomes.
The positive scenario described positive outcomes of events
(e.g. having a good talk), as well as pleasant circumstances
(e.g. enjoying nice weather). The negative scenario
described negative outcomes and circumstances. The stimulus
material for each condition consisted of a brief first-
person description of the outcome of a potential future
event, presented as an account made in a personal journal
following the event. The event was described in this account, along with personal evaluations of the event. Blanks were left in several places in the narrative for the subject to fill in details to personalize the account. The subject was asked to imagine herself in the scenarios and to fill in the blanks with relevant details as she imagined them (see Appendices H through K).
Results

The hypotheses of this study were organized around three dependent variables: recall, mood change, and state self-consciousness. The results of the data analyses relating to each of these variables are presented separately below, with the general results presented within each section, followed by the tests of the specific hypotheses relating to that variable. Each variable was analyzed in a 2 X 2 X 2 analysis of variance (ANOVA) procedure, the three independent variables being: level of depression (DPRN), proximity in time (PROX), and valence of the scenario outcome (OUTCM).

Planned comparisons were used to test the stated hypotheses. Simple effects were tested for significant interactions by t tests. The significance level used for the planned comparison t tests, and the ANOVA and ANCOVA F tests was p < .05. Unplanned t test comparisons between cells were reported as statistically significant only if a probability level of .01 or smaller was attained in order to reduce the type one errors (false positive findings), given the large number of unplanned tests for simple effects.

The analyses of several measures relevant to the experimental procedure are also presented. These include an analysis of mood immediately prior to participation in the study to confirm the original classification of subjects according to level of depression, and analyses of several measures of the subjects' perceptions of the scenarios to confirm that the experimental manipulation had the desired effect. The results of the 2 X 2 X 2 ANOVAs of these
measures are presented first, followed by the results of the dependent variable analyses.

Verification of Subject Classification for Depression

The time lag between initial classification of subjects with the Beck Depression Inventory in the mass-testing and their subsequent participation in the study varied from 3 weeks to 10 weeks. The pre-manipulation mood scores were analyzed to confirm correct classification of subjects as dysphoric or nondysphoric. The results showed a strong DPRN effect, $F(1, 128) = 31.77, p < .0001$.

Manipulation Checks

Five measures were included to assess subjects' perceptions of the scenarios and to provide a basis for comparing the manipulation effects with previous research. These measures consisted of: similarity to current life (SIM); frequency of prior consideration (FREQ); ease of consideration (EASE); likelihood of actual experience (LIK LHD); and desirability (DESIR). The relevant means and standard deviations of the first four variables are presented in Table 1 and those for DESIR are presented separately in Table 2, in order to better illustrate the three-way interaction found for this variable. In the presentation of the results for these variables below, the results that are directly relevant to the manipulation effects are discussed first, followed by general results.
Table 1

Means / (Standard Deviations) of Manipulation Check Variables

<table>
<thead>
<tr>
<th>Level of Depression</th>
<th>Outcome Prox</th>
<th>Dist</th>
<th>Outcome Prox</th>
<th>Dist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similarity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nondep</td>
<td>6.88 (2.07)</td>
<td>4.71 (2.67)</td>
<td>3.65 (2.81)</td>
<td>1.75 (1.61)</td>
</tr>
<tr>
<td>Dep</td>
<td>6.67 (1.95)</td>
<td>4.47 (2.93)</td>
<td>4.53 (3.93)</td>
<td>4.74 (3.00)</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nondep</td>
<td>5.69 (2.06)</td>
<td>5.21 (2.29)</td>
<td>3.24 (1.92)</td>
<td>2.69 (1.95)</td>
</tr>
<tr>
<td>Dep</td>
<td>5.67 (2.35)</td>
<td>3.68 (2.69)</td>
<td>4.24 (2.36)</td>
<td>3.95 (2.84)</td>
</tr>
<tr>
<td>Ease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nondep</td>
<td>7.56 (1.71)</td>
<td>7.50 (1.29)</td>
<td>5.00 (2.96)</td>
<td>3.63 (1.60)</td>
</tr>
<tr>
<td>Dep</td>
<td>7.87 (1.41)</td>
<td>6.47 (2.37)</td>
<td>5.29 (2.89)</td>
<td>5.21 (3.07)</td>
</tr>
<tr>
<td>Likelihood</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nondep</td>
<td>7.25 (2.32)</td>
<td>7.86 (1.41)</td>
<td>4.00 (2.67)</td>
<td>3.25 (1.84)</td>
</tr>
<tr>
<td>Dep</td>
<td>7.33 (1.88)</td>
<td>7.53 (1.57)</td>
<td>4.53 (2.45)</td>
<td>4.84 (2.50)</td>
</tr>
</tbody>
</table>

Note: DPRN X OUTCM marginals are given in [ ] brackets.

MANOVA. The manipulation check variables were analyzed collectively with a MANOVA procedure to examine overall effects and to justify additional univariate analyses. The
averaged F-test was significant for the following effects: the DPRN X PROX X OUTCM interaction, $F(5, 620) = 2.58, p < .05$; the DPRN X OUTCM interaction, $F(5, 620) = 3.45, p = .009$; the OUTCM factor, $F(5, 620) = 62.55, p < .01$. The univariate results are presented below.

SIM. Consistent with the intended manipulation, the ANOVA for this variable showed a significant main effect for PROX, $F(1, 128) = 10.76, p = .004$, indicating that subjects judged proximal scenarios to be more similar to their current experience than the distal scenarios. A main effect was also found for OUTCM, $F(1, 128) = 19.79, p < .001$, with positive outcomes being judged as more similar than negative outcomes. This effect was qualified by a significant DPRN X OUTCM interaction, $F(1, 128) = 5.45, p = .02$, which showed that nondepressed subjects considered positive outcomes more similar than negative outcomes, $t(128) = 4.58, p < .001$, while depressed subjects did not judge the positive and negative outcomes to be significantly different, $t(128) = 1.24, p = .35$.

FREQ. A PROX main effect, $F(1, 128) = 4.05, p = .04$, was found for this variable indicating that, as intended by the manipulation, proximal scenarios had been considered more frequently in the past than distal scenarios. Also, positive outcomes had been more frequently considered than negative outcomes, as indicated by a main effect for OUTCM, $F(1, 128) = 14.04, p = .0005$. This interaction was qualified by a significant DPRN X OUTCM interaction, $F(1, 128) = 5.42, p = .02$, which indicated that nondepressed subjects had considered scenarios with positive outcomes
more frequently than those with negative outcomes, \( t(128) = 4.18, p = .0002 \), while this difference did not show up for depressed subjects, \( t(128) = .84, p = .41 \).

**EASE.** A main effect was found for OUTCM only, \( F(1, 128) = 39.91, p < .0001 \), indicating that both depressed and nondepressed subjects reported that the positive outcome scenarios were easier to imagine than negative outcome scenarios, regardless of future proximity.

**LIKLD.** This ANOVA also showed only an OUTCM main effect, \( F(1, 128) = 77.12, p < .0001 \), with both depressed and nondepressed subjects judging scenarios with positive outcomes more likely to actually occur than those with negative outcomes, regardless of proximity in the future.

**DESIR.** The means and standard deviations for this variable are presented in Table 2 (please note that this table is structured differently than Table 1 to more clearly reflect the interaction effects). A main effect was found for OUTCM, \( F(1, 128) = 197.51, p < .0001 \), reflecting a strong judgement of scenarios with positive outcomes as more desirable than scenarios with negative outcomes, consistent with the intended manipulation effect.

The three-way interaction (DPRN X PROX X OUTCM) was also significant for the DESIR variable, \( F(1, 128) = 7.88, p = .005 \). A PROX X OUTCM interaction was found among nondepressed subjects showing more extreme scores for positive versus negative outcomes in the distal versus proximal condition, \( F(62) = 6.35, p = .01 \), suggesting that nondepressed subjects were more certain in their judgments about the desirability of outcomes in the distal future than
in the proximal future. Although this pattern of scores is reversed for depressed subjects, with scores being more extreme in the proximal condition than the distal condition, this interaction did not approach statistical significance ($p = .14$).

Table 2
Means / (Standard Deviations) of the Desirability Single Item Measure

<table>
<thead>
<tr>
<th>Level of Depression</th>
<th>Proximal Outcome</th>
<th>Proximal Outcome</th>
<th>Distal Outcome</th>
<th>Distal Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nondep</td>
<td>6.88 (2.78)</td>
<td>2.71 (2.82)</td>
<td>8.42 (0.76)</td>
<td>1.56 (0.99)</td>
</tr>
<tr>
<td>Dep</td>
<td>7.40 (1.88)</td>
<td>1.59 (0.87)</td>
<td>6.68 (2.71)</td>
<td>2.42 (2.48)</td>
</tr>
</tbody>
</table>

Looked at differently, the positive outcome scenarios show a tendency to be judged by nondepressed subjects as more desirable in the distal future than in the proximal future, while depressed subjects tended instead to rate proximal, positive scenarios as somewhat more desirable than the distal, positive scenarios, although neither of these differences was statistically significant ($p = .05$, and $p = .13$, respectively).
Recall

Recall means and standard deviations are presented in Table 3. Please note that scores in this table are expressed as a proportion of the total number of items.

Table 3

Means/ (Standard Deviations) for Recall of Standard Scenario Details

<table>
<thead>
<tr>
<th>Proximal</th>
<th></th>
<th>Distal</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(+)</td>
<td>(-)</td>
<td>(+)</td>
</tr>
<tr>
<td></td>
<td>Outcome</td>
<td>Outcome</td>
<td>Outcome</td>
</tr>
<tr>
<td>Level of Depression</td>
<td>Nondep</td>
<td>Dep</td>
<td>Nondep</td>
</tr>
<tr>
<td>Depression Outcome</td>
<td>(.67)</td>
<td>(.82)</td>
<td>(.75)</td>
</tr>
<tr>
<td>Outcome</td>
<td>(.23)</td>
<td>(.15)</td>
<td>[.71]</td>
</tr>
<tr>
<td>Outcome</td>
<td>(.16)</td>
<td>(.10)</td>
<td>(.76)</td>
</tr>
<tr>
<td>Outcome</td>
<td>(.15)</td>
<td>(.13)</td>
<td>[.73]</td>
</tr>
<tr>
<td>Outcome</td>
<td>(.14)</td>
<td>(.17)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Means are expressed as proportions of possible correct responses.

Note: DPRN X PROX marginals are presented in [ ] brackets.

Repeated measures. In order to examine the within-subjects difference in level of recall between the standard and self-generated information, the results were first analyzed in a repeated measures ANOVA. This type of recall (TYPE) effect, F(1, 128) = 192.08, p < .001, showed that there was a significant within-subjects difference in responses to the two recall components. Examination of the means in Table 3 reveals that recall of the self-generated
details was consistently better than recall of standard details. In fact, the recall scores for self-generated details are high enough to suggest a ceiling effect, given that 1.0 was the maximum possible score, and observed means ranged from .85 to .98 with an overall mean of .94. Because of the strong TYPE effect of the repeated measures analysis, and the probable ceiling effect for the self-generated recall measure, only standard information recall results will be reported below.^

Standard information recall. The DPRN X PROX X OUTCM ANOVA for recall of standard information showed significant main effects for all three independent variables. The OUTCM main effect, \( F(1, 128) = 5.42, p = .02 \), reflects better recall for information in scenarios with negative outcomes than those with positive outcomes. The DPRN main effect, \( F(1, 128) = 8.56, p = .004 \), reflected a higher overall level of recall by the depressed subjects than the nondepressed subjects. The PROX main effect, \( F(1, 128) = 4.86, p = .03 \), reflects a higher overall level of recall in the proximal than the distal condition. Both of these main effects, however, appear to be qualified by the DPRN X PROX interaction, \( F(1, 128) = 6.89, p = .01 \), due to the significant elevation of the mean for the depressed subjects in the proximal condition relative to the other three cells. Specifically, the depressed, proximal mean was greater than that of the depressed, distal condition, \( t(128) = 3.55, p = .0009 \), as well as the nondepressed, proximal condition, \( t(128) = 3.91, p = .0004 \), and the nondepressed, distal condition, \( t(128) = 3.62, p = .0007 \). No such difference is
found between the proximal and distal conditions for nondepressed subjects, \( t(128) = .32, p = .75 \); or between depressed and nondepressed subjects in the distal condition, \( t(128) = .15, p = .85 \). The remaining interactions were nonsignificant, with \( p \) levels greater than .70.

**Recall Hypotheses**

Planned comparisons on the recall hypotheses tested the general prediction that an expectancy-inconsistent bias would be exhibited when subjects were presented with information related to possible outcomes in a behavioral domain without a well-developed expectancy. The first two specific hypotheses predict this bias to be evident when recall for positive and negative outcome information is compared within the distal condition.

**Hypothesis # 1: Depressed, distal recall.** Depressed subjects were predicted to show better recall in the distal, positive outcome than in the distal, negative outcome condition. This planned comparison was not significant, \( t(128) = .69, p = .50 \), failing to support this hypothesis.

**Hypothesis # 2: Nondepressed, distal recall.** Nondepressed subjects were predicted to show better recall in the distal, negative outcome than in the distal, positive outcome condition. This planned comparison was not significant, \( t(128) = 1.24, p = .22 \), also failing to support the expectancy-inconsistent bias expected in the distal condition.

The next two hypotheses test the expectancy-inconsistent bias by comparing the recall for expectancy-
inconsistent outcome information in the proximal and distal conditions.

Hypothesis # 3: Depressed, positive recall. Depressed subjects in the distal, positive condition were predicted to recall details better than depressed subjects in the proximal, positive condition. This planned comparison was significant, \( t(128) = 2.07, p = .05 \), but in the opposite direction than predicted. In other words, depressed subjects showed better recall in the proximal, positive condition than in the distal, positive condition.

Hypothesis # 4: Nondepressed, negative recall. Nondepressed subjects in the distal, negative condition were predicted to recall details better than depressed subjects in the proximal, negative condition. This planned comparison was nonsignificant, \( t(128) = -.19, p = .83 \), also failing to support the predicted bias for expectancy-inconsistent possible outcomes in the distal versus the proximal condition.

Mood

The effect of the manipulation on mood was examined using a 2 X 2 X 2 (DPRN X PROX X OUTCM) analysis of covariance, with the pre-manipulation mood measure (AFFECT) as the covariate. The adjusted means are presented in Table 4. A significant main effect was found for OUTCM, \( F(1, 128) = 30.25, p < .001 \), with mood scores being more negative following exposure to scenarios with negative outcomes than positive outcomes. The remaining effects were nonsignificant, with \( p \) levels greater than .10.
Table 4

Means for the Post-Manipulation Mood Measure, Adjusted for Pre-manipulation Mood Scores

<table>
<thead>
<tr>
<th></th>
<th>Proximal</th>
<th></th>
<th>Distal</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(+)</td>
<td>(-)</td>
<td>(+)</td>
<td>(-)</td>
</tr>
<tr>
<td>Level of Depression</td>
<td>Outcome</td>
<td>Outcome</td>
<td>Outcome</td>
<td>Outcome</td>
</tr>
<tr>
<td>Nondep</td>
<td>94.99</td>
<td>82.54</td>
<td>92.04</td>
<td>72.71</td>
</tr>
<tr>
<td>Dep</td>
<td>87.66</td>
<td>75.47</td>
<td>87.14</td>
<td>74.82</td>
</tr>
</tbody>
</table>

Mood Hypotheses

Planned comparisons were performed on the adjusted means to test the stated hypotheses.

Hypothesis # 5: Depressed, positive mood contrast. Depressed subjects were predicted to show a more positive mood in the distal, positive condition than in the proximal, positive condition. The planned comparison of these two cell means (Ms = 87.14 and 87.66, respectively) was nonsignificant, t(128) = .86, p > .05).

Hypothesis # 6: Nondepressed, negative mood contrast. Nondepressed subjects were expected to show greater negative mood change in the distal, negative condition than in the proximal, negative condition. The planned comparison of these two cell means (Ms = 72.71 and 82.54, respectively) showed a significant effect, t(128) = -1.93, p = .05.
Self-Focus

State self-focus (SSF) scores were analyzed with a DPRN X PROX X OUTCM analysis of covariance procedure, using the dispositional measure of self-focus (PSC) obtained in the subject screening procedure as the covariate. Adjusted means for the state self-focus measure are presented in Table 5. The ANCOVA for SSF found a main effect for PROX, $F(1, 128) = 4.72$, $p = .03$, with scores being higher in the distal condition than the proximal condition. The remaining effects were nonsignificant, although the DPRN X PROX interaction, $F(1, 128) = 3.49$, $p = .06$, approached significance. State self-focus appears to be higher for the depressed subjects than the nondepressed subjects only in the distal condition ($p = .04$), whereas the difference between depressed and nondepressed self-focus in not significant in the proximal condition. The remaining effects were nonsignificant, with all $p > .30$.

Self-Focus Hypotheses

Hypothesis # 7: Nondepressed, negative self-focus. Self-focus by nondepressed subjects when considering negative outcomes was predicted to be greater in the distal than the proximal condition. This hypothesis was not supported as the difference between these cell means was not significant ($p = .86$).

Hypothesis # 8: Depressed, positive self-focus. It was predicted that self-focus by depressed individuals when considering positive scenarios would be higher in the distal than the proximal condition. This hypothesis was confirmed, $t(128) = 2.14$, $p = .04$. 
Table 5
Means of State Self-Focus Scores, Adjusted for Dispositional Self-Focus

<table>
<thead>
<tr>
<th></th>
<th>Proximal</th>
<th>Distal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(+)</td>
<td>(-)</td>
</tr>
<tr>
<td>Depression Level</td>
<td>Nondep</td>
<td></td>
</tr>
<tr>
<td>Outcome Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nondep</td>
<td>31.85</td>
<td>31.79</td>
</tr>
<tr>
<td>Dep</td>
<td>29.63</td>
<td>30.94</td>
</tr>
</tbody>
</table>

Note: Scores based on a scale of 10 - 50, with higher scores representing greater self-focus.

Note: DPRN X PROX marginals are presented in [ ] brackets.

Correlations
The relationships among the primary dependent variables (RCLSTD, MOOD, SSF) were examined to help interpret the ANOVA results. Of particular interest was the relationship between state self-focus and recall, given the finding that recall appeared to be better in the depressed, proximal cell, which also showed the lowest state self-focus scores. The relationship between state self-focus and mood change was also examined in light of the possible relationship between these two variables, as suggested by the literature (Pyszczynski, Holt, & Greenberg, 1987). The correlation matrices are presented in Table 6.
Table 6

Intercorrelations of Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>MOOD</th>
<th>SSF</th>
<th>MOOD</th>
<th>SSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCLSTD</td>
<td>-.14</td>
<td>-.05</td>
<td>-.11</td>
<td></td>
</tr>
<tr>
<td>MOOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nondepressed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCLSTD</td>
<td>-.20</td>
<td>.05</td>
<td>-.11</td>
<td>-.21</td>
</tr>
<tr>
<td>MOOD</td>
<td>-.27*</td>
<td></td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Depressed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCLSTD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCLSTD</td>
<td>-.16</td>
<td>-.04</td>
<td>-.15</td>
<td>.01</td>
</tr>
<tr>
<td>MOOD</td>
<td>-.16</td>
<td></td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>Distal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nondepressed,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCLSTD</td>
<td>-.17</td>
<td>-.05</td>
<td>-.25</td>
<td>.22</td>
</tr>
<tr>
<td>MOOD</td>
<td>-.23</td>
<td></td>
<td>-.34</td>
<td></td>
</tr>
<tr>
<td>Nondepressed,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCLSTD</td>
<td>-.12</td>
<td>.02</td>
<td>-.06</td>
<td>-.16</td>
</tr>
<tr>
<td>MOOD</td>
<td>-.04</td>
<td></td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Depressed,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCLSTD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressed,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05.
Discussion

Analyses of the results for the three main dependent variables of this study (recall, mood and self-focus) showed little evidence of the predicted cognitive processing bias for expectancy-incongruent information in distal future scenarios relative to proximal future scenarios. Planned comparisons showed that only two of the eight specific hypotheses were supported.

The recall results showed a strong bias for negative information in all conditions rather than the predicted bias for positive information in the depressed, distal, and the nondepressed, proximal, conditions. The mood results indicated that depressed subjects showed almost identical mood responses to the proximal and distal scenarios, which also contradicts the predicted reversal of processing bias for the distal scenarios. Nondepressed subjects did show the predicted elevation in negative mood in the distal, relative to the proximal condition, although this result suggested a weakening, rather than a reversal, of the expectancy-congruent bias. The self-focus results for depressed subjects showed the predicted elevated self-focus in the distal, positive condition relative to the proximal, positive condition, although this result was qualified by a strong proximity effect. Results for nondepressed subjects showed no self-focus differences across the proximity or outcome valence factors, contradictory to the prediction of elevated self-focus in the distal, negative condition.

Possible explanations for these results are discussed first in general terms, and then by addressing the specific
findings for each of the dependent variables. Discussions of theoretical and practical implications, and directions for future research then follow.

Effectiveness of the Experimental Manipulation

The experimental manipulation in this study was based on two basic assumptions: 1) that the positive and negative possible outcomes of the scenarios would elicit the same or similar cognitive reactions as the success and failure feedback strategies employed in other research paradigms; and 2) that scenarios set in the proximal future (2 months) would be subject to well-developed outcome expectancies, whereas scenarios set in the distal future would be subject only to poorly-developed expectancies. The lack of support found for the hypotheses must first be examined in light of these assumptions to determine whether the hypotheses were in fact put to a sufficient test to provide disconfirmation.

Outcome valence assumption. Previous research on the cognitive processing of positive and negative information has typically presented subjects with outcomes related to their performance on a task, thereby providing them with information about their present state or ability (cf. Pyszczynski, Hamilton, Herring & Greenberg, 1989). The information provided to subjects in the present study reflected positive or negative outcomes that might be experienced in the future, and it was assumed that this type of feedback would be processed in the same way as information related to the present.

Ratings of the positive and negative scenarios on the SIM and FREQ variables indicated modest support for the
outcome valence assumption. Nondepressed subjects rated positive outcomes as more similar to their current life, and as being more frequently considered than negative outcomes, whereas depressed subjects rated positive and negative outcomes as equal on these two variables. The findings regarding the optimistic bias of nondepressed individuals is consistent with previous research (Weinstein, 1980), whereas the findings for depressed subjects are consistent with research that has found depressed individuals to be more pessimistic than nondepressed individuals. The findings support the "depressive realism" or "even handedness" reported in several studies of depressed individuals (cf. Alloy & Abramson, 1988). According to this view, depressed individuals are less biased in their appraisal of reality than nondepressed individuals, and therefore are more aware of negative aspects of their lives. Ratings of positive and negative outcomes as equal in terms of similarity and frequency of prior consideration are consistent with this view.

Ratings of the EASE and LIKLHD variables did not support the assumption regarding the outcome valence. The finding that positive outcomes were rated as easier to imagine than negative outcomes by depressed subjects is inconsistent with accessibility theory and research (Higgins & Bargh, 1987; Segal, 1988) which suggests that depressed individuals should find negative outcomes easier to imagine than positive outcomes. The finding that positive outcomes were judged as more likely to actually occur than negative outcomes by both nondepressed and depressed subjects
supports findings about the optimistic bias of nondepressed individuals, but is contradictory to the lack of such optimism found for depressed individuals (e.g. Pietromonaco & Markus, 1985; Pyszczynski, Holt & Greenberg, 1987). Thus both of these measures failed to support the assumption that positive and negative possible selves elicit the same cognitive responses as the immediate feedback tactics utilized in previous research.

The lack of solid support for the crucial outcome valence assumption suggests that the outcome factor did not have the intended effect. An alternative explanation would be that the positive and negative scenarios failed to produce outcome effects because their wording was not sufficiently different, although this explanation is contradicted by the strong outcome effects found for recall and mood. Because the predicted expectancy-consistent biases were not confirmed, conclusions about the presence or absence of the predicted expectancy-inconsistent biases are necessarily limited.

**Proximity assumption.** The assumption regarding the distinct perception of scenarios based on their proximity was generally supported. Ratings of the SIM and FREQ variables suggest that scenarios set in the proximal future were judged more similar to current life, and more frequently considered, than scenarios set in the distal future. These findings strongly suggest that well-developed expectancies existed only for proximal scenarios since differences in amount of experience, familiarity, and consideration have been shown to reflect differences in the
development of expectancies (Higgins & Bargh, 1987). This assumption as it relates to the triggering of an impression-formation cognitive processing response is discussed below in terms of the dependent variables.

Recall hypotheses. A reversal of the expectancy-consistent recall bias did not occur in the distal condition as predicted (hypotheses 1 and 2). This result does not support the tenet that information about a possible self in the distant future is subject to the same expectancy-inconsistent cognitive bias as shown to occur during impression-formation. Whereas this effect has been found previously when individuals were asked to consider current information about an unfamiliar experience or individual, it was not found in the present study which asked subjects to consider information about what might happen to themselves in the unfamiliar (distant) future.

As discussed above, the lack of evidence for an expectancy-consistency bias in the proximal condition limits the conclusions that can be drawn regarding the susceptibility of developing possible selves to an expectancy-inconsistent bias. A true test of this hypothesis may have shown the same result, however. Although the distal possible selves were in the seldom-considered future and were considered dissimilar to the current self, the expectancy for the self in these scenarios may have been sufficiently developed to prevent an impression-formation response. It may be that possible selves set in a previously unconsidered, yet anticipated
behavior domain (such as parenting) are subject to the same cognitive biases as current behavioral domains due to the effects of early anticipatory socialization on expectancy development.

The likelihood results show that subjects did not distinguish between proximal and distal scenarios in their anticipation of actual outcomes. Distal, positive scenarios were judged just as likely to actually occur as proximal, positive scenarios, and negative distal and proximal scenarios were considered equally unlikely to occur. Also consistent with the lack of distinction between proximal and distal expectancy development was the absence of the predicted recall difference between proximal and distal scenarios (hypotheses 3 and 4). This suggests that the unfamiliar (distal) possible selves were subject to the same recall biases as familiar (proximal) possible selves. Perhaps the domain of the self-concept is so well developed and sufficiently unique in its structure and accessibility that all self-related information is within the grasp of the same memory processing biases.

The failure of these four hypotheses appears to be due to a strong bias resulting in uniformly better recall for information from negative outcome scenarios for all conditions. This result is inconsistent with extensive research showing recall to reflect a mood-congruent bias (Blaney, 1986), with depressed individuals biased toward recalling less positive and more negative information than nondepressed individuals. This, again, is an indication of the failure of this study to reproduce the expectancy-
consistent biases in the proximal condition. One possible explanation of these results is that level of arousal may account for the overall negative recall bias, as illustrated in a recent series of studies by Reisberg, Heuer, McLean & O'Shaughnessy (1988). They found a strong association between the vividness of memories for experiences and the strength of the affect related to those memories, while no association was found between memory vividness and the valence of the related affect. The degree of overall arousal produced by the affect, regardless of valence was deemed responsible for heightened encoding of detail.

Following from this research, it is possible that the better recall of the negative scenarios in this study may have been due to a higher level of arousal as a result of these scenarios, relative to the positive scenarios. Since heightened arousal has been shown to intensify affective responses (Zillmann, 1978; Clark, 1982), one possible indicator of emotional arousal in this study is the degree of mood change resulting from exposure to the scenarios. Examination of the pre- and post-manipulation mood change scores reveals that negative scenarios did not produce a greater mood change than positive scenarios. Positive scenarios produced an overall positive change of +9.25 in mood scores, averaged across the DPRN and PROX factors, while negative scenarios produced a negative mood change of -4.73 in mood scores averaged across DPRN and PROX factors. This finding contradicts the arousal explanation, although it cannot be ruled out based only on this indirect indicator of arousal.
Perhaps the nature of the scenarios themselves provides the most reasonable accounting of these results. As Markus and Nurius (1986) point out, possible selves are important because "they function as incentives for future behavior (i.e. they are selves to be approached or avoided)" (p. 955). The desirability measure indicates that depressed and nondepressed subjects were similar in their view of the positive and negative scenarios as outcomes to strive for and to avoid, respectively. It may have been that the threatening aspects of the negative possible selves were more powerful for both depressed and nondepressed subjects than the goals represented by the positive possible selves, causing subjects to attend to and process information related to the negative more extensively than the positive possible selves. This interpretation of the results is supported by the finding that nondepressed subjects reacted to negative scenarios with a significant decrease in mood in the distal relative to the proximal condition, whereas positive scenarios failed to produce this pattern in the mood scores of depressed subjects. The difference between the threatening implications of negative possible selves and the goal-attainment quality of positive possible selves may be ultimately responsible for the observed discrepancies in their ease of recall.

Depressive myopia. An unexpected and surprising recall finding was the relatively high level of recall exhibited by depressed subjects in the proximal condition. The finding that these subjects showed significantly better recall than subjects in the depressed, distal and the nondepressed
proximal and distal conditions suggests a type of shortsightedness by depressed individuals in processing information about their future. It may be that depressed individuals prefer to focus on possible outcomes in the near, more familiar, future, rather than consider the possibilities that lie in the relatively unfamiliar distant future. Cognitive theories of depression (Beck, 1967, 1976), and research on cognitions of depressives (e.g., Beck Weissman, Lester, & Trexler, 1974) point to the pessimistic view depressed individuals have of their future. This suggests a type of ongoing vigilance of what negative event might befall them next, and what effect it may have on their lives. Viewed in this light, depressed subjects in this study may have considered proximal future scenarios as particularly relevant to their sense of well-being, and therefore attended to them more than to distal scenarios. This may have resulted in heightened processing and hence better recall of proximal scenarios. Distant future scenarios, in contrast, represent possible outcomes which do not pose an immediate threat, and are thus not as relevant to the depressed individual.

Two other findings of this study lend credence to this conclusion. The three-way interaction found in the analysis of the desirability measure showed that in comparison with nondepressed subjects, depressed subjects tended to make more extreme desirability ratings of the proximal scenarios than the distal scenarios. This suggests that while nondepressed subjects expressed more certainty in their judgments of the distal relative to the proximal future,
this pattern was reversed for depressed subjects. Additional support of this shortsightedness, or depressive myopia, is suggested by the finding of decreased state self-focus by depressed subjects in the proximal condition relative to the distal condition, while no such difference was found for nondepressed subjects. These results suggest that attention to information in the proximal scenarios drew the attention of the depressed subjects away from themselves, thus decreasing state self-focus. In contrast, self-focus in the distal scenarios was higher for depressed subjects than nondepressed subjects, consistent with previous research in this area (Ingram, Lumry, Cruet, & Sieber, 1987; Smith, Ingram, & Roth, 1985).

This argument is also supported by previous research on the delay of gratification and punishment by depressed individuals. Several studies have found that depressed mood in children is related to a focus on immediate gratification (e.g. Mischel, Ebbesen, & Zeiss, 1972; Schwarz & Pollack, 1977). Similarly, Wertheim and Schwarz (1983) found that depressed individuals tended to choose to delay punishment rather than get it over with immediately, even though this choice resulted in a higher overall negative impact of the punishment. They concluded that depressives are primarily interested in preventing their current negative emotional state from worsening, resulting in an increased salience of current outcomes relevant to future outcomes. This is consistent with findings in the present study suggesting that proximal scenarios receive a higher level of cognitive processing than those in the distal future.
The depressive myopia finding may be relevant to cognitive theories of depression. Beck (1976), for example, points to the central role that pessimism plays in the maintenance of depression. The current results provide an indication of the range of this pessimism, suggesting that the narrow focus of the depressed individual's views may keep attention to the near future, possibly because it is more salient to that individual's current sense of well-being. There are indications also that nondepressed individuals show the opposite tendency. The distant future may gain more of their attention, presumably because their optimism allows them to take the outcomes in the near future for granted.

Mood

Depressed subjects showed a strong reaction to the outcome valence of the scenarios, although they did not respond to the proximity aspects, instead showing similar responses in both the proximal and distal conditions. As was found for the recall variable, this finding does not support the expectancy-consistent bias previously found for the processing of information by depressed individuals (Beck, 1986; Pyszczynski, Holt, & Greenberg, 1987). In other words, depressed subjects showed cognitive processing of expectancy-inconsistent (i.e. optimistic) information not only in the distal scenarios, as hypothesized, but also in the proximal scenarios.

Again, the unpredicted mood results appear most likely attributable to the future-oriented nature of the feedback utilized in the experimental manipulation. As discussed
above, these subjects may have reacted to the potential threats and successes represented by the positive and negative possible selves in a different manner than has been found for subjects given immediate success or failure feedback. Subjects were asked to consider scenarios that presented the possibility of either significant failure or success in an important social encounter. The finding that the positive and negative scenarios produced corresponding positive and negative changes in mood in all conditions indicates how powerful possible selves are for the manipulation of mood.

Findings for nondepressed subjects supported the predicted increase in cognitive processing of expectancy-inconsistent information in the distal relative to the proximal condition, although there was no evidence of the predicted reversal of the expectancy-consistent bias in the distal condition. The significant difference in negative mood scores between the distal and proximal conditions by nondepressed subjects suggests that information about expectancy-inconsistent (i.e. pessimistic) possible selves received more extensive processing in the distal than the proximal scenarios, apparently due to a weakening of the nondepressive optimistic bias.

This mood finding for nondepressed subjects supports the contention that information about one's possible outcomes in the distal future is less susceptible to expectancy-consistent bias, presumably due to the lack of a well-developed expectancy for possible selves in the distal future. There is no evidence, however, that processing by
nondepressed subjects was biased in favor of expectancy-inconsistent (i.e. pessimistic) information in the distal scenarios. Thus, even though the expectancy-consistent bias appears to have weakened in the distal condition, there is no support for the hypothesis that the processing of possible selves in the distal future resembles the bias toward expectancy-inconsistent information that occurs during impression formation.

The confirmation of the mood hypothesis for nondepressed subjects but not depressed subjects may be related to overall differences in responses to the positive and negative scenarios. Since the mood hypothesis for nondepressed subjects relied on reactions to negative scenarios, and since the recall findings suggest that negative scenarios generally received more extensive processing than positive scenarios, it appears likely that the mood results were due to the extent of processing of the negative as opposed to the positive scenarios. These results indicate that the bias of nondepressed subjects against processing expectancy-inconsistent (i.e. pessimistic) information was not as strong when the information represented the relatively distal future. This may have been due to the relative lack of expectancies for outcomes in anticipated roles in the distal future which would have increased receptiveness to novel, expectancy-inconsistent information.

An alternative explanation is that the more elaborate processing of the negative scenarios was due to something other than outcome valence, such as differences in the
wording or situations of the proximal and distal scenarios. For example, nondepressed subjects may have reported more negative mood in response to negative outcomes in the distal than the proximal condition simply because the negative outcome in the distal scenario might have been perceived as a more serious failure. The lack of similar proximity effects for positive outcomes argues against this explanation, however, since the positive outcome in the distal scenarios should have been seen as significantly more positive than the proximal scenarios, and therefore produced differences in positive mood.

Overall, the mood results indicate that exposure to the scenarios in this study produced a significant positive or negative mood change for both nondepressed and depressed subjects that was consistent with the outcome valence of the scenario. It is interesting to note that these mood changes occurred for negative possible selves even though these outcomes were judged unlikely to actually occur by both depressed and nondepressed subjects. The mood results also provide evidence of a weakening of the expectancy-consistent bias in nondepressed subjects when they consider the distal future, suggesting that expectancy-inconsistent information receives more extensive processing when it is related to relatively unfamiliar as opposed to familiar behavior domains. This effect was observed only when the expectancy-inconsistent information received generally higher processing, however, hence the confirmed prediction for nondepressed but not depressed subjects due to relatively higher processing of negative scenarios. The results
generally indicate that possible selves are linked closely to an individual's current mood, and provide further support for the self-concept model developed by Hazel Markus and her colleagues (Markus & Wurf, 1987; Markus & Nurius, 1986; Markus & Kunda, 1986), particularly regarding the influence of possible selves on affect.

Self-focus

Contrary to the predicted result, the valence of the scenario outcomes had no effect on the state self-focus of either the depressed or nondepressed subjects. The level of self-focus shown by nondepressed subjects was consistent across the proximity and outcome valence factors. This finding is different from the findings of previous studies (Pyszczynski et al., 1987) which have found that the self-focus of nondepressed individuals increases following exposure to success feedback. Depressed subjects showed the predicted higher level of self-focusing in the distal than the proximal condition when considering positive outcome scenarios. This appears, however, to be due primarily to the significantly higher self-focus by depressed subjects in the distal condition than the proximal condition, regardless of outcome valence. This lack of response to the positive and negative outcomes in the scenarios is inconsistent with research showing that depressives engage in higher levels of self-focus following failure experiences (e.g. Greenberg & Pyszczynski, 1986). This provides further support for the conclusion that the possible future successes and failures presented in this study were subject to different processing
than the present-oriented success and failure feedback used in previous research.

The self-focus results discussed above in conjunction with the recall and mood results suggest a relationship between state self-focus and cognitive processing such that lower state self-focus is associated with more extensive processing, leading to better recall. This is suggested by the finding that depressed subjects in the proximal condition showed both lower state self-focus and relatively better recall than in the distal condition. The finding that the self-focus of the depressed subjects in the distal condition is higher than the depressed, proximal as well as the overall self-focus levels of nondepressed subjects is consistent with previous findings that depressed individuals exhibit higher levels of self-focus than nondepressed individuals (Ingram, Lumry, Cruet, & Sieber, 1987; Smith, Ingram, & Roth, 1985). This further supports the interpretation that the lower self-focus in the depressed, proximal condition is due to processing of the scenario. The relationship between state self-focus and recall by depressed subjects is, however, only marginally supported by a correlation of -.21 ($p = .08$). Thus, while it appears reasonable that the processing of the proximal scenarios by depressed subjects counteracted their natural tendency to engage in higher levels of self-focus, presumably by drawing their attention away from themselves, this conclusion is only modestly supported.

To summarize, the results of this study did not conform to the general predictions regarding cognitive processing
biases. Little evidence was found of the predicted expectancy-consistent bias in the proximal condition, and only limited evidence was found for increased processing of expectancy-inconsistent information in the distal condition. The lack of support for the hypotheses of the study may have been due to an unsupported assumption that subjects would respond to positive and negative possible outcomes in the same way as success and failure experiences. Perhaps the most significant and interesting finding was the combination of relatively higher recall and lower self-focus by depressed subjects who were presented with scenarios set in the proximal future. This provided evidence of a type of depressive myopia cognitive bias for depressed individuals, as well as suggesting a link between their level of information processing and self-focus. This relationship received only mixed support, however.

Practical Implications of Study

The most significant practical aspect of this study relates to the use of possible self-images to bring about mood change in both depressed and nondepressed individuals. Markus and Nurius (1986) argue convincingly that positive and negative possible selves have powerful emotional effects; positive possible selves can represent one's most cherished hopes and dreams, while negative possible selves can harbor one's most dreaded fears. The results of this study confirm the powerful effect that information related to possible selves can have on emotion, regardless of the individual's level of depression just prior to exposure to the information.
Positive or negative expectancies for the self did not appear to bias the processing of expectancy-inconsistent possible selves. As Markus and Nurius (1986) note, possible selves may be more malleable and easier to change than other self-conceptions, due to being tied less closely to reality. Thus, individuals may be more willing to "try on" a possible outcome, even if it is inconsistent with their general expectancies for their future, in order to check out its desirability. This may provide a safe way to explore alternative courses of action with the risk being limited to a shift in mood rather than the shift in self-image that the experience of success or failure might necessitate. As such, possible selves do seem to comprise a distinct and valuable element of an individual's self-concept.

These findings might be applied in practical settings in a number of ways. Possible self-images might be used in a clinical setting to produce mood changes in clients who exhibit either an excessively elevated or depressed mood state. Individuals in the midst of a hypomanic episode, for instance, might be exposed to negative possible selves to the point that their mood comes down to a level more congruent with their reality. Similarly, depressed individuals could be asked to consider positive possible selves, thereby elevating their mood and possibly decreasing other depressive symptoms such as low energy and sleep disturbance. Such application would correspond to cognitive behavioral therapy techniques such as those used by Beck (1967) to combat the negative view of the future which he includes in the depressive triad.
The results of this study suggest that depressed individuals are more receptive to information about possible outcomes in the relatively proximal future than the distal future. Discussions about what might happen to them in the next few weeks or months appear to be more likely to gain their attention than focusing on long-term goals or predictions. Focusing on proximal possibilities also may have the benefit of decreasing the depressed individual's depressive self-focus which has been shown to lead to decreased pessimism (Pyszczynski, Holt & Greenberg, 1987). Asking depressed individuals to focus on positive possible selves in the distal future, on the other hand, appears likely to maintain their elevated self-focus, although at least a temporary improvement in mood may still result.

For use outside of a clinical setting, possible selves could be used by individuals on their own to counteract mood disturbances at an early stage. Since positive and negative possible selves are easy to comprehend and utilize and apparently very responsive to self-related information, they may be very useful to the individual to help maintain a balanced mood state. Besides mood, possible selves appear to have a strong link to motivation and subsequent behavior. This can be utilized by individuals to create a sense of optimism or pessimism as needed. Positive possible selves can be used to motivate behavior that moves one toward a goal. Negative possible selves can likewise be used to motivate behavior away from the imagined outcome. Again, the current results suggest that while nondepressed individuals respond to outcomes set in the relatively distal
future, depressed individuals respond best to possible outcomes in the proximal future.

Directions for Future Research

An essential assumption of this study was found to be unsupported due to what appear to be unique cognitive biases for information related to possible selves. Future research on possible selves could study the cognitive biases operating when individuals consider possible positive and negative outcomes, contrasting these with biases found in studies using immediate success or failure feedback. Because of the faulty assumption regarding the processing of expectancy-consistent information, the conclusions that could be drawn about cognitive biases for expectancy-inconsistent information were limited. This issue could be addressed more effectively once the overall processing of information bearing on possible selves is better understood.

The possible selves literature is still relatively sparse since its inception by Markus and Nurius in 1986. While few conclusions could be settled on as a result of the present research, it illustrated that individuals do react to information about possible selves with interesting and unexpected recall, mood, and self-focus responses. There are many different directions that future research on can and should pursue, such as examining how socialization contributes to positive and negative possible self-images in children, specifying the linkage between possible selves and motivation, and applying possible selves in clinical settings. Although this study used only female subjects to avoid gender confounds, future research could examine gender
differences in cognitions related to possible selves. Given the findings of gender differences in self-focus and depression (Ingram et al., 1988), differences in self-focus cognitions appear warranted.

The depressive myopia finding in this study suggests that the connection between depression and expectations for future outcomes continues to be an important area for future research. For example, the responses of depressed individuals to possible outcomes set at various points in the future could be examined to further understand how they view their future, and what type of positive possible selves would be most effective in instilling a renewed sense of hope for the future. Improved measures of recall and state self-focus could be employed in such research to produce a more accurate picture of the cognitive processes occurring under these conditions. Finally, research on the mood manipulation effects of possible selves should explore the duration of these effects, as well as the duration of other cognitive responses, such as changes in state self-focus. As Markus and Nurius suggest, future research is likely to show that possible selves are an important and powerful aspect of cognition with significant implications for affect and motivation.
Notes

1 The standard and self-generated components of the recall measure were analyzed with a repeated measures ANOVA, which revealed an OUTCM X TYPE (standard versus self-generated) effect ($F(1, 128) = 4.83$, $p < .05$), and a significant DPRN X PROX X TYPE interaction, $F(1, 128) = 17.56$, $p < .01$. Because of the ceiling effect found for the self-generated component, and the significant interactions by type of recall, the standard and self-generated components were analyzed separately.

2 Analysis of the self-generated recall component indicated main effects for DPRN ($F(1, 128) = 11.14$, $p < .005$), with depressed subjects once again showing better recall than nondepressed subjects, and PROX ($F(1, 128) = 10.34$, $p < .005$), with recall better in the proximal than the distal condition. The DPRN X PROX interaction was also significant for this variable ($F(1, 128) = 5.11$, $p < .05$), such that recall in the nondepressed, distal condition was lower than in the other conditions, which were all uniformly high, showing few recall errors. This effect was not anticipated and attempt at explaining it will be made. The remaining effects were nonsignificant, with $p > .25$. 
Acknowledgements

The Iowa State University Committee on the Use of Human Subjects in Research reviewed this project and concluded that the rights and welfare of the human subjects were adequately protected, that risks were outweighed by the potential benefits and expected value of the knowledge sought, that confidentiality of data was assured, and that informed consent was obtained by appropriate procedures.

The author wishes to acknowledge and thank each member of his advisory committee for their helpful comments and suggestions: Drs. Frederick X. Gibbons, Robert Strahan, Fred Borgen, Edwin Lewis, and Sedahlia Jasper Crase. Special thanks are extended to Rick Gibbons who served as major professor during my doctoral program and provided valued guidance and motivation, and to Robert Strahan who provided statistical consultation on this project.

Finally, I wish to acknowledge the invaluable support I received during this project from my wife, Deborah. She is simply wonderful.
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Appendix A

Beck Depression Inventory
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Appendix B

Private Self-Consciousness Scale
Please read each of the following statements and rate them according to how well they describe you while you were reading the journal entry. This is a 5 point scale with 1 meaning definitely false and 5 meaning definitely true.

<table>
<thead>
<tr>
<th>DEFINITELY FALSE</th>
<th>DEFINITELY TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
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<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

___ I am always trying to figure myself out.
___ I am generally aware of myself.
___ I reflect about myself a lot.
___ I am the subject of my own fantasy.
___ I often scrutinize myself.
___ I am generally attentive to my inner feelings.
___ I am constantly examining my motives.
___ I sometimes have the feeling that I am off somewhere watching myself.
___ I am alert to changes in my mood.
___ I am aware of the way my mind works.
Appendix C
Consent Form
Consent Form

The Psychology Department of Iowa State University supports the practice of protection of human subjects in research. The following information is provided so that you can decide whether you wish to participate in the present study. However, even if you agree to participate, you are free to withdraw at any time during the procedure without penalty.

This study involves imagining yourself in a future situation. You will be asked to read over a situation and personalize it with your own details as you imagine the situation. You will also be asked questions about your feelings and thoughts.

Your answers will be kept confidential. Your name will never be associated with the study or the results in any way. If for any reason, you feel that you wish to talk further on the same subject matter, Mr. Huston will be able to assist you or direct you to other professional services.

Please write your name below.

________________________________________
Name

________________________________________   __________________________
Signature            Date
Appendix D

Pre-manipulation mood scale
Affect Questionnaire

We would like to find out how you are feeling right now. Please place a slash mark on the line for each adjective below according to how you feel right now.

Happy

not at all

Discontent

not at all

Insecure

not at all

Hopeful

not at all

Tense

not at all

Joyful

not at all

Discouraged

not at all

Pleased

not at all

In general, how would you describe your feelings right now?

Very positive

Very Negative
Appendix E

Post-manipulation mood scale
Mood Survey

We would like to find out what your mood is right now. Please indicate your current mood by putting a slash mark on the line for each adjective below.

Relaxed

___________________________ not at all very

Displeased

___________________________ not at all very

Encouraged

___________________________ not at all very

Sad

___________________________ not at all very

Unhappy

___________________________ not at all very

Hopeless

___________________________ not at all very

Secure

___________________________ not at all very

Content

___________________________ not at all very

In general, how would you describe your mood right now?

___________________________ Very positive Very Negative
Appendix F

Instructions for the proximal scenarios
On the following pages, you are presented with a description of the events of a weekend you might experience several months in the future. In this situation, you are at school and are entertaining a visitor from out of town (eg. friend or family) from noon on Saturday until Sunday afternoon. Some specific details of the visit are provided, and you will provide the remaining details where indicated so that a complete and clear picture is formed. Spend a few moments now relaxing while you imagine yourself a few months from now, entertaining a visitor over the weekend.

In a few minutes, you will be provided details of this weekend. First, read the details of the situation that are provided. An account of the weekend is then presented in the form of a private entry in a personal journal, such as you might keep to remember your experiences. It may not be your personal style to keep a journal, but please try to imagine that this is something you do in the following situation.

The entry has been written in a general way, and may be slightly different than the way you imagine yourself experiencing it and writing about it. For this reason, blanks have been left in several places so that you can personalize the journal entry according to your own mental image of what you think you would experience and to reflect your own writing style.

After you have filled in these blanks, please read the entry over again, trying to picture yourself in the situation, and complete the questionnaires that follow.
Appendix G

Instructions for the distal scenarios
On the following pages, you are presented with a description of the events of a weekend you might experience in the distant future. Imagine yourself as a mother approximately 25 years from now. Your young adult son or daughter comes home from college to spend part of the weekend with you while your husband is out of town on a business trip. Some specific details of the visit are provided, and you will provide the remaining details where indicated so that a complete and clear picture is formed. Spend a few moments now relaxing while you imagine yourself in the distant future, entertaining your son or daughter over the weekend.

In a few minutes, you will be provided details of this weekend. First, read the details of the situation that are provided. An account of the weekend is then presented in the form of a private entry in a personal journal, such as you might keep to remember your experiences. It may not be your personal style to keep a journal, but please try to imagine that this is something you do in the following situation.

The entry has been written in a general way, and may be slightly different than the way you imagine yourself experiencing it and writing about it. For this reason, blanks have been left in several places so that you can personalize the journal entry according to your own mental image of what you think you would experience and to reflect your own writing style.

After you have filled in these blanks, please read the entry over again, trying to picture yourself in the situation, and complete the questionnaires that follow.
Appendix H
Proximal, positive scenario
Allow yourself to relax as you carefully read the description and journal entry below. As you read, begin to mentally experience the situations using all of your senses. Imagine not only the sights and sounds, but also the sensations of touch, smell and taste that go along with the situations. Afterwards, take a few moments to close your eyes and allow yourself to get into the description as much as possible before going on to the next step.

General description: Imagine yourself sitting in your bedroom alone at school on a Sunday evening a few months from now. You can hear the wind blowing and you are glad to be inside away from the cold. You sit back and relax after studying for a while. Your thoughts drift back to the weekend you just spent with your _______________ (mother, father, brother, sister, other relative, or high school friend). He/She left for home this afternoon after visiting you at school.

You take out the small notebook where you have been keeping notes about some of your memorable college experiences (both good and bad). You pick up your pen and get comfortable, and then begin writing your latest entry. Imagine that you make the following entry. Go slowly and pause to imagine yourself in the situations described. Then fill in the blanks with details as you imagine them.

Date: _______, 19__
__________________ left for home this afternoon at 3:00 after spending the weekend. He/She got here Saturday at noon. I hadn’t seen him/her since ________________.
I arranged to spend Sat. afternoon at the (museum, ballgame, mall, park, etc.) together, where we had a great time because _______________________.

After that, we got seated right away at a nice Oriental restaurant where I had made reservations for dinner. We were both impressed with the good food and service. During dinner, ___________________ told me how proud he/she was of me because of my ________________________.

I was relaxed and open with him/her, and we had fun talking about what was happening in our lives. I told him/her I was especially optimistic about the next few months because ________________________.

After dinner, we met a friend of mine and went to a movie in campustown. I timed it well so that we missed the long lines and got right into the theater. The movie was impressive. We talked about it as we left the theater and headed for a late night snack at ________________.

This morning, ________________ and I went for brunch at 11:00 at a nice Ames restaurant. He/She told me that he/she liked my friend that he/she met last night because _________________________. Before he/she left this afternoon, we went for a relaxing walk through campus. The weather was beautiful as I showed him/her the ______________________ building where I have one of my favorite classes, __________________. We talked and laughed as we headed back to my place. It was obvious that ________________ had enjoyed the visit with me. All in all, this weekend went well and was fun.
Appendix I

Proximal, negative scenario
Allow yourself to relax as you carefully read the description and journal entry below. As you read, begin to mentally experience the situations using all of your senses. Imagine not only the sights and sounds, but also the sensations of touch, smell and taste that go along with the situations. Afterward, take a few moments to close your eyes and allow yourself to get into the description as much as possible before going on to the next step.

General description: Imagine yourself sitting in your bedroom alone at school on a Sunday evening a few months from now. You can hear the wind blowing and you are glad to be inside away from the cold. You sit back and relax after studying for a while. Your thoughts drift back to the weekend you just spent with your ____________ (mother, father, brother, sister, other relative, or high school friend). He/She left for home a this afternoon after visiting you at school.

You take out the small notebook where you have been keeping notes about some of your memorable college experiences (both good and bad). You pick up your pen and get comfortable, and then begin writing your latest entry. Imagine that you make the following entry. Go slowly and pause to imagine yourself in the situations described. Then fill in the blanks with details as you imagine them.

Date: ________, 19__
____________________ left for home this afternoon at 3:00
after spending the weekend. He/She got here Saturday at noon. I hadn’t seen him/her since ________________.
I forgot to make arrangements for Sat. afternoon, so we ended up spending the day at the ________________ (museum, ballgame, mall, park, etc.) together, where we had a lousy time because _____________________________. After that, we had to wait quite a while to get into a nice Oriental restaurant for dinner because I didn’t make reservations. We were both disappointed with the food and service. During dinner, ________________ told me how concerned he/she was because of my _________________. I was tense and inhibited with him/her, and we found it uncomfortable talking about what was happening in our lives. I told him/her I was especially pessimistic about the next few months because _____________________________. After dinner, we met a friend of mine and went to a movie in campustown. I timed it badly, so that we had to stand in a long line to get into the theater. The movie was not impressive. We talked about it as we left the theater and headed for a late night snack at _________________.

This morning, ________________ and I went for brunch at 11:00 at a nice Ames restaurant. He/She told me that he/she didn’t like my friend that he/she met last night because _____________________________. Before he/she left this afternoon, we went for a quick walk through campus. The weather was miserable as I showed him/her the ________________ building where I have one of my favorite classes, ________________. We were both quiet and upset as we headed back to my place. It was obvious that ________________ had not enjoyed the visit with me. All in all, this weekend went terribly and was miserable.
Appendix J
Distal, positive scenario
Allow yourself to relax as you carefully read the description and journal entry below. As you read, begin to mentally experience the situations using all of your senses. Imagine not only the sights and sounds, but also the sensations of touch, smell and taste that go along with the situations. Afterward, take a few moments to close your eyes and allow yourself to get into the description as much as possible before going on to the next step.

General description: Imagine yourself sitting in your own home 25 years from now. Imagine that you are the parent of a 19 year old _______ (son or daughter) who is a first year college student. It is Sunday evening and you are sitting alone in your home, after spending the weekend with __________ on his/her first visit home from school. Your wife/husband has been away from home on a business trip and will get home tomorrow. You can hear the wind blowing and you are glad to be inside away from the cold. You sit back and relax as your thoughts drift back to events of the weekend with __________. He/She left to go back to school this afternoon.

You take out the small notebook where you have been keeping notes about some of your memorable experiences as a parent (both good and bad). You pick up your pen and get comfortable, and then begin writing your latest entry. Imagine that you make the following entry. Go slowly and pause to imagine yourself in the situations described. Then fill in the blanks with details as you imagine them.
Date: ________, 20__

________________ left for school this afternoon at 3:00 after spending the weekend. He/She got here Saturday at noon. I hadn’t seen him/her since __________________. I arranged to spent Sat. afternoon at the _______________ (museum, ballgame, mall, park, etc.) together, where we had a great time because ____________________________. After that, we went to a nice Oriental restaurant where we were seated quickly because I had made reservations for dinner. We were both impressed with the good food and service. During dinner, ________________ told me how proud he/she was of me because of my __________________. I was relaxed and open with him/her, and we had fun talking about what was happening in our lives. I told him/her I was especially optimistic about the next few months because ________________________________.

After dinner, we went to a movie downtown. I timed it well so that we missed the long lines and got right into the theater. The movie was impressive. We talked about it as we left the theater and headed for a late night snack at ____________________.

This morning, ________________ and I went for brunch at 11:00 at a nice restaurant. He/She told me that he/she liked spending time alone with me without the rest of the family around for a change last night because ________________________________.

Before he/she left this afternoon, we went for a relaxing walk around town. The ________________ (fall, winter, spring, summer) weather was beautiful as I showed him/her
the ____________ building where I am now working in my new position as a _______________. We talked and laughed as we headed back home. It was obvious that ________________ had enjoyed the visit with me. All in all, this weekend with went well and was fun.
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Appendix K

Distal, negative scenario
Allow yourself to relax as you carefully read the description and journal entry below. As you read, begin to mentally experience the situations using all of your senses. Imagine not only the sights and sounds, but also the sensations of touch, smell and taste that go along with the situations. Afterward, take a few moments to close your eyes and allow yourself to get into the description as much as possible before going on to the next step.

General description: Imagine yourself sitting in your own home 25 years from now. Imagine that you are the parent of a 19 year old ____ (son or daughter) who is a first year college student. It is Sunday evening and you are sitting alone in your home, after spending the weekend with _________ on his/her first visit home from school. Your wife/husband has been away from home on a business trip and will get home tomorrow. You can hear the wind blowing and you are glad to be inside away from the cold. You sit back and relax as your thoughts drift back to events of the weekend with _________. He/She left to go back to school this afternoon.

You take out the small notebook where you have been keeping notes about some of your memorable experiences as a parent (both good and bad). You pick up your pen and get comfortable, and then begin writing your latest entry. Imagine that you make the following entry. Go slowly and pause to imagine yourself in the situations described before filling in the blanks with details as you imagine them.
Date: ____, 20_

_________ left for school this afternoon at 3:00 after spending the weekend. He/She got here Saturday at noon. I hadn't seen him/her since _________________. I forgot to make arrangements for Sat. afternoon, so we ended up spending the day at the _______________ (museum, ballgame, mall, park, etc.) together, where we had a lousy time because _________________.

After that, we had to wait quite a while to get into a nice Oriental restaurant for dinner because I didn’t make reservations. We were both disappointed with the food and service. During dinner, _______________ told me how concerned he/she was because _________________.

I was tense and inhibited with him/her, and we found it uncomfortable talking about what was happening in our lives. I told him/her I was especially pessimistic about the next few months because _________________.

After dinner, we went to a movie downtown. I timed it badly, so that we had to stand in a long line to get into the theater. The movie was not impressive. We talked about it as we left the theater and headed for a late night snack at _________________.

This morning, _______________ and I went for brunch at 11:00 at a nice restaurant. He/She told me that he/she didn’t liked spending time alone with me without the rest of the family around last night because _________________.

Before he/she left this afternoon, we went for a quick walk around town. The _______________ (fall, winter,
spring, summer) weather was miserable as I showed him/her the __________ building where I am now working in my new position as a _____________. We were quiet and upset as we headed back home. It was obvious that __________ had not enjoyed the visit with me. All in all, this weekend went terribly and was miserable.
Appendix L

State self-focus measure
Please read each of the following statements and rate them according to how well they describe you while you were reading the journal entry. This is a 5 point scale with 1 meaning definitely false and 5 meaning definitely true.

<table>
<thead>
<tr>
<th>DEFINITELY FALSE</th>
<th>DEFINITELY TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

___ I was trying to figure myself out.
___ I was generally aware of myself.
___ I reflected about myself alot.
___ I was the subject of my own fantasy.
___ I wasn’t scrutinize myself.
___ I was generally attentive to my inner feelings.
___ I was constantly examining my motives.
___ I sometimes had the feeling that I was off somewhere watching myself.
___ I was alert to changes in my mood.
___ I was aware of the way my mind worked when I worked through the problems.
Appendix M
Manipulation check items
Please provide the following general information by marking the scales below and by marking the appropriate blanks.

How similar was the situation in the journal entry to your current life?

VERY SIMILAR \( \times \times \times \times \times \times \times \times \times \times \times \) DIFFERENT

Before today, how often had you thought about this possible situation?

VERY OFTEN \( \times \times \times \times \times \times \times \times \times \times \times \) NEVER

How easy did you find it to imagine yourself in the situation described in the journal entry?

VERY EASY \( \times \times \times \times \times \times \times \times \times \times \times \) VERY HARD

How likely do you think you are to actually experience a situation similar to the one described in the journal entry?

VERY LIKELY \( \times \times \times \times \times \times \times \times \times \times \times \) UNLIKELY

How desirable would this situation be to you?

VERY DESIRABLE \( \times \times \times \times \times \times \times \times \times \times \times \) UNDESIRABLE
Appendix N

Distraction task
Please answer each question by indicating how you think the people specified in each question would respond.

1. Rank order all of the following topics in the order that you think they concern couples who have stayed married for more than 20 years. Use the numbers 1, 2, 3, 4, 5, where 1 = this topic is of most concern and 5 = this topic is of least concern.
   ___ spouse relationship
   ___ family relationships
   ___ career success
   ___ financial success
   ___ personal health

2. Please put a "1" next to the political/social topic listed below that you think most American adults report matters most to them and a "5" next to the one they report matters least. (Only rate these two alternatives.)
   ___ the environment
   ___ the economy
   ___ foreign affairs
   ___ social programs
   ___ national defense

3. Rank order all of the following concerns in the order that you think that they are reported as mattering to college students who graduated in the top 25% of their classes.
   ___ family
4. Put a "1" next to the characteristic that you think successful managers report as mattering the most to them when evaluating an employee, and a "5" next to the one that they report matters least.

- employee works hard
- employee is on time
- employee takes initiative
- employee follows orders exactly
- employee gets along well with coworkers

5. Put a "1" next to the statement which is most likely to be supported by people who report that they have done well professionally (regardless of field) and a "5" next to the statement which is least likely to be supported by them. (Only rate these two alternatives.)

- Success is 5% luck and 95% effort.
- The ability to get along well with others is critical in any field.
- Leadership ability is the best predictor of success.
- A good education is one's most valuable possession.
- Anyone can make it if they try.

6. Put a "1" next to the statement below which you feel is most descriptive of the attitude of the average college
student toward cheating, and a "5" next to the least
descriptive statement. (Only rate these two alternatives.)

____ Cheating on anything at any time is totally wrong.
____ It’s O.K. to cheat if you know that several other
people in the class are doing so.
____ It’s O.K. to cheat if you know that you could have
done the work honestly if you’d just had enough time.
____ It’s O.K. to cheat if you’re sure you won’t get
caught.
____ It’s O.K. to help someone else cheat even though it’s
not O.K. for you to cheat.

7. Put a "1" next to the quality that you think most
American adults report as most important in choosing their
friends, and a "5" by the least important quality. (Only
rate these two alternatives.)

____ social contacts of potential friend
____ physical attractiveness of a potential friend
____ financial standing of a potential friend
____ interests and preferred activities of a potential
friend
____ political beliefs of a potential friend

8. Which ONE of the following opinions do you feel BEST
describes the opinions of most American adults on the topic
of abortion? Please SELECT ONLY ONE RESPONSE.

____ Abortion is completely wrong and should be illegal.
____ Abortion should only be legal in cases of immediate
physical danger to the mother’s life.
Abortion should only be legal in cases of immediate physical danger to the mother’s life, incest, and rape.

Abortion should be legal for any reason.

Abortion should be legal for any reason and financially subsidized by the federal government to make it available to all women.

9. Which ONE of the following options do you think BEST describes the percentage of American adults who report that they have ever cheated on their income taxes? Please SELECT ONLY ONE RESPONSE.

- Less than 5%
- 5%-10%
- 10%-25%
- 25%-50%
- 50%-75%
- more than 75%

10. Which ONE of the following options do you think BEST describes the attitude of most college students toward premarital sex? Please SELECT ONLY ONE OPTION.

- Sex on the first date is not wrong and is expected by most college students.
- Casual sex is not immoral, even if you are sleeping with more than one person during a period of time.
- Premarital sex is O.K. if the couple have known each other for a while before sleeping together.
- Premarital sex is only O.K. if it takes place in a committed, monogamous relationship.
- Premarital sex is wrong and should be discouraged.
Appendix D
Recall measure
Please answer as many of the following questions as you can about the details provided in the journal entry, using as close to the exact wording as possible.

1. On what day of the week was the journal entry made?

2. What time did your visitor leave in the afternoon?

3. What was the weather like as you made the journal entry?

4. What type of restaurant did you go to for dinner?

5. When did your visitor arrive for the weekend?

6. What did you write your journal entry in?

7. What was your feeling while you ate dinner at the restaurant?

8. How was the service at the restaurant?

9. Where did you go to see the movie after dinner?

10. What did you talk about after the movie?

11. What time did you have brunch?

12. What was talked about during brunch?

13. What was the date of the journal entry?
14. When had you last seen your visitor before this visit?

15. What did you say to your visitor during dinner about your future outlook?

16. Where did you get a snack on Saturday evening?

17. What was your visitor’s reaction to your friend

18. What building did you show your visitor?

19. What was the weather like during your walk?

20. What did you say was your favorite class?