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Effects of induced dysphoria and elation on content of future expectations

Joseph D. White
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Effects of Induced Dysphoria and Elation on Content of Future Expectations

by

Joseph D. White
B.A., University of Montana

Presented in Partial Fulfillment of the Requirements for the Degree of Master of Arts

UNIVERSITY OF MONTANA 1986

Approved by:

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Chairperson, Board of Examiners
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February 25, 1987
The importance of outlook toward the future is acknowledged by many theories of depression, and there is a large body of research demonstrating that depressed individuals have a negative future outlook. However, no study was found which compared depressives' future outlook with their perception of the present. This study was intended to make such a comparison. A Dysphoric or Elated mood was induced in each of 98 subjects by a procedure involving autobiographical memories. Subjects were then asked to imagine a scene one year in the future, and to make comparisons with the scene used to induce the Elated or Dysphoric mood. Comparisons were made for three Change-Factors (uniqueness, change, and improvement) across four categories (image as a whole, emotions, behaviors, and cognitions). It was predicted that in all categories Elated subjects would rate more uniqueness, change, and improvement than Dysphoric subjects. Analysis of the data was complicated by the fact that 16 of the Dysphoric subjects spontaneously raised their mood to levels comparable to the Elated subjects while imagining the future. In general, the hypotheses that Elated subjects would rate more uniqueness, change, and improvement than Dysphoric subjects received little or no support, with only one comparison attaining statistical significance. Relationships among the data remained essentially unchanged under transformation by image clarity and image intensity, and were not affected by social desirability. It was also predicted that Elated subjects would choose to imagine more distant future times than Dysphoric subjects if given a choice. This prediction was not supported. An unexpected interaction between sex of subjects and total score across all Change-Factors and Categories approached statistical significance. Female subjects appeared to rate future images differently in different mood groups, while male subjects did not. It is proposed that future imagery may play an important role in modifying subjects' mood, and directions for future research are suggested. It is also proposed that the experimental hypotheses did not receive an adequate test due to methodological problems, and that further research is merited.
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CHAPTER ONE
INTRODUCTION

Feelings of sadness, pessimism, hopelessness, and a generally negative outlook toward the future are among the hallmarks of depression. The depressed individual may describe himself or herself as discouraged, down in the dumps, low, blue, and so on or may complain of "not caring anymore". People who are depressed seem unable to experience pleasure (American Psychiatric Association [APA], 1980, p. 210.). Furthermore, they see the future as bleak and foreboding. Beck (1967) found that 78% of a sample of depressed patients endorsed an item indicating a pessimistic view of the future, as compared with 22% of a sample of nondepressed patients. Pessimism also had the highest correlation with overall level of depression of any of the items in the Beck Depression Inventory (Beck, 1967). Other items which showed high correlations with depression included sadness, lack of satisfaction, and suicidal wishes.

The purpose of this study is to compare depressives' expectations of what the future will be like with their perceptions of the present, with the intention of showing that they do not expect that their future will be very much different from their present. First, the importance of future outlook for various theories of depression will be briefly discussed. Next, the empirical evidence regarding depressives' views of the future will be reviewed. Finally,
a study which uses induced moods as analogs of depression and elation to compare imagined futures with current perceptions will be described. (Since dysphoria is a major component of depression, I chose to use subjects in an induced dysphoric mood rather than clinically depressed subjects for reasons of practicality and clarity. See the comments on methodology on p. 25.)

Theoretical Importance of Future Outlook in Depression

Depressives' expectations about the future play an important part in many theories of depression. Since the purpose of this review is to illustrate a possible relationship between depressed individuals' expectations about the future and their current perceptions, and since theoretical formulations of depression abound, a comprehensive review of the theoretical literature on depression will not be attempted. Rather, examples have been chosen because of their current importance in generating research on depression or because of their relevance to the current topic.

Cognitive Theories of Depression

In recent years cognitive theories of depression have led to a great deal of research on how depressed individuals think. Beck's theory of depression and the reformulated learned helplessness theory of depression developed by Seligman and his colleagues are two of the most important
cognitive theories. Each will be discussed briefly, followed by discussion of a recent attempt to integrate current thinking on cognitive theories by using information processing theory.

Beck's Theory of Depression

According to Beck (1967) depression occurs when certain cognitive structures, or schema, are activated by the occurrence of negative events. These schema cause the individual to view himself, the world, and the future in negative ways. Beck writes, "The progressive dominance of these cognitive patterns leads to the other phenomena that are associated with the depressive state" (1967, p. 255). One characteristic of these schema is that they involve making certain logical errors, which Beck labels arbitrary inference, selective abstraction, and overgeneralization.

Of particular interest in this review is the concept of overgeneralization, which Beck defines as "the patients' pattern of drawing a general conclusion about their ability, their performance, or their worth on the basis of a single incident" (1967, pp. 234-235). While Beck's conception of overgeneralization seems to limit its application to present situations (e.g. "I'm a poor father because the children aren't better disciplined," Beck, 1967, p. 235), it is easy to see that a negative view of the future can be interpreted as a sort of overgeneralization about the present (e.g. "Things feel awful now so things will always feel awful,").
Research described later in this review suggests that overgeneralization may be particularly characteristic of depressives' thinking (Carver, Ganellen, & Behar-Mitrani, 1985).

**Reformulated Learned Helplessness Theory**

The reformulated learned helplessness theory of depression (Abramson, Seligman, & Teasdale, 1978) proposes that depression is related to the attributions that people make about the causes of bad events. According to the theory, depressed individuals attribute bad events to stable, internal, and global causes. This pattern of causal attribution leads the individual to anticipate that future outcomes are independent of their responses (Brewin, 1985). Variations of the theory hold that making stable, global, and internal attributions about the causes of bad events can be a causal, symptomatic, or predisposing factor in depression (Brewin, 1985; Peterson & Seligman, 1984).

It is the attribution of bad events to stable causes that is of primary interest in this review. If a bad event is due to some stable cause it is reasonable for the depressed person to conclude that the bad event will reoccur or persist in the future. The future comes to be seen as resembling the present. It is also worth noting that the combination of global and stable attributional styles resembles Beck's concept of overgeneralization, that is the depressed person interprets bad events as indicating that a
host of similar bad events will occur both in the future and in other areas of his or her life.

Information Processing Theory

Ingram (1984) has recently proposed reevaluating various cognitive and behavioral theories of depression in terms of information processing theory. According to his analysis depression occurs when a negative event is appraised in such a way as to activate a particular network of affective and cognitive structures, referred to as a "depression node". Once activated, Ingram suggests that these cognitions and affects are continuously recycled, maintaining the depressive state. The continuous recycling of a particular set of cognitions and affects may lead the depressed person to process his imagined future in the same way the he processes the present. Indeed, it may be necessary for this type of processing to continue if depression is to exist. If imagined future events could be processed in a more positive, creative manner, the depression node might be broken. Different affects and cognitions might be activated and depression might cease. Ingram's theory seems to predict that depressed individuals will see the future as resembling the present by virtue of the existence of the depression node.

Behavioral and Motivational Theories of Depression

Both Lazarus (1968) and Lewinsohn (1974) view depression as resulting from a loss of or lack of response-
contingent positive reinforcement, which results in dysphoria. Cognitive symptoms are viewed as secondary to the dysphoric mood. Since these theories are couched in behavioral terms and give little heed to cognitions, the role of expectations might appear to be moot here. However, Lazarus (1972) and Lewinsohn (1974) acknowledge that anticipation of continuing lack of reinforcement seems to play a role in maintaining depression, if only through decreasing motivation to seek out more reinforcing situations or more social support. Indeed, Layne and his colleagues (Layne, 1980; Layne, Lefton, Walters, & Merry, 1983) view depression as being primarily a motivational deficit for positive outcomes. According to Layne, depressed individuals underestimate both their ability to gain rewards and the value of the rewards available to them. They also overestimate the intensity and frequency of punishers. Layne stresses the role of future expectations in that he looks at the way depressed individuals evaluate the potential outcomes of their behaviors. Depressives evaluate the future as being aversive and unrewarding, and since depression is itself an aversive and unrewarding state we see that depressives' evaluations of the future resemble their evaluations of the present.

Another behavioral theory which also stresses the importance of cognitive phenomena is Rehm's (1977) self-control theory. Self-control is described as "those
processes by which an individual alters the probability of a response in the relative absence of external supports" (p. 790). Self-control behaviors involve a feedback loop consisting of self-monitoring, self-evaluation, and self-reinforcement. Rehm lists six deficits in self-control behavior which are assumed to account for depression. Two of these, selective monitoring of negative events and selective monitoring of immediate as opposed to delayed consequences of behavior, are of interest here. Rehm states that negative expectations of the future result from selective monitoring of immediate negative consequences of behavior. Depressed individuals focus on negative events and immediate negative consequences to the point where they become unable to perceive a positive present or to imagine an improved, positive future. The future becomes an extension of the negatively perceived present.

**Summary**

Finally, as a closing comment on theoretical issues, we note that even a major psychoanalytic writer (Bibring, 1953) makes reference to the importance of future outlook in depression. He writes that the basic mechanism in depression is "the ego's shocking awareness of its helplessness in regard to aspiration" (p. 39). The depressed individual feels powerless to obtain a desired state of affairs, and this sense of powerlessness exists both in the present and in the future.
From this brief, illustrative review we see that negative expectations of the future play a major and often central role in several important theories of depression. We also note that there is a similarity or connection between the way depressed individuals process the present and the future. The word process may refer to a variety of activities, including monitoring of the self and negative events, making cognitive inferences about the causes of events or the extent to which the individual is responsible for them, experiencing changes in motivation related to perceived probability of positive and negative outcomes, and employing fixed cognitive-affective information processing structures. I think that the depressed individual's negative expectations are characterized by a lack of creative synthesis, which is in some sense to say a lack of newness. Rather than imagining a new, improved future the depressed person sees the future as an extension of the tired, old, worn-out past. Other writers have made similar observations. For example Beck (1967) describes a depressed person this way:

His anticipations of the future are generally an extension of what he views as his present state. If he regards himself as currently deprived, immobilized, or rejected he visualizes a future in which he is continually deprived, immobilized, or rejected. He seems unable to view his current state as having any
time limits or to consider the possibility of any improvement (pp. 259-260).

Empirical studies have addressed the way depressed individuals view the future using a number of strategies. These include analyzing depressives' cognitions, analyzing depressives' verbalizations and overt behavior, analyzing the relationship of hope and hopelessness to depression, and analyzing the amount of time to which depressives imagine the future to extend. These empirical studies will be reviewed below. However, no study was found which reported data on direct comparison between the way depressed individuals imagine the future and the way they perceive the present.\(^1\) It must be noted that the study to be described in following sections does not focus directly on depression either, but rather on dysphoria, which is a major and defining component of depression (APA, 1980; Lewinsohn & Lee, 1981).

The Empirical Literature on Depression and Future Outlook

**Cognitive Theory-Based Research**

Cognitive theories of depression have generated a great

\(^1\)For the purposes of this review, perception of the present refers to awareness of ongoing and recently completed events and behaviors. Similarly, imagining the future refers to awareness of potential or conceivable events and behaviors. It can be argued that percepts and images are in some sense indistinguishable (Sheikh, 1977). For our purposes the important distinction is between actual events (i.e. the present) and potential or conceivable events (i.e. the future).
deal of research in recent years (Brewin, 1985; Coyne & Gotlib, 1983; Layne, 1983; Peterson & Seligman, 1984). This review will focus on two aspects of this research. First, a number of self-report instruments for assessing depressives' cognitions have been developed based on cognitive theories. These include the Cognitive Bias Questionnaire, the Attributional Style Questionnaire, and the Cognitions Questionnaire, all reviewed below. Although none of these instruments unambiguously compare the way depressed individuals imagine the future with the way they perceive the present, they do provide some suggestive findings.

Second, there is a body of more general research arising from the cognitive literature on depression which also provides some hints about how depressives view the future, and these results will be summarized.

The Cognitive Bias Questionnaire

The Cognitive Bias Questionnaire (CBQ; Hammen & Krantz, 1976) was developed to look for the type of cognitive distortions that Beck's (1967) theory predicts (i.e. arbitrary inference, selective abstraction, and overgeneralization). It consists of six brief stories which present a character in a potentially problematic situation, each followed by several questions pertaining to the character's thoughts and expectations. Each question has four possible responses, which the authors label depressed-distorted, depressed-nondistorted, nondepressed-distorted,
A typical story describes a young woman who lives in a dormitory and is all alone with no date on a Friday night. She overhears several other residents talking about going out for pizza, though she is not invited. Individuals taking the CBQ are asked to imagine themselves in her place as they answer questions about her thoughts. One item for the story just described begins "Being alone on a Friday night ...". The depressed-distorted response to this item is "upsets me and makes me start to imagine endless days and nights alone" (Hammen & Krantz, 1976, p. 580). Other responses are: "Doesn't bother me because I figure I'll have a date next weekend for sure" (nondepressed-distorted); "Doesn't bother me because one Friday night alone isn't that important; probably everyone has spent nights alone" (nondepressed-nondistorted); and "Upsets me and makes me feel lonely" (depressed-nondistorted). Note that an individual who chooses the depressed-distorted response indicates a belief that the future will continue to look just like the present.

A number of studies have found that depressed subjects endorse more depressed-distorted items on the CBQ (or closely related derivatives) than control subjects (Blaney, Behar, & Head, 1980; Haley, Fine, Marriage, Moretti, & Freeman, 1985; Hammen & Krantz, 1976; Krantz & Hammen, 1979; Norman, Miller, & Klee, 1983). Not all of the items in the CBQ refer to future events, and none of these studies report
data which allow the contributions of future expectations to be extracted. Nevertheless, these results suggest that viewing the future as a relatively unchanging continuation of the present may play a part in cognitions which are common in depression.

**The Attributional Style Questionnaire**

The Attributional Style Questionnaire (ASQ; Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982) was developed to assess causal attributions and attributional style in the framework of the reformulated learned helplessness theory of depression (Abramson et al., 1978). Subjects are directed to vividly imagine themselves in 12 hypothetical situations, half of which have a positive outcome and half of which have a negative outcome. They are then asked to write down a major cause of the outcome and to rate the cause along the dimensions of internality, stability, and globality. (Subjects also rate the personal importance of such an event if it should happen to them.) Stability is rated by asking the subject to indicate on a 7-point scale whether, in the future, the cause will be "never again present" or "always present" (Peterson & Seligman, 1984, p. 352), with the latter response indicating a stable attributional style. Note that the stable response implies that the future will continue to resemble the present. Studies have found significant associations between attributions of causal stability as measured by the ASQ (or
a childrens' variant) and depression in college populations (Peterson, Bettes, & Seligman, 1982; Seligman, Abramson, Semmel, & von Baeyer, 1979), children (Seligman, Peterson, Kaslow, Tanenbaum, Alloy, & Abramson, 1984), and depressed patients (Eaves & Rush, 1984; Raps, Peterson, Jonas, & Seligman, 1982). Even though some studies have failed to find significant correlations between stable causal attributions and depression (e.g. Navarra, 1981; Persons & Rao, 1981), and even though the relationship of causal attribution to depression remains an area of controversy (Brewin, 1985; Coyne & Gotlib, 1983; Layne, 1983; Peterson & Seligman, 1984), I believe that depressives' attributions are stable at least to the extent that they anticipate that the future will continue to resemble the present.

In this review it is proposed that it is not simply the depressed individual's attributions of cause which are stable, but rather that his whole conception of the future is an unchanging extension of the present. The ASQ fails to adequately assess the depressed individual's conception of the future in that it looks at attributions for specific hypothetical cases which may not be relevant to the individual. Situational factors may affect attributions about the causes of specific events while leaving the overall outlook toward the future unchanged.

The Cognitions Questionnaire
The Cognitons Questionnaire (CQ; Fennell & Campbell, 1984) was developed to assess the overall degree of cognitive distortion and emotional impact in response to positive, neutral, and negative events and to look at certain specific cognitive distortions. These specific cognitive distortions are the attribution of causality, generalization across time, generalization across events, and perceived uncontrollability. Fennell and Campbell point out that these attributions are made for the consequences rather than the causes of events. Subjects are asked to imagine themselves in eight hypothetical situations, and then to complete five multiple choice questions for each scenario. The questions address the emotional impact and the previously listed cognitive distortions. Two of the scenarios are of positive events, two are of neutral events, and four are of negative events. Fennell and Campbell found that overall CQ score correlated strongly with depression, and that depressed subjects showed significant differences from nondepressed subjects on all four of the cognitive distortion measures. Of particular interest here is that depressed subjects tended to overgeneralize across time. That is, especially for negative events, they expected negative consequences to continue in a similar or identical fashion in the future.

Other Cognitive Research

Two other aspects of cognitive theory-based research
are of interest. The first area is research on depression, control, and self-blame, and the second area is further research on depression and overgeneralization.

**Controllability and Self-Blame.** Janoff-Bulman (1979) has argued that attributional theories of depression such as the reformulated learned helplessness theory (Abramson et al., 1978) overlook an important dimension of causal attribution; namely controllability. She notes that self-blame is a major characteristic of depression and she uses the dimension of controllability to distinguish between two types of self-blame. Behavioral self-blame involves self-criticism of something that is under the individual's control; that is their own behavior. Characterological self-blame involves self-criticism of something not generally seen to be under the individual's control; that is their character or the type of person they are. Research has shown that depressed subjects express more characterological self-blame than nondepressed subjects (Janoff-Bulman, 1979; Peterson, Schwartz, & Seligman, 1981), and that behavioral self-blame is generally incompatible with depression (Peterson et al., 1981). This suggests that depressed individuals see themselves as both responsible for their own unhappiness and unable to control the causes of it. (There is a body of research, in an area referred to as the illusion of control, that suggests that nondepressed individuals tend to overestimate their control over chance...
laboratory tasks. See, for example, Golin, Terrel, &
Johnson, 1979; Golin, Terrel, Weitz, & Drost, 1979; Abramson
& Alloy, 1984. Some authors, e.g. Alloy & Abramson, 1979
and Layne, 1983, suggest that this implies that nondepressed
individuals have unrealistically optimistic views of the
future.) If an individual perceives some negative
characteristic of himself or herself as responsible for a
situation, and if that characteristic is not under his or
her control, then the situation is not subject to his or her
modification. If he or she cannot act to modify the
situation, then the possibility exists that it will not be
modified. The present situation may come to be seen as
extending indefinitely into the future.

Overgeneralization. In an investigation of depression
and self-punitive behavior, Carver and Ganellen (1983)
developed a self-report measure which assessed three
different factors: high standards, self-criticism, and
overgeneralization. Only overgeneralization was found to
relate strongly to depression. More recently, the same
measure of overgeneralization has been found to be a more
robust predictor of Beck Depression Inventory score (Beck,
1967) than the CBQ, the ASQ, or a measure of
characterological self-balme (Carver, Ganellen, & Behar-
Mitrani, 1985). While the Carver et al. (1985) study can be
criticized on the grounds that it used only college
undergraduates with relatively low levels of depression as
subjects, it still suggests that overgeneralization plays a significant role in depressives' cognitions. Similarly, Fennell and Campbell (1984) report that overgeneralization across situations had the strongest relationship with depression of any of the four types of cognitive distortion measured by the CQ. As previously noted, overgeneralization is an important concept in Beck's (1967) theory of depression and, under the label of stable, global attributions, in the reformulated learned helplessness theory of depression.

Summary

We have seen that several instruments used to assess attributional style or distorted cognitions in depressed individuals contain references to hypothetical future events, and that what is coded as a stable attribution or a distorted cognition frequently suggests that the depressed individual sees the future as being very similar to the present. These types of attributions and distortions are often strongly correlated with depression. There is also research indicating that depressed individuals may view the future as unchanging because they perceive it as caused by flaws in their character over which they have no control and therefore cannot change, and because they overgeneralize about the causes and consequences of negative events. In fact, the depressed person's view of the future may be considered another form of overgeneralization, that is
generalizing that the future will be just like the present.

No study reviewed, however, made direct, unambiguous comparisons of the way depressed persons imagine their own futures and the way they see their own lives in the present. This conclusion is reached first because subjects are often asked to imagine hypothetical future scenarios which may have little relevance to their own lives, and second because direct comparisons of present and future simply have not been asked for in the research to date.

**Other Research on Depression and Future Outlook**

Other research on the future outlook of depressed individuals comes from three areas: negative future outlook as a distinguishing characteristic of depression, prediction of suicidal behavior, and constricted future time sense. Each of these areas will be discussed below. Although this research shows that depressed individuals have negative and constricted views of the future, it once again fails to make direct comparisons with their present outlook on life.

**Negative Future Outlook**

As noted earlier, Beck (1967) reported that 78% of depressed subjects endorsed an item on the Beck Depression Inventory indicating a negative view of the future, as compared to only 22% of nondepressed control subjects. Other researchers have looked at future expectations of success, observed verbal interactions of depressed couples, analyzed speech patterns, or attempted to relate hope (or
lack of hope) to depression.

Fibel and Hale (1978) developed the Generalized Expectancy for Success Scale (GESS) to assess subjects' overall expectations for future success. The GESS consists of 30 statements about the future, each beginning with the phrase "In the future I expect I will ...". Examples of outcomes include "be a good parent" or "have problems working with others" (Fibel & Hale, 1978, p. 927). Subjects are asked to rate the probability that each statement will be true about them in the future on a 5-point Likert scale. Test items were selected from a pool which sampled a variety of situational domains, including public life, private life, family life, interpersonal relationships, and work.

Research using the GESS has found that low expectancies for future success are significantly correlated with various measures of depression (Fibel & Hale, 1978) and that they are not typical of nondepressed psychiatric populations (Layne, Lefton, Walters, & Merry, 1983). While the GESS does address expectations about the future directly, it does not make specific comparisons with perceptions of the present. Given depressives' negative view of the world (Beck, 1967), one can postulate that such a comparison would find that depressed individuals' low expectations of future success are comparable to their perceptions of the present.

Linden, Hautzinger, and Hoffman (1983) observed interactions of distressed couples. They found that
negative expectation of the future was one of several interactional styles which differentiated couples in which one partner was suffering from a major depression from nondepressed couples. Similarly, Karoly and Ruehlman (1983) conducted a semantic differential analysis that compared the future outlook of depressed and nondepressed college undergraduates. They found that depressed students rated the future as less active (e.g. slow vs. fast, passive vs. active), less potent (e.g. weak vs. strong, ineffective vs. effective), and less evaluatively positive (e.g. unpleasant vs. pleasant, sad vs. happy) than nondepressed students.

Gottschalk (1974) analyzed speech content of various psychiatric and comparison groups, including crisis clinic patients and terminally ill cancer patients. He developed a scale to measure the amount of hope in their verbalizations and found a significant negative correlation between the level of hope and the level of depression in his subjects.

Erickson, Post, and Paige (1975) assessed hope in psychiatric populations by asking subjects to rate the probability and importance of achieving various goals. This line of research follows definitions of hope given by Stotland (1969) and Melges and Bowlby (1969), which suggest that hope is the multiplicative product of goal importance and perceived probability of goal attainment. Erickson et al. (1975) found that depression has a significant negative correlation with perceived probability of goal attainment.
The research on negative future outlook as a characteristic of depression indicates that depressed individuals view the future as a negative state of existence in which there is a low likelihood of attaining desired goals. Once again, however, no direct comparisons of depressives' views of the present and future were made.

Prediction of Suicidal Behavior

Negative future outlook and lack of hope have also been used to predict suicidal behavior. Beck, Weissman, Lester, and Trexler (1974) developed the Beck Hopelessness Scale (BHS). This 20 true-false item inventory, which consists of statements like "I don't expect to get what I really want" and "In the future I expect to succeed in what concerns me the most" (Beck et al., 1974, p. 862), taps attitudes about the future. Research using the BHS has found that depressed college students (Prociuk, Breen, & Lussier, 1976) and psychiatric patients (Beck et al., 1974) have negative expectations of the future, and that these expectations improve as the patient recovers or succeeds in various tasks (Beck et al., 1974). More significantly, high BHS scores have been found to be good predictors of suicidal behavior. An early study found that hopelessness as measured by the BHS correlated more strongly with suicidal intent than did overall level of depression (Minkoff, Bergman, Beck, & Beck, 1973). Although there has been some recent controversy about high BHS scores being confounded with socially
desirable responding (Linehan & Neilson, 1981, 1983; Nevid, 1983; Petrie & Chamberlin, 1983; Strosahl, Linehan, & Chiles, 1984), the BHS remains a good predictor of suicidal behavior. In a recently completed 10 year study of 207 patients hospitalized for suicidal ideation, high BHS scores correctly identified 91% of eventual suicides (Beck, Steer, Kovacs, & Garrison, 1985).

An earlier technique for assessing suicide potential has a more direct bearing on the way depressed people imagine the future. This technique looked at future time perspective and imagined degree of future involvement of depressed patients (Yufit, Benzies, Fonte, & Fawcett, 1970). Depressed and comparison groups were asked to pick a year in the future and to complete open-ended questions about what they would be doing at that time. Responses were scored for extent of time projection, amount of change imagined, degree of detail, and consistency, quantity, and quality of responsiveness. It was found that depressed subjects had significantly lower mean total scores, projected significantly fewer years into the future, and elaborated less on future fantasies than nondepressed comparison subjects. Although Yufit et al. did ask subjects to make a direct comparison of present and future (i.e. amount of change imagined) they did not report data for results on individual items.

Negative future outlook and lack of hope clearly...
represent an important component of depression and appear to be good indicators of suicidal intent. Although one study came close, no published study reported comparison of the way depressed individuals imagine the future with their perceptions of the present.

**Future Time Projection**

Yufit et al. (1970) found that depressed subjects tended to have more restricted views of the future in that they projected (imagined) significantly fewer years into the future than nondepressed subjects. Similarly, Melges and Fougerousse (1966) found that depressed subjects endorsed items indicating changes in time sense and difficulty distinguishing past, present, and future. Two other findings in the area of future time projection are indirectly related to the way depressed individuals imagine the future. Wohlford (1966) found that undergraduates asked to write about a pleasant future experience tended to have more extended future time perspectives than undergraduates asked to write about an unpleasant future experience or about their own death. Thinking about unpleasant experiences or death may create unhappy moods which are components of or mimic depressive symptoms. Also, Teahan (1958) found that adolescents who were high academic achievers were both more optimistic and had a more extended future time perspective than low academic achievers of comparable intellectual level. It appears that current
success and optimism (or the lack thereof) are related to future time perspective.

Finally, it is interesting to note that Lazarus (1968, 1971, 1972) has reported on a method of treating depression which he refers to as "time projection with positive reinforcement". In this procedure depressed patients are taught imagery techniques or are hypnotized. They are then instructed to vividly imagine themselves experiencing positive events from the past such as pleasurable activities, spending time with other people, or any other behavior which the patient formerly associated with pleasant feelings. Positive imagery is gradually extended into the future until the depressive incident is left far behind. Lazarus (1968) reports dramatic results for single session applications of this technique with patients who were able to experience vivid images and who were suffering from acute depressive episodes. While it must be noted that this is a single author reporting on a series of uncontrolled case studies, Lazarus' results suggest that positive future images may, at least in some cases, be incompatible with depression.

Summary

We have seen that negative expectations of the future are a characteristic of depression, and that they are seriously implicated in suicidal behavior. We have also seen that depressed people imagine the future less clearly
and as occupying a shorter time span than nondepressed individuals. There is even some evidence, albeit scanty, that depression and expectations of a positive, pleasant future are incompatible. Yet no study reports a direct comparison of depressed individuals' experience of the present with the way they imagine the future. I think that depressed people imagine the future as an essentially unchanging extension of the present, and the present study seeks to investigate that possibility.

The Present Study

The present study was designed to ask subjects to make a direct comparison between the way they view their present lives and the way they imagine the future. This was done by directing subjects in induced dysphoric and elated moods to imagine a future scene and compare this scene to their perception of the present. A few comments on the methodology are appropriate.

Use of Induced Moods

The use of induced dysphoria as an analog of depression in laboratory studies has become a common and accepted practice (Goodwin & Williams, 1982). The present study used subjects in an induced dysphoric mood rather than clinically depressed subjects for reasons of practicality and clarity. Obtaining a large sample of clinically depressed subjects for research purposes can be a time-consuming and difficult task, especially when treatment is not offered. Moreover,
depression is a heterogeneous disorder with a number of components (APA, 1980; Lewinsohn & Lee, 1981). Since a major purpose of this study was to demonstrate the usefulness of the proposed methodology in investigating depression, it was chosen to work with a single, important characteristic of depression in order to obtain a more homogeneous sample of behavior and a clearer test of the experimental hypotheses.

The most commonly used procedure for mood induction was developed by Velten (1968). Subjects are directed to read and try to experience a set of 50 to 60 self-referent statements which are ordered so as to progressively produce a dysphoric, elated, or neutral mood. This procedure has been shown to produce changes in both self-reported mood and in specific observable behaviors such as counting speed, writing speed, silent pauses in spontaneous speech, and persistence in attempts to complete insoluble line tracing problems (Goodwin & Williams, 1982). However, the method has been criticized as being unduly influenced by demand characteristics (Buchwald, Strack, & Coyne, 1981; Polivy & Doyle, 1980).

Another mood induction procedure involves the use of autobiographical memories. For example, Brewer, Doughtie, and Lubin (1980) asked subjects to recall three progressively more distressing autobiographical events, and compared the resulting mood changes to those induced by
reading self-referrent statements. They found that the autobiographical procedure produced greater mood changes, as measured by various depression inventories and adjective checklists, than Velten's procedure and they maintain that it is a more powerful technique. Other variations of the autobiographical technique involve the use of hypnosis (e.g. Hart & Means, in press; Baumann, Cialdini, & Kenrick, 1981) or of quasi-hypnotic procedures (e.g. Wilson, Means, & Guthrie, 1982) to enhance recall and the resulting induced mood. The latter technique was chosen for this study because it is suitable for group administration, does not require screening for hypnotic suggestibility, and because it is compatible with the techniques chosen to help subjects imagine the future. (Some of the methodology of the present study was adapted from Hart & Means, in press. Hart and Means hypnotized subjects, and used either imagery-based or cognitive-based manipulations to induce a dysphoric mood. They then compared the effectiveness of imagery-based and cognitive-based treatments in alleviating the dysphoric mood. It was found that both types of treatment were effective for both types of mood induction, but that an imagery-based treatment was more effective for treating imagery-induced dysphoric moods than was a cognitive-based treatment.)

For the purposes of this study, dysphoria refers to an unpleasant feeling state. Although at least one source
(APA, 1980, p. 363) includes the term irritability in its description of dysphoria, I prefer to restrict the use of dysphoria to feelings of sadness or unhappiness. Lewinsohn and Lee (1981, p. 139) state that patients often use words like "down", "blue", "depressed", "hopeless", "helpless", "despondent", and "pessimistic" to communicate dysphoria. I consider dysphoria to be the major component of depression, although dysphoria in the absence of other symptoms does not necessarily imply pathology (APA, 1980, pp. 213-214).

Similarly, the term elation refers to a mood that is more cheerful than normal, and does not imply the presence of pathology.

**Comparison of Present and Future**

A 15 item self-report questionnaire was developed to compare subjects' imagined futures to the scene which they imagined to change their mood (see Chapter Two and Appendix A). It was originally intended to ask for a direct comparison with subjects' perceptions of the present, but pilot data revealed that subjects found these comparisons too confusing to make easily, and that reference to the present made it too difficult for them to maintain the induced mood. It was therefore decided to compare the future image to the mood induction image, under the critical assumption that the mood induction procedure would produce memories which would allow subjects to make comparisons which were comparable to the ones they would make if they
were experiencing the imagined past scene in the present.

Three different comparisons were made. The first, uniqueness of the imagined scene, assessed the amount of creativity or newness with which the individual imagines the future. In a sense, it compared the future with both the present and the past. The second comparison, amount of change from the present, asked the subject to make a direct comparison of the present and the future. The third comparison asked the subject to rate the degree of imagined subjective improvement or worsening in the future situation as compared to the present. These comparisons were referred to as Change-Factors. It was not clear prior to the study which of the three comparisons might show the most difference, but it was predicted that subjects in the elated mood would imagine future scenes which they would rate as more unique, and as showing more change and improvement as compared to the present than would subjects in the dysphoric mood.

Each of the three comparisons was made in four different categories: the image as a whole, imagined feelings, imagined behaviors, and imagined thoughts. The relationship between cognition, affect, and behavior, and the relationship between image, cognition, and affect are controversial (e.g. Ahsen, 1982; Ellis, 1985; Hart & Means, in press; Kleinginna & Kleinginna, 1985; Lazarus, 1984; Zajonc, 1984). Since it was not the purpose of this study
to attempt to resolve these controversies, no prediction about which of the categories would show the largest difference between elated and dysphoric groups was made. However, the affect-cognition-behavior triad does provide a convenient way to break down the imagined future scene and the data may eventually prove useful in examining the relationship between these three constructs.

Items to assess image intensity and image clarity were also included in the questionnaire. It was predicted that subjects in the elated group would imagine events occurring farther into the future than the dysphoric group. Although there is some evidence that dysphoric subjects may have images which are not as clear as those of elated subjects (e.g. Yufit et al., 1970), it was thought that the evidence was insufficient to make a prediction about responses to the image clarity item. No differences in image intensity were predicted between the two groups, but it was thought that image intensity might operate as a modifying factor on the other scores. A set of statistical comparisons in which questionnaire scores were transformed by multiplication by the intensity score was planned.

Social Desirability

Although socially desirable responding was not expected to play a significant or critical role in this study, a measure of social desirability was included to examine the role of this variable for two reasons. First, if the
results of this study prove significant, future research using clinically depressed populations is planned. Social desirability was assessed as a preliminary step in the validation of this questionnaire. Second, as previously mentioned, there is some controversy as to whether the Beck Hopelessness Scale is confounded with social desirability. While much of this controversy seems to center around which measure of social desirability is used (Strosahl, Linehan, & Chiles, 1984), it may be possible to clarify this issue by making comparisons between the questionnaire being developed in this study, the Beck Hopelessness Scale, and socially desirable responding.

Hypotheses

The major hypotheses of the present study can be summarized as follows:

1. Subjects in the dysphoric group were expected to rate their imagined future scenes as less unique than subjects in the elated group.

2. Subjects in the dysphoric group were expected to rate their imagined future scenes as showing less change as compared to the present than were subjects in the elated group.

3. Subjects in the dysphoric group were expected to rate their imagined future scenes as showing essentially no improvement or worsening, while subjects in the elated group were expected to rate their imagined future scenes as
significantly improved.

4. Hypotheses 1 through 3 were expected to be true for the imagined scene as a whole, and for imagined thoughts, feelings, and behaviors taken separately.

5. Subjects in the dysphoric group were expected to rate their imagined future scenes as showing less change from the present on a combined measure of all of the change scores than will subjects in the elated group.

6. Subjects in the dysphoric group were expected to imagine future scenes that involve less time projection than will subjects in the elated group.

In addition, it was expected that social desirability would not be significantly related to any of the measures involving the imagined future scene. A final, minor hypothesis was that image intensity might act in a multiplicative manner to increase the patterns described in hypotheses 1 through 6.
Subjects

One hundred college undergraduates (55 females, 45 males) recruited from an Introductory Psychology course served as subjects for this experiment. Participation partially fulfilled a course requirement. Subjects ranged in age from 18 to 57 years, the mean age being 21.4 years. Treatments were conducted in groups of no larger than 12 subjects each. Subjects were assigned to treatment groups on the basis of sign-up, and treatment groups were randomly assigned to receive either the Elated or the Dysphoric mood induction, subject to an attempt to balance the number of male and female subjects across treatments. (Due to a small subject pool and time constraints it was not possible to achieve an exact balance for sex of subjects across treatments.) Data from two subjects were discarded prior to analysis. One female subject in the Elated group failed to properly follow directions, and one male subject in the Dysphoric group indicated that he had been unable to respond to the Dysphoric mood induction. This resulted in final totals of 25 females and 24 males receiving the Dysphoric mood induction, and 29 females and 20 males receiving the Elated mood induction.

Materials

Each subject was given an Experimental Booklet (EB)
containing directions, spaces for recording descriptions of imagery, and copies of the Crowne-Marlowe Social Desirability Scale (SDS; Crowne & Marlowe, 1964), the Future Change Questionnaire (FCQ), and the Mood Assessment Scale. (See Appendix A.) Directions were presented by a male experimenter, except for the relaxation instructions, mood inductions, and imagery instructions, which were tape-recorded by a female experimenter who was experienced in hypnotic induction. Appendix A contains all of the materials in the EB plus the instructions to the experimenter. The booklets handed out to the subjects were identical to the one in Appendix A except that the instructions to the experimenter were deleted.

**Crowne-Marlowe Social Desirability Scale.** The SDS is a 33 true-false item inventory used to assess the tendency of subjects to give socially desirable responses rather than honest self-evaluations. Although Strosahl, Linehan, & Chiles (1984) have criticized the SDS as measuring something other than social desirability, recent research by Paulhus (1984) has demonstrated that the SDS loads on two factors which are important in socially desirable responding. He labels these factors impression management and self-deception. The SDS has been widely used in previous research and was chosen for that reason. (See Appendix E.)

**Future Change Questionnaire.** The FCQ is a 14 item questionnaire designed to compare the way subjects imagine
the future with the scene imagined in the mood induction, and to assess image quality and image intensity. The first 12 items, numbered 1 through 12, are divided into four Categories: the image as a whole, imagined emotions, imagined behaviors, and imagined cognitions. Each of these Categories is defined briefly for the subject at the appropriate point. Under each Category, three Change-Factors are assessed: uniqueness of the imagined scene, amount of change from the mood induction scene, and improvement/worsening compared to the mood induction scene. The last two items, numbered 13 and 14, assess image clarity and image intensity. Responses are recorded by placing a check mark at the appropriate point on unmarked scales which are 125 mm long. The endpoints of each scale are anchored by suitable descriptors. Responses are coded by location of check mark, measured in millimeters from the left end of the scale for items 2, 3, 4, 7, 8, 9, 11, 13, and 14, and from the right end of the scale for items 1, 5, 6, 10, and 12. (See Appendix C.)

Relaxation Instructions. A short relaxation induction combining progressive muscle relaxation and relaxing imagery was presented to the subjects prior to the mood induction and imagery portion of the experiment. (See Appendix D.)

Mood Inductions. Dysphoric and Elated mood inductions were nonhypnotic variants of the imaginal mood induction
procedure used by Hart and Means (in press). These procedures included components of visual imagery, auditory imagery, and physiological responses.

Subjects were asked to visualize and relive scenes from their past in which they felt either happy or sad. Goodwin and Williams (1982) report that this type of mood induction is more powerful than reading or reciting self-referent mood statements. Hart and Means (in press) found that imagery is also a powerful tool for inducing moods. (See Appendixes E and F.)

The effectiveness of these mood inductions was assessed in two pilot studies. (Although the pilot studies used slightly different methodologies, the mood inductions were essentially identical and data from both studies were combined to obtain a larger sample size.) Following either the Elated or the Dysphoric mood induction, subjects were asked to complete the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971). Scores were obtained for the POMS factors of Depression/Dejection and Vigor/Activity, which are reported to assess moods comparable to the desired Dysphoric and Elated mood states. The Elated mood induction produced a mean Vigor/Activity score of 21.05 and a mean Depression/Dejection score of 4.70 using combined data from both pilot studies. The Dysphoric mood induction produced a mean Vigor/Activity score of 2.55 and a mean Depression/Dejection score of 35.27, again using combined
Separate $t$-tests comparing the POMS scores for the Elated and Dysphoric groups indicated that the mood inductions did produce groups which differed significantly on both Vigor/Activity ($t(29) = 2.66, p < .05$) and Depression/Dejection ($t(29) = 3.82, p < .01$). Furthermore, the mean Depression/Dejection score of 35.27 is comparable to the Depression/Dejection score of 30.2 which McNair et al. (1971) report obtaining from a group of individuals diagnosed as undergoing neurotic-depressive reactions (p. 15).

**Imagery Instructions.** In order to facilitate and intensify future images generated by the subjects, a set of taped imagery instructions using components of visual imagery, tactile imagery, auditory imagery, and kinesthetic imagery was developed. (See Appendix G.)

**Mood Assessment Scale.** A 201 mm scale, marked at the endpoints with vertical lines and at the center with the character "0", was used to check on the effectiveness of the mood inductions. The endpoints and center of the scale were anchored with the descriptors "the most sadness you can imagine", "no sadness or happiness", and "the most happiness you can imagine" from left to right, respectively. Responses were recorded by placing a check mark at the appropriate location on the scale. Responses were coded by measuring the distance of the check mark, in millimeters, from the left endpoint. (See Appendix H.)
The usefulness of this scale was evaluated during the previously mentioned pilot studies. Mood ratings were shown to correlate at an acceptably high level with the Depression/Dejection score ($r = .86$) and with the Vigor/Activity score ($r = .84$) of the POMS.

**Procedure**

1. Upon arrival, and before entering the room, subjects were individually given a brief screening for psychological problems (Appendix I). Subjects reporting psychological problems were informed that they could leave the experiment with credit. Subjects were seated and the Experimental Booklet (EB) was distributed. Verbal instructions to the subjects were presented by a male experimenter, with the exception of the relaxation instructions, mood inductions, and imagery instructions, which were tape-recorded. As a precaution, two experienced graduate students from a Clinical Psychology program were present to deal with any serious negative reactions to the mood inductions. (No such reactions occurred.) A simplified schematic diagram of the basic experimental design is presented in Figure 1.

2. Subjects were asked to record their age, sex, and year in college on the cover of the EB. The next page of the EB included an explanation of the purpose of the experiment and the possible risks and benefits involved in the mood induction procedures. Confidentiality of imagery
Figure 1. Simplified Schematic Diagram of the Experimental Design.
descriptions was stressed. Subjects were then instructed to complete the Social Desirability Scale (SDS).

3. The tape-recorded relaxation instructions (Appendix D) were presented at this time, followed by the tape-recorded elated or dysphoric mood induction (Appendixes E and F).

4. Following the tape-recorded mood induction, subjects were asked to assess their mood and to write a brief description of the scene that they had imagined to change their mood. Space for recording the imagined scene was provided in the EB. As a measure of time projection, subjects were also asked to choose a specific time in the future which they would like to imagine, and to record this time in the EB.

5. Next, the tape-recorded imagery instructions (Appendix G) were presented to the subjects. The subjects were asked to imagine a scene one year in the future. They were then directed to briefly describe the scene and to complete the Future Change Questionnaire (FCQ).

6. Subjects in the Dysphoric group were given a tape-recorded mood induction to elevate their mood at this time. Subjects in the both groups were then given the opportunity to visualize a calm, peaceful scene. This was not an integral part of the experiment, but rather was done to counter the effects of the mood induction procedures.

7. All subjects were asked a series of questions aimed
at obtaining further information on: 1) The effectiveness of the relaxation induction; 2) The effects of the mood inductions; and 3) The effectiveness of the imagery instructions. Answers were recorded in the EB.

8. Subjects' current mood was assessed. Subjects who reported that their mood was not at least as positive as it had been at the beginning of the experiment were offered an opportunity to discuss their experience with the experimenter or one of the supervising graduate students. All subjects were then told that they could receive a brief summary of the results of the experiment if they would leave their name and address on a separate sign-up sheet.
CHAPTER THREE
RESULTS

Assessment of Mood

Subjects' mood was assessed at two points during the study: immediately following the mood induction and again following the imagined future scene. The initial mood assessment indicated that the mood inductions did effectively produce different mood states in the Elated (El) and Dysphoric (Dys) groups ($M_{EL} = 129.9, SD_{El} = 19.2; M_{Dys} = 49.33; SD_{Dys} = 18.0$). Separate $t$-tests indicated that male and female subjects did not differ in their reported responses to the Elated and Dysphoric mood inductions (both $t$'s less than 0.15). However, the second mood assessment revealed that 33% (16 of 49; 10 females, 6 males) of the subjects in the Dysphoric group not only failed to hold the dysphoric mood while imagining the future, but reported mood elevation to levels comparable to the Elated group (see Table 1). This is a highly significant change in mood ($t(31) = 5.00, p < 0.001$), and hereafter these subjects will be considered as a separate mood group (symbolized by Dys-El). Comparison of the subjects in the Dys-El group to the remaining subjects in the Dysphoric group indicated that the two groups did not differ significantly in their response to the Dysphoric mood induction ($t(48) = .26, ns$). Small, nonsignificant increases in mood were noted for both the Elated and the Dysphoric groups (see Table 1).
<table>
<thead>
<tr>
<th>Mood Group</th>
<th>First Assessment</th>
<th>Second Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Elated</td>
<td>129.88</td>
<td>19.21</td>
</tr>
<tr>
<td>Dysphoric</td>
<td>69.33</td>
<td>17.99</td>
</tr>
<tr>
<td>Dys-El</td>
<td>44.63</td>
<td>17.99</td>
</tr>
</tbody>
</table>
The failure of some subjects to hold the dysphoric mood while imagining the future was not expected based on the results of pilot studies, and may have been due to minor methodological changes. Possible explanations will be discussed in Chapter 4. Addition of a third mood group created several problems for planned subsequent analyses. First, it was no longer possible to obtain the reasonably sized groups with equal numbers of subjects necessary for a planned factorial analysis of variance (ANOVA). Rather than discarding data from a large number of subjects, it was decided to substitute one-way ANOVAs which examined each variable of interest across all three mood groups. Use of one-way ANOVAs resulted in the loss of information about interactions among Sex of Subjects, FCQ Change-Factor, and FCQ Categories. While of some interest, this information was not considered crucial to demonstrating the main hypotheses of this study. As an ancillary exploratory analysis, data from Elated and Dysphoric subjects was randomly selected in such a manner as to obtain the largest possible sample size for the planned 2 (Moods) X 2 (Sex of Subjects) X 4 (Categories) X 3 (Change-Factors) factorial ANOVA. The results of these analyses are reported in following sections.

A second problem was that many of the FCQ scores for the Dys-El group were artificially elevated. This occurred because subjects were asked to compare imagined past and
future scenes and to rate the amount of change or degree of improvement. These questions were intended to compare two happy or two sad scenes. When the scene changes from a sad one to a happy one large amounts of reported change and improvement can be expected. Such large FCQ scores render statistically significant results obtained from analyses including these data less meaningful with respect to the experimental hypotheses.

One-Way Analyses of FCQ Scores

The data for each FCQ item was examined using a one-way ANOVA across all three mood groups. The results of these analyses are summarized in Table 2. The one-way ANOVAs for four items (items 3, 5, 6, and 12) indicated statistically significant differences among the means for all three mood groups. These items were ratings of improvement of the image as a whole, change in imagined emotions, improvement in imagined emotions, and improvement in imagined cognitions. Neuman-Keuls tests found that the difference between the means of the Dysphoric and Elated groups reached statistical significance at the .05 level only for improvement of imagined cognitions. Elated subjects rated significantly more improvement in their imagined future cognitions than Dysphoric subjects, and Dys-El subjects rated significantly more improvement in their imagined future cognitions than either of the other two mood groups. In the other three cases, Neuman-Keuls tests among the means
Table 2
Means, Standard Deviations, and Fisher's-Ratios for Future Change
Questionnaire Scores and Related Data for Different Mood Groups

<table>
<thead>
<tr>
<th>Mood Group</th>
<th>Elated (n = 49)</th>
<th>Dysphoric (n = 33)</th>
<th>Dys-El (n = 16)</th>
<th>( F(2, 95) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>( M )</td>
<td>( SD )</td>
<td>( M )</td>
<td>( SD )</td>
</tr>
<tr>
<td>1</td>
<td>57.04</td>
<td>38.91</td>
<td>45.00</td>
<td>36.65</td>
</tr>
<tr>
<td>2</td>
<td>72.94</td>
<td>37.33</td>
<td>69.24</td>
<td>38.41</td>
</tr>
<tr>
<td>3</td>
<td>88.20</td>
<td>24.56</td>
<td>75.64</td>
<td>35.59</td>
</tr>
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<td>4</td>
<td>53.35</td>
<td>37.41</td>
<td>59.91</td>
<td>28.79</td>
</tr>
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<td>5</td>
<td>57.94</td>
<td>37.00</td>
<td>71.24</td>
<td>14.30</td>
</tr>
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<td>6</td>
<td>81.67</td>
<td>21.37</td>
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<td>7</td>
<td>44.69</td>
<td>36.48</td>
<td>39.94</td>
<td>31.87</td>
</tr>
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<td>8</td>
<td>72.94</td>
<td>43.09</td>
<td>83.24</td>
<td>36.01</td>
</tr>
<tr>
<td>9</td>
<td>82.39</td>
<td>26.80</td>
<td>84.97</td>
<td>27.03</td>
</tr>
<tr>
<td>10</td>
<td>51.06</td>
<td>39.06</td>
<td>45.27</td>
<td>14.04</td>
</tr>
<tr>
<td>11</td>
<td>62.39</td>
<td>39.28</td>
<td>66.09</td>
<td>43.20</td>
</tr>
<tr>
<td>12</td>
<td>87.57</td>
<td>22.55</td>
<td>73.77</td>
<td>38.77</td>
</tr>
<tr>
<td>13</td>
<td>94.20</td>
<td>22.35</td>
<td>88.88</td>
<td>25.15</td>
</tr>
<tr>
<td>14</td>
<td>85.10</td>
<td>24.06</td>
<td>80.45</td>
<td>27.10</td>
</tr>
<tr>
<td>Total</td>
<td>812.2</td>
<td>182.8</td>
<td>770.1</td>
<td>242.1</td>
</tr>
<tr>
<td>SD</td>
<td>12.73</td>
<td>5.33</td>
<td>13.25</td>
<td>5.11</td>
</tr>
<tr>
<td>TP</td>
<td>1077</td>
<td>939.8</td>
<td>1634</td>
<td>1980</td>
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<tr>
<td>TTP</td>
<td>26.06</td>
<td>19.19</td>
<td>32.38</td>
<td>23.29</td>
</tr>
</tbody>
</table>

Note. For any row, means with the same subscript differ significantly from each other. Total = Total Change Score. SD = Social Desirability Score. TP = Time Projection. TTP = Transformed Time Projection.

*\( p < .05 \)
found no statistically significant differences between the means of the Elated and Dysphoric groups. Statistical significance for these items was due primarily to the presence of large change scores for the Dys-El group which, as previously noted, were artificially elevated.

Examination of the data showed that seven FCQ items (items 1, 2, 3, 4, 6, 7, and 10) had nonsignificant trends in the predicted direction, and four FCQ items (items 5, 8, 9, and 11) showed nonsignificant trends opposite to the predicted direction. (In this paper trend simply indicates that the measurement is in the predicted direction.) As predicted, Elated subjects rated their imagined future images, emotions, behaviors, and cognitions as more unique than Dysphoric subjects. Elated subjects also endorsed more change in their imagined future images, and more improvement in their imagined future images and feelings. Contrary to predictions, Dysphoric subjects endorsed more change in their imagined feelings, actions, and cognitions, and more improvement in their imagined actions than Elated subjects. Uniqueness ratings for the Dys-El subjects were comparable to the other two mood groups in all four categories. In all cases the change and improvement scores of the Dys-El group were higher than those of the other two mood groups.

The mean scores for image clarity (item 13) and image intensity (item 14) did not differ significantly across the three mood groups.
Transformations of the FCQ Data

Items 1 through 12 of the FCQ were transformed, as planned, using the FCQ image clarity and image intensity items. Each transformation was accomplished by multiplying the item score by the image clarity or image intensity score, and taking the square root of the resulting product. One-way ANOVAs were performed on each transformed item. The results of these analyses are presented in Appendixes L and M.

In general, results obtained using the transformed data closely followed those obtained using the untransformed data. Using the clarity-transformed data, the ANOVAs for items 3, 5, 6, and 12 indicated statistically significant differences among the group means. The means of the Elated and Dysphoric groups differed significantly only for improvement in imagined cognitions (item 12). Elated subjects rated significantly more improvement in imagined cognitions than Dysphoric subjects, and Dys-El subjects rated significantly more improvement in imagined cognitions than either of the other two mood groups. Elated and Dysphoric means for items 1, 2, 3, 4, 6, 7, and 10 showed nonsignificant trends in the predicted direction, while Elated and Dysphoric means for items 5, 8, and 11 show nonsignificant trends opposite to the predicted direction. The Elated and Dysphoric means for item 9 were essentially equal after transformation by image clarity.
Using the intensity-transformed data, the ANOVAs for items 3, 5, 6, and 12 indicated statistically significant differences among the group means. Once again, the Elated and Dysphoric means differed significantly only for item 12, improvement in imagined cognitions. Elated subjects rated significantly more improvement in imagined cognitions than Dysphoric subjects, and Dys-El subjects rated significantly more improvement than either of the other two mood groups. The Elated and Dysphoric means for items 1, 2, 3, 4, 6, 7, and 10 showed nonsignificant trends in the predicted direction, while the Elated and Dysphoric means for items 5 and 8 showed nonsignificant trends opposite to the predicted direction. The Elated and Dysphoric means for items 9 and 11 were essentially equal after transformation by image intensity.

**Total Change Scores**

A Total Change score was computed for each subject by summing items 1 through 12 of the FCQ. A one-way ANOVA was used to compare the Total Change scores across all three mood groups, and the differences among the means were found to be statistically nonsignificant ($F(2, 95) = 2.57, \text{ns};$ see Table 2). The Total Change score for the Elated group was nonsignificantly larger than the total change score for the Dysphoric group, which was in the predicted direction. Similar results were obtained using Total Change scores obtained by summing the clarity-transformed FCQ items (see
Appendix L). A one-way ANOVA across all three mood groups comparing Total Change scores obtained by summing the intensity-transformed data did indicate significant differences among the group means ($F(2, 95) = 3.21, p < .05$; see Appendix M). Neuman-Keuls tests showed that the Elated and Dysphoric group means did not differ significantly, and that significance was largely due to the presence of inflated Dys-El scores.

The correlation of each of the 12 FCQ items with the Total Change score was calculated using data from the Elated and Dysphoric groups only. It was decided not to use the Dys-El data, since the exaggerated change and improvement scores would have resulted in distortion of the correlation coefficients. (However, the interested reader can examine the correlation matrix for the data from all three mood groups in Appendix O). All of the FCQ items were found to correlate significantly and substantially with the Total Change Score, the mean correlation coefficient being .50. The highest correlation ($r = .58$) was obtained for item 5, change in imagined emotions. Examination of the correlation matrix shows that individual Change Factors generally correlate satisfactorily across Categories, correlations typically lying between .4 and .6, and that different Change Factors have satisfactorily low correlations, typically between 0 and .2. The correlation matrix is presented in Appendix N.
Time Projection

In the Experimental Booklet subjects were asked to record a time that they would like to imagine in the future by indicating the appropriate number of days, weeks, months, and/or years. This data was converted into a Time Projection score measured in days using the following formula:

\[
\text{Time Projection} = (\text{Years} \times 365) + (\text{Months} \times 30) + (\text{Weeks} \times 7) + \text{Days}.
\]

A one-way ANOVA was used to compare mean Time Projection scores across all three mood groups. No statistically significant differences among the means were found (\(F(2, 95) = .37, \text{ ns; see Table 2}\)). A planned transformation of the data was performed in an attempt to reduce the variability of the data. The square root of the Time Projection score for each subject was used as a transformed score in another one-way ANOVA across all three mood groups. Once again, the group means did not differ significantly (\(F(2, 95) = 1.05, \text{ ns; see Table 2}\)). Contrary to predictions, the mean Time Projection score for the Dysphoric group was nonsignificantly larger than the mean Time Projection score for the Elated group. The mean Time Projection score for the Dys-El group was approximately equal to the mean Time Projection score for the Elated group.

Social Desirability

Scores on the Crowne-Marlowe Social Desirability scale
for each mood group were compared using a one-way ANOVA. Mean Social Desirability scores did not differ significantly among mood groups ($F(2, 95) = 0.34, ns$; see Table 2). The correlation of the Social Desirability score with each item of the FCQ and with the FCQ Total Change score was calculated using both the data from all three mood groups and the data from the Elated and Dysphoric groups only. As anticipated, no significant correlations were obtained. The correlation coefficients are presented in Appendixes N and O.

**Content of Past and Future Scenes**

Although there was no intention of doing formal content analysis of subjects' imagined scenes, subjects were directed to briefly describe their imagined past and future scenes to ensure that they actually complied with the task of imagining these scenes. An informal survey of their descriptions noted several common themes.

In order to induce a Dysphoric mood, 11 subjects (6 male, 5 female) recalled scenes involving the death of a family member, close friend, or loved pet. Eight subjects (5 male, 3 female) recalled scenes in which they felt especially lonely. Seven subjects (3 male, 4 female) recalled the end of a romantic relationship, and two subjects (1 male, 1 female) recalled family conflicts. Five other subjects recalled various scenes which did not fit into any of these categories. Subjects in the Dys-El
recalled similar scenes of death (2 male, 3 female), loneliness (1 male, 2 female), romantic breakup (2 male, 1 female) and family conflict (1 male). Four of the Dys-El subjects recalled scenes which did not fit into any of these categories.

In order to induce an elated mood 15 subjects (5 male, 10 female) recalled a happy romantic encounter. Twenty subjects (8 male, 12 female) recalled pleasant events or activities involving family or friends. Seven subjects (3 male, 4 female) recalled athletic successes, and four subjects (3 male, 1 female) recalled pleasant scenes from nature or the outdoors. Three subjects recalled scenes which did not fit into any of these categories. Many scenes which were classified in other categories also involved pleasant outdoor activities.

Six subjects (3 male, 3 female) in the Dysphoric group imagined future scenes involving school-related events. Six subjects (1 male, 5 female) imagined scenes involving the death of a loved one. Six subjects (3 male, 3 female) imagined scenes involving family or friends. Six subjects (5 male, 1 female) imagined scenes involving being sad and alone. Three subjects (1 male, 2 female) imagined scenes involving romantic relationships. Subjects in the Dys-El group mostly imagined scenes involving family or friends (4 male, 5 female) or romantic relationships (1 male, 3 female). It should be noted that some subjects in the
Dysphoric group imagined scenes which were potentially as happy as the scenes imagined by subjects in the Dys-El group, but did not report significant mood elevation.

In the Elated group 26 subjects (8 male, 18 female) imagined future scenes involving some sort of romantic relationship. Wedding scenes were especially common. Nine subjects (6 male, 3 female) imagined athletic successes. Seven subjects (3 male, 4 female) imagined school-related events. Four subjects (1 male, 3 female) imagined scenes involving friends or family members. Financial and personal independence were also common themes in the imagined future scenes of the Elated group.

Factorial Analysis of Variance

The loss of 10 female subjects from the Dysphoric group, leaving only 15, determined a maximum $n$ of 15 subjects per cell for a planned $2 \times 2 \times 4 \times 3$ factorial ANOVA. Data from 15 subjects for each of the remaining cells (Dysphoric-Male, Elated-Female, Elated-Male) were randomly selected and the ANOVA was performed. One main effect (Change-Factor) and two interactions (Sex of Subjects $\times$ Category and Category $\times$ Change-Factor) attained statistical significance. (The complete summary table for the factorial ANOVA is presented in Appendix P.)

Change-Factor refers to the three different aspects of change (uniqueness of imagined future scene, amount of
change from past scene, and degree of improvement from past scene) which subjects were asked to rate in various Categories (image as a whole, imagined emotions, imagined behaviors, and imagined cognitions). A highly significant main effect for Change-Factor ($F(2, 336) = 26.9, \ p < .001$) and a significant Change-Factor X Category interaction ($F(6, 336) = 3.51, \ p < .01$) were obtained. The interaction is illustrated in Figure 2. The main effect is accounted for by subjects, regardless of mood, giving largest ratings for degree of improvement, smallest ratings for uniqueness, and intermediate ratings for amount of change. The interaction occurred because subjects imagined more change, but less uniqueness, for future actions than for other Categories. Neuman-Keuls tests indicated that Category means did not differ significantly for any given Change-Factor. No a priori predictions were made with regard to relationships among Categories and Change-Factors, and these findings do not bear significantly on the experimental hypotheses. Some implications of the high ratings for improvement will be discussed in Chapter 4.

A significant Sex of Subjects X Category interaction was also obtained ($F(3, 168) = 3.73, \ p < .05$; see Figure 3). Male subjects tended to give higher ratings of change (across all three Change-Factors) in the Categories of image as a whole, imagined emotions, and imagined cognitions, but lower ratings of change than female subjects in the Category
Figure 2. Interaction between Future Change Questionnaire Categories and Change-Factors
Figure 3. Interaction of sex of subjects with mean Future Change Questionnaire Category scores.

Figure 4. Interaction of mood group with mean Future Change Questionnaire score for male and female subjects.
of imagined behaviors. Neuman-Keuls tests indicated that means for any given Category did not differ significantly between sexes.

Finally, the Mood X Sex of Subjects interaction approached statistical significance ($F(1, 56) = 3.88, p < 0.10$; see Figure 4). In this interaction male subjects rated comparable amounts of change (as measured across all Categories and Change-Factors) in both the Dysphoric and Elated conditions, while female subjects rated amounts of change comparable to male subjects in the Elated condition, but rated less change in the Dysphoric condition. It appears that female subjects responded differentially in the Elated and Dysphoric groups, and in the predicted direction, on an overall measure of imagined change, while male subjects did not respond differentially in different mood groups. This sex-of-subjects effect was not anticipated.

In considering the results of the factorial ANOVA, it should be noted that they are necessarily suspect because of non-random assignment of some subjects and small sample size.
CHAPTER FOUR
DISCUSSION

Review of Hypotheses

It may be helpful to briefly review the basic experimental hypotheses and some related terminology before examining the results of the study and their implications. The intent of this study was to demonstrate that subjects in a dysphoric mood would imagine future scenes that were comparable to and little changed from currently recalled dysphoric past scenes, while subjects in an elated mood would imagine future scenes which differed considerably from elated past scenes. To state it more simply, it was anticipated that elated subjects would imagine more creative, original future scenes than dysphoric subjects.

The Future Change Questionnaire (FCQ) was developed to explore this hypothesis. The FCQ examined three aspects of change and originality: uniqueness, change, and improvement. These aspects are referred to as Change-Factors. Each Change-Factor was applied to four different aspects of the imagined future scene, referred to as Categories, which were: the image as a whole, imagined emotions, imagined behaviors, and imagined cognitions. It was specifically hypothesized that elated subjects would rate more change for all Change-Factors and for all Categories than would dysphoric subjects. It was specifically hypothesized that elated subjects would have a higher Total Change score, that
is a sum of all change scores for all Categories and Change-Factors, than would dysphoric subjects. Finally, it was hypothesized that, if given a choice, elated subjects would choose to imagine scenes at a time more distant in the future (referred to as Time Projection) than would dysphoric subjects.

Review of Experimental Findings

Final analysis of the data was complicated by the fact that 16 of 49 subjects in the Dysphoric group unexpectedly elevated their mood to levels comparable to the Elated group when they imagined the future. These subjects' scores on the FCQ tend to be artificially high due to the nature of the FCQ questions, so their FCQ scores will receive little discussion. Possible reasons for these subjects' failure to hold the dysphoric mood will be discussed, however.

Basic Hypotheses. In general, the hypotheses that Elated subjects would rate their imagined future scenes as more unique, more changed, and more improved than Dysphoric subjects received weak support at best. In only one case did the difference between Elated and Dysphoric subjects' responses to an FCQ item attain statistical significance. Elated subjects did rate significantly more improvement in imagined future cognitons than Dysphoric subjects, and significance was preserved under transformation by image clarity and by image intensity. Seven of the 12 FCQ change items showed weak, nonsignificant trends in the predicted
direction. These were uniqueness, change, and improvement of the image as a whole; uniqueness and improvement of imagined emotions; uniqueness of imagined behaviors; and uniqueness and improvement of imagined cognitions. Four of the FCQ items showed trends opposite to the predicted direction (change in imagined emotions, change in imagined behaviors, improvement in imagined behaviors, and change in imagined cognitions). All trends were essentially unchanged when the data were transformed by multiplication by image clarity or image intensity. Similarly, the hypotheses that Elated subjects would have higher Total Change Scores than Dysphoric subjects received only weak support, in that Elated subjects' Total Change scores were only nonsignificantly higher than those of Dysphoric subjects. This trend was also preserved under transformation by image clarity and image intensity. Finally, the prediction that Dysphoric subjects would choose to imagine scenes less distant in the future than would Elated subjects was not supported. On the average, Dysphoric subjects chose to imagine nonsignificantly more distant future scenes than Elated subjects. This contradicts a finding by Yufit, Benzies, Fonte, and Fawcett (1970) in which clinically depressed subjects chose to imagine less distant future scenes than control subjects.

**Mood Shift in the Dys-El Group.** A major problem in the study was the unanticipated loss of 16 subjects from the
Dysphoric group. These subjects received, and apparently responded to, the Dysphoric mood induction, but when they were asked to imagine a future scene they reported significant increases in mood. The increases occurred in spite of repeated verbal and written instructions to the subjects to hold their mood at the same level throughout the study. Examination of the data indicated that these subjects did not differ significantly from other subjects receiving the Dysphoric mood induction in their responses to the social desirability scale, the Dysphoric mood induction, or in rating the intensity and clarity of their images. It was informally observed that failure to hold the Dysphoric mood occurred regularly throughout the study, and was not confined to one or two groups of subjects receiving the Dysphoric mood induction. (Examination of the post-experimental questionnaire indicated that most subjects, regardless of mood group, reported being able to understand and comply with directions.)

Two pilot studies were conducted prior to collecting this data, and they provide a clue as to why some subjects failed to hold the Dysphoric mood. In the original pilot study no time frame was set for subjects' imagined future scenes. Subjects were simply instructed to choose a time in the future and imagine a scene while holding the Dysphoric or Elated mood. All 10 of the subjects in the Dysphoric group held the Dysphoric mood. However, in order to further
standardize comparisons among subjects imagined future scenes, it was decided to impose a standard time frame. This was arbitrarily set at one year in the future. A second pilot study was conducted using a small number of subjects and the imposed time frame. Of six subjects in the Dysphoric group, one failed to hold the Dysphoric mood while imagining the future. This isolated case was dismissed as an anomaly. While the small numbers of subjects used in both pilot studies make it impossible to reach a definite conclusion, it is plausible that imposition of a one year time frame contributed to subjects' failure to hold the Dysphoric mood.

One possible explanation of why a one year time frame might interfere with holding the Dysphoric mood lies in the nature of the mood induction. In order to induce a dysphoric mood, subjects were asked to recall a sad past experience. The sad feelings from this experience may well have had a duration of less than one year. When subjects were asked to project one year into the future they might simply have extended their images past the phenomenological limits of the dysphoric feelings. This explanation does not, however, account for the elevation of subjects' mood to levels comparable to that of the Elated subjects.

A second explanation of subjects' failure to hold the Dysphoric mood may be that subjects regularly use imagining the future as a way of relieving or escaping dysphoric
feelings. In this context it is worth noting that even some subjects who held the Dysphoric mood chose to imagine positive, happy future scenes. Also recall that of the three Change-Factors, improvement received the highest ratings across both moods and across all four Categories (see Figure 2). There appeared to be a strong tendency for subjects to imagine improved future scenes. It should be noted that imagining the future resulted in small overall increases in mood for both the Dysphoric and the Elated groups. While this explanation does not rely on the imposition of a one year time frame, it can account for the changes which an imposed time frame might cause. If subjects use imagining the future to escape from unhappy feelings in the present, then the more distant time one imagines, the more one removes oneself from the unpleasant emotions. Subjects who are instructed to hold their mood and imagine a nonspecific time in the future may be more likely to choose a time frame which will allow them to comply with the direction to hold the mood. Subjects directed to imagine a specific time may have more difficulty complying with the direction to hold their mood because the time frame may be too far removed from the dysphoric feelings.

The possibility that subjects use imagining the future to relieve negative feelings may also partially explain why subjects in the Dysphoric group chose longer time
projections than subjects in the Elated group. The wording of the instruction to the subjects was, "Choose a time in the future that you would like to imagine." Use of the word "like" may have caused Dysphoric subjects to choose times which were more distant in order to escape from their dysphoric feelings.

A final possible explanation for subjects failure to hold the Dysphoric mood is that some subjects may have assumed that the object of the experiment was to demonstrate that imagining the future raised subjects' mood, and that these subjects were trying to help out the experimenter by confirming that hypothesis. While this explanation cannot be eliminated, it seems unlikely. Subjects were repeatedly told to hold their mood at a given level, and it seems likely that subjects who attempting to be compliant would have followed these instructions.

**Results of the Factorial Analysis of Variance.** The results of the factorial analysis of variance (ANOVA) are necessarily suspect due to the small number of subjects and nonrandom selection of Dysphoric female subjects. The ANOVA was performed as an ancillary, exploratory analysis. No predictions were made regarding the specific levels of Change-Factor, Category, or the interaction between these variables, but the findings involving them will be discussed. Although no differences due to sex of subjects were anticipated, this variable also proved to be of some
Interest.

In general, regardless of mood, subjects rated considerable improvement in their future scenes. (The mean improvement rating for the factorial ANOVA sample was 65% of full scale). Subjects rated a moderate amount of change (54% of full scale) and a smaller amount of uniqueness (37% of full scale). Although Elated subjects' ratings of improvement did not differ significantly from those of Dysphoric subjects, inspection of data from the four improvement items of the FCQ reveals that Elated subjects ratings of improvement were higher for three of the four Categories. Thus, previous findings that depressed subjects make less optimistic predictions about the future than nondepressed subjects (e.g. Alloy & Abramson, 1979) are not necessarily contradicted. On the other hand, induced dysphoria failed to produce the anticipated result, which was that Dysphoric subjects would imagine future scenes which showed little or no improvement or change. I suspect that this occurred because the relatively mild dysphoric state produced by the mood induction failed to overcome subjects' tendencies to imagine positive futures.

Both the Change-Factor X Category and the Sex of Subjects X Category interactions involved subjects rating change in the Category of imagined future behaviors differently from other Categories. Subjects tended to rate imagined future behaviors as showing more change, but less...
uniqueness, than imagined future emotions, cognitions, or than the imagined future scene as a whole. Furthermore, female subjects tended to rate imagined behaviors as showing more change across Change-Factors than the other three Categories, while male subjects tended to rate imagined future behaviors as showing less change than the other three Categories (see Figure 3). One possible explanation for the different ratings of imagined future behaviors is that imagined future behavior is less mood dependent than cognitions or than the image as a whole. (It seems reasonable that imagined future emotions are likely to be highly mood-dependent.) Imagined future behavior appears to be more mood-dependent for males than for females.

However, the above explanation may have to be modified given the near-significant Mood X Sex of Subjects interaction. This interaction suggests that male subjects do not rate future scenes differently in different mood states, while female subjects do. The interaction was unexpected, and may represent a tendency for male subjects to deny negative emotions or to be less willing to deal with negative feelings than female subjects. The Mood X Sex of Subjects X Category interaction may have failed to reach statistical significance due to large response variability and small number of subjects. Future studies will need to examine the sex of subjects variable more carefully.
Conclusion

Although this study failed to find significant support for the hypothesis that Dysphoric subjects imagine future scenes that resemble the present more than the future scenes imagined by Elated subjects, the study did demonstrate the potential importance of future imagery as a mood elevator. Some Dysphoric subjects spontaneously and significantly elevated their moods by imagining positive future scenes. Other Dysphoric subjects who imagined positive future scenes did not report significant mood elevation, but might have been able to raise their mood had they not been complying with directions to maintain it at a constant level.

Imagining the future produced slight increases in mood ratings for both the Dysphoric and Elated mood groups. Moreover, improvement from the past scene was the highest rated Change-Factor for both mood groups. While the increase in mood for the Dysphoric group might be explained as a regression toward a more neutral mood state, this is not the case for the Elated mood group. Lazarus (1968) has reported similar increases in mood induced by imagining positive future scenes in the treatment of individual cases of acute depression. A fruitful line of research might be to compare the use of positive future imagery, positive present imagery, and positive past imagery as treatments for dysphoria. It might also be interesting to determine to what degree individuals spontaneously use positive future
imagery to raise their mood, especially in light of current research on cognitive style as a risk factor in depression (e.g. Peterson & Seligman, 1984).

It has been adequately documented that depressed individuals have negative views of the future (e.g. Beck, 1967; Fibel & Hale, 1978; Layne, Lefton, Walters, & Merry, 1983; Linden, Hautzinger, & Hoffman, 1983). The intent of this study was to demonstrate that not only are depressives' expectations of the future negative, but that they strongly resemble depressives' perceptions of the present. Due to a variety of methodological problems, it was not possible to make such a demonstration or to reject the original hypothesis. I think that the methodological difficulties precluded an adequate test of the experimental hypotheses, and that further research is merited. Future research in this area could proceed along at least three lines. First, the present study could be repeated without the time constraint on future imagery. This study would also be useful in determining whether or not the time constraint played a role in subjects' failure to hold the Dysphoric mood. Second, correlational studies could examine the relationship between perception of future change and various measures of depression and hopelessness. Finally, perception of future change could be assessed in depressed and nondepressed psychiatric populations to determine if it is useful in differentiating between these two groups.
References


APPENDIX A
EXPERIMENTAL BOOKLET
(EXPERIMENTER'S COPY)

(Reduced from original size for binding)
AGE______________________
SEX______________________
YEAR IN COLLEGE_________

*** After subjects have completed this page say "Please turn to the second page in your booklet and follow along with me." Then read next page.***
Emotions and Imagery Study

This study is designed to find out how our moods relate to our imaginations. We will be asking you to relive situations in which you felt strong emotions. You will be asked to close your eyes and to imagine and elaborate the scenes in great detail. Then you will be asked to imagine another scene in the future. After imagining this scene you will be asked to rate the strength of your emotions and to answer some questions about what you imagined.

Some of the instructions you hear will be tape recorded. This is to help us maintain standard conditions across all our experimental groups. Please pay attention to these instructions just as you would pay attention to a live experimenter. Also, be sure to follow the directions at the bottom of each page. In order to gain maximum personal benefit from this study, it will be important for you to allow yourself to feel just as you did in the original situation from the past. We hope you will find this study an experience which helps you to know yourself just a bit better. Although we will ask you to experience some powerful feelings, every effort will be made to ensure that you feel relaxed and good at the conclusion of the experiment. Any information you give us will be kept confidential. There is no deception involved in this study.

PLEASE TURN PAGE

Say "please answer the questions on the next 3 pages."
In order to help us to understand you a little better, please answer the following questions.

*** Crowne-Marlowe Social Desirability Scale ***

T F 1. Before voting I thoroughly investigate the qualifications of all of the candidates.

T F 2. I never hesitate to go out of my way to help someone in trouble.

T F 3. It is sometimes hard for me to go on with my work if I am not encouraged.

T F 4. I have never intensely disliked anyone.

T F 5. On occasions I have had doubts about my ability to succeed in life.

T F 6. I sometimes feel resentful when I don't get my way.

T F 7. I am always careful about my manner of dress.

T F 8. My table manners at home are as good as when I eat out in a restaurant.

T F 9. If I could get into a movie without paying and be sure I was not seen I would probably do it.

T F 10. On a few occasions, I have given up something because I thought too little of my ability.

T F 11. I like to gossip at times.

T F 12. There have been times when I felt like rebelling against people in authority even though I knew they were right.

T F 13. No matter who I'm talking to, I'm always a good listener.

TURN PAGE AND CONTINUE
T F 14. I can remember "playing sick" to get out of something.
T F 15. There have been occasions when I have taken advantage of someone.
T F 16. I'm always willing to admit it when I make a mistake.
T F 17. I always try to practice what I preach.
T F 18. I don't find it particularly difficult to get along with loudmouthed, obnoxious people.
T F 19. I sometimes try to get even rather than forgive and forget.
T F 20. When I don't know something I don't mind at all admitting it.
T F 21. I am always courteous, even to people who are disagreeable.
T F 22. At times I have really insisted on having things my way.
T F 23. There have been occasions when I felt like smashing things.
T F 24. I would never think of letting someone else be punished for my wrong-doings.
T F 25. I never resented being asked to return a favor.
T F 26. I have never been irked when people expressed ideas very different from my own.
T F 27. I never make a long trip without checking the safety of my car.

TURN PAGE AND CONTINUE
T F 28. There have been times when I was quite jealous of
the good fortune of others.

T F 29. I have almost never felt the urge to tell someone
off.

T F 30. I am sometimes irritated by people who ask favors
of me.

T F 31. I have never felt that I was punished without
cause.

T F 32. I sometimes think that when people have a
misfortune they only got what they deserved.

T F 33. I have never deliberately said something that
hurt someone's feelings.

CONTINUE TO HOLD YOUR MOOD.
DO NOT TURN PAGE UNTIL ASKED TO DO SO.
Play relaxation instructions and mood induction now. Time to relax

In order to help you use your imagination more clearly, I am going to help you to relax. Assume the most comfortable position you can. Close your eyes, relax, and listen to my voice...

AFTER YOU OPEN YOUR EYES AGAIN, PLEASE TURN THE PAGE
Carefully mark on the scale below how you feel right now. Continue to hold your mood at this level to the best of your ability.

*** Mood Assessment Scale ***

<table>
<thead>
<tr>
<th>the most sadness you can imagine</th>
<th>no sadness</th>
<th>the most happiness you can imagine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or happiness</td>
</tr>
</tbody>
</table>

Write down two or three sentences describing the scene that you imagined to change your mood.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Please hold your mood exactly where it is now. If at any time you need to, review what you have written above and re-imagine the scene to help you hold your mood. Holding this mood may be difficult, but it is important that you do hold your mood as best you can.

PLEASE TURN THE PAGE
As quickly as you can, choose a time in your future that you would like to imagine. This may be days, weeks, months, or years into the future. Please indicate when this time will be by placing a number in the appropriate space (e.g. 25 years).

*** Time Projection Item ***

____ Days _____ Weeks _____ Months _____ Years

STOP HERE

CONTINUE TO HOLD YOUR MOOD

YOU MAY WISH TO RE-IMAGINE THE SCENE YOU USED TO CHANGE YOUR MOOD AT THIS TIME. DO NOT TURN THE PAGE UNTIL ASKED TO DO SO.

***When everyone has finished, "Please turn to the next page in your booklet and follow along with me."
You will now be asked to imagine a time in your future. We will help you to do this more clearly. It will help us if everyone imagines something at about the same time in the future, so we have arbitrarily chosen one year from now. We will also ask you to answer some questions about what you imagine. These questions may seem repetitious, but please pay attention to each and every question and try to answer all of them as honestly and correctly as possible. You need not spend very much time on any one question, just mark the best answer you can. We need your best effort for this experiment to be a success. Also, when we ask you to hold your mood, please do this to the best of your ability.

***Play imagery instructions here.

Future Scene

As you continue to hold your mood, I want you to imagine what your future will be like one year from now. What you imagine can be as realistic or as unlikely as you choose, but be sure to continue to hold your mood. In order to help you hold your mood, you may wish to re-imagine the scene from the past that you used to help change your mood. For some of you it may be helpful to structure your imagined future scene around some object or event from the past scene. Others may prefer to imagine something completely different. Do whatever works best for you. Holding you mood while imagining the future may be difficult, but it is important that you do hold your mood to the best of your ability. What you imagine does not have to be
realistic, but it should take place about one year into the future. Take a moment to make your mood intense by re-imagining your past scene. Now close your eyes and listen to my voice.

AFTER YOU OPEN YOUR EYES AGAIN, PLEASE TURN THE PAGE AND ANSWER THE FOLLOWING QUESTIONS.
As you continue to maintain your mood, hold the scene in your imagination as clearly as you can. Write down two or three short sentences describing what you are imagining in the space provided.

Describe your image here

Carefully mark on the scale below how you feel right now.

<table>
<thead>
<tr>
<th>the most sadness you can imagine</th>
<th>0</th>
<th>the most happiness you can imagine</th>
</tr>
</thead>
<tbody>
<tr>
<td>no sadness or happiness</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONTINUE TO HOLD YOUR MOOD

WHEN YOU HAVE COMPLETED THIS PAGE, PLEASE TURN TO THE NEXT ONE AND CONTINUE.
*** Future Change Questionnaire ***

Please answer each question by carefully marking the scale below it at the point that you feel is correct for you. The following questions refer to everything that you are imagining about the future, including feelings, actions, and thoughts.

1. How unique or unusual is the scene you are imagining now?

| totally unique | totally ordinary |

2. Compared to the scene that you imagined to change your mood, how much is what you are imagining different from the way your life was going at that time?

| identical | very much different |

3. Compared to the scene that you imagined to change your mood, how much is what you are imagining better or worse than your life was then?

| very much worse | very much better |

HOLD YOUR MOOD, TURN THE PAGE, AND CONTINUE
The following questions refer to how emotions you imagined yourself experiencing, feelings like joy, sorrow, disappointment, or satisfaction.

4. How unusual or unique is what you imagine yourself feeling in your future scene?

| ____________________________________________________________________________ |
| totally ordinary | totally unique |

5. Compared to the scene that you imagined to change your mood, how much is what you are imagining yourself feeling the same as the way you felt at that time?

| ____________________________________________________________________________ |
| totally different | identical |

6. Compared to the scene that you imagined to change your mood, how much better or worse is what you are imagining yourself feeling than the way you felt then?

| ____________________________________________________________________________ |
| very much better | very much worse |

HOLD YOUR MOOD, TURN THE PAGE, AND CONTINUE
The following questions refer to your actions in the scene you are imagining, whatever it is that you imagine yourself doing or however you are acting.

7. How unusual or unique is what you are imagining yourself doing in your future scene?

<table>
<thead>
<tr>
<th>totally ordinary</th>
<th>totally unique</th>
</tr>
</thead>
</table>

8. Compared to the scene that you imagined to change your mood, how much is what you are imagining yourself doing the same as what you were doing at that time?

<table>
<thead>
<tr>
<th>just the same</th>
<th>totally different</th>
</tr>
</thead>
</table>

9. Compared to the scene that you imagined to change your mood, how much is what you are imagining yourself doing better or worse than what you were doing at that time? (Better or worse refers to things like more or less successful or competent.)

| very much worse | very much better |

HOLD YOUR MOOD, TURN THE PAGE, AND CONTINUE
The following questions refer to things you might find yourself thinking if you were in your imagined scene.

10. How unusual or unique is what you might be thinking in your imagined future scene?

______________________________

totally unique
totally ordinary

11. Compared to the scene that you imagined to change your mood, how much is what you might be thinking in your imagined future scene like something you would have been thinking at that past time?

______________________________

very much like
very much different

12. Compared to the scene that you imagined to change your mood, how much is what you might be thinking in your imagined future scene better or worse than what you were thinking at that time in the past?

______________________________

very much better
very much worse

The following questions refer to your image as a whole.

13. How clearly were you able to experience your image?

______________________________

not clearly at all
just like real life

HOLD YOUR MOOD, TURN THE PAGE, AND CONTINUE
14. How intense were the feelings you experienced in your image?

| hardly felt anything | extremely intense |

Please briefly describe a few of the important similarities (if any) between your future image and the scene you imagined to change your mood.


Please briefly describe a few of the important differences (if any) between your future scene and the scene you imagined to change your mood.


When you have completed the questions, feel free to stretch and relax quietly.

PLEASE DO NOT TURN PAGE UNTIL ASKED TO DO SO

Play mood adjustments when everyone has finished.

YOU DO NOT NEED TO HOLD YOUR MOOD ANY LONGER
In order to help us with future research, please answer the following questions. Where appropriate, please circle the number which best represents how you feel.

1. I was able to understand the directions as they were given.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>strongly disagree</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

2. Please describe which directions you found hardest to follow.

3. I was able to do what was asked most or all of the time.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>strongly agree</td>
<td>strongly disagree</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Please describe which parts of the experiment you were unable to do as asked.

5. The relaxation instructions helped me to relax.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
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<tbody>
<tr>
<td>strongly agree</td>
<td>strongly disagree</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. What kind of instructions might have worked better?

7. When you were asked to remember a time in your past and change your mood, how did it make you feel?
8. Which of the questions or statements helped you the most to change your mood?

9. What kind of statements or questions might have helped more?

10. I was able to hold the mood at the same level while I imagined the future.

11. I was able to hold the mood at the same level while I answered the questions.

12. I was able to understand the questions.

13. Which questions were hardest to understand?

14. I feel at least as good now as I did at the beginning of the experiment.
You have now completed your part of the study. Thank you very much for your cooperation. Since this is an ongoing project we would appreciate it if you would not discuss the details of what went on here. If you do not feel at least as happy and relaxed as you did when you came in you may have done an especially good job of imagining. Please remain here until you feel comfortable enough to leave. We will be happy to discuss your experience with you, or to just sit quietly until you are ready to leave. Otherwise, you may now go. Leave your booklet with the experimenter on the way out. If you would like to receive a written summary of the purpose and results of this experiment, please leave your name and address with the experimenter.
APPENDIX B
CROWNE-HARLOWE SOCIAL DESIRABILITY SCALE
T F 1. Before voting I thoroughly investigate the qualifications of all of the candidates.

T F 2. I never hesitate to go out of my way to help someone in trouble.

T F 3. It is sometimes hard for me to go on with my work if I am not encouraged.

T F 4. I have never intensely disliked anyone.

T F 5. On occasions I have had doubts about my ability to succeed in life.

T F 6. I sometimes feel resentful when I don't get my way.

T F 7. I am always careful about my manner of dress.

T F 8. My table manners at home are as good as when I eat out in a restaurant.

T F 9. If I could get into a movie without paying and be sure I was not seen I would probably do it.

T F 10. On a few occasions, I have given up something because I thought too little of my ability.

T F 11. I like to gossip at times.

T F 12. There have been times when I felt like rebelling against people in authority even though I knew they were right.

T F 13. No matter who I'm talking to, I'm always a good listener.

T F 14. I can remember "playing sick" to get out of something.

T F 15. There have been occasions when I have taken advantage of someone.
16. I'm always willing to admit it when I make a mistake.
17. I always try to practice what I preach.
18. I don't find it particularly difficult to get along with loudmouthed, obnoxious people.
19. I sometimes try to get even rather than forgive and forget.
20. When I don't know something I don't mind at all admitting it.
21. I am always courteous, even to people who are disagreeable.
22. At times I have really insisted on having things my way.
23. There have been occasions when I felt like smashing things.
24. I would never think of letting someone else be punished for my wrong-doings.
25. I never resented being asked to return a favor.
26. I have never been irked when people expressed ideas very different from my own.
27. I never make a long trip without checking the safety of my car.
28. There have been times when I was quite jealous of the good fortune of others.
29. I have almost never felt the urge to tell someone off.
30. I am sometimes irritated by people who ask favors of me.
T F 31. I have never felt that I was punished without cause.

T F 32. I sometimes think that when people have a misfortune they only got what they deserved.

T F 33. I have never deliberately said something that hurt someone's feelings.
APPENDIX C

FUTURE CHANGE QUESTIONNAIRE

Please answer each question by carefully marking the scale below it at the point that you feel is correct for you. The following questions refer to everything that you are imaging about the future, including feelings, actions, and thoughts.

1. How unique or unusual is the scene you are imaging now?

   | totally unique | totally ordinary |

2. Compared to the scene that you imagined to change your mood, how much is what you are imaging different from the way your life was going at that time?

   | identical | very much different |

3. Compared to the scene that you imagined to change your mood, how much is what you are imaging better or worse than your life was then?

   | very much worse | very much better |
The following questions refer to emotions you imagined yourself experiencing, feelings like joy, sorrow, disappointment, or satisfaction.

4. How unusual or unique is what you imagine yourself feeling in your future scene?

| ________________ | ________________ |
| totally ordinary | totally unique |

5. Compared to the scene that you imagined to change your mood, how much is what you are imagining yourself feeling the same as the way you felt at that time?

| ________________ | ________________ |
| totally identical | different |

6. Compared to the scene that you imagined to change your mood, how much better or worse is what you are imagining yourself feeling than the way you felt then?

| ________________ | ________________ |
| very much better | very much worse |
The following questions refer to your actions in the scene you are imagining, whatever it is that you imagine yourself doing or however you are acting.

7. How unusual or unique is what you are imagining yourself doing in your future scene?

| totally ordinary | totally unique |

8. Compared to the scene that you imagined to change your mood, how much is what you are imagining yourself doing the same as what you were doing at that time?

| just the same | totally different |

9. Compared to the scene that you imagined to change your mood, how much is what you are imagining yourself doing better or worse than what you were doing at that time? (Better or worse refers to things like more or less successful or competent.)

| very much worse | very much better |

The following questions refer to things you might find yourself thinking if you were in your imagined scene.

10. How unusual or unique is what you might be thinking in your imagined future scene?

| totally unique | totally ordinary |
11. Compared to the scene that you imagined to change your mood, how much is what you might be thinking in your imagined future scene like something you would have been thinking at that past time?

<table>
<thead>
<tr>
<th>very much</th>
<th>very much</th>
</tr>
</thead>
</table>

12. Compared to the scene that you imagined to change your mood, how much is what you might be thinking in your imagined future scene better or worse than what you were thinking at that time in the past?

<table>
<thead>
<tr>
<th>very much</th>
<th>very much</th>
</tr>
</thead>
</table>

13. How clearly were you able to experience your image?

<table>
<thead>
<tr>
<th>not clearly</th>
<th>just like</th>
</tr>
</thead>
<tbody>
<tr>
<td>at all</td>
<td>real life</td>
</tr>
</tbody>
</table>

14. How intense were the feelings you experienced in your image?

<table>
<thead>
<tr>
<th>hardly felt</th>
<th>extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>anything</td>
<td>intense</td>
</tr>
</tbody>
</table>
"In order to let you use your imagination more clearly, I am going to help you to relax. Assume the most comfortable position you can. Close your eyes, relax, and listen to my voice..."

Imagine yourself floating on a soft cloud and feeling very comfortable.

You are beginning to feel calm and peaceful.

You are floating smoothly.

You feel calm and safe.

Slowly breathe in a deep, refreshing breath and hold it in for a few seconds...

(Leave 7 to 10 seconds between inhalations and exhalations.)

Exhale slowly...

We will do this breathing exercise ten more times.

One - breathe in...

Breathe out slowly...

Feel the muscles of your face relax and go slack.

Two - breathe in deeply...

Try to breathe in such a way that your abdomen fills with air but your chest moves only a little.

As you exhale from the abdomen, feel the muscles of your neck and shoulders relax.

Three - breathe in slowly...
As you exhale, feel the muscles in your arms loosen and relax.

Four - breathe in...

You are becoming more and more relaxed.

As you exhale, feel the muscles in your chest and abdomen loosen.

Five - breathe in...

Exhale slowly and feel the muscles in your legs relax.

Six - breathe in another slow, refreshing breath...

As you exhale, feel your whole body becoming limp.

Seven - breath in...

As you exhale, feel your worries flowing out of you with your breath.

You are now floating easily and calmly.

Eight - Breathe in deeply...

Exhale slowly.

You are feeling very relaxed, all your muscle tension is gone.

Nine - Breathe in...

Exhale slowly.

You feel relaxed, calm, safe.

Ten - Breathe in...

Exhale slowly, peacefully.

Continue to breathe slowly and deeply."
APPENDIX E

DYSPHORIC MOOD INDUCTION

"Now, as you continue to breathe slowly and deeply, I am going to help you to change your mood. Think of a time in your life when you felt very sad and depressed. Try to remember particular a time when you felt very sad and depressed. I will pause now for you to think of a specific time. (Pause at least 90 seconds for response.) Now I am going to help you relive that experience, and re-experience the feeling of sadness. You won't have to stay sad for very long, and later I'll help you to raise your mood.

Some of the things I say might not be exactly what you experienced in the situation, but that won't bother you or break your concentration in remembering the situation and the feelings you experienced. You will find that you can respond to the things I say that were true in the situation, and what is not true will not change your mood. You will be fully able to experience the sadness or depression that you felt at that time. If, as you become sad, you think of a situation in which you felt sadder or more depressed and you want to use that situation instead, go ahead and do that."

"Begin to visualize your scene now...
Look around you, what do you see?
Look closely at the scene and take in all the details.
What's happening?
What's happening to you?"
Start feeling how it is to be there.
Is there anyone with you?
What are they doing?
Is there something they've done to make you feel as you do?
Is there something you see in them that is hurting you and making you sad?
As you look around and begin to feel how it is to be there, just let those feelings begin to grow.
Let them grow stronger, just like they were at the time.
As I continue to talk you'll find yourself feeling more sad and unhappy.
You can feel the tension in your body.
You might be feeling anxious and uptight, and not be sure why.
Perhaps you're struggling to keep back tears.
The feelings are getting stronger and stronger now.
The sadness feels as if it is all through your body now.
As you're there in that situation, the sadness is becoming deeper and deeper.
Your body feels edgy, but you feel so tired too, dull and tired.
You feel as if you've got no energy.
You don't feel like doing anything.
You can feel the hollowness of everything.
You feel sadder and sadder, more and more depressed."
"Now I want you to adjust your mood so that it is
intense, and you feel very sad and depressed, but it is not unbearable. Adjust your mood so that it is intense, but not unbearable, so that you still feel in control but the sad mood is intense. You may have to raise or lower your mood to make it intense, but not unbearable. I am going to ask you to feel intense and sad again. Try to keep the feeling exactly as it is now."
APPENDIX F

ELATED MOOD INDUCTION

"Now, as you continue to breathe slowly and deeply, I am going to help you to change your mood. Think of a time in your life when you felt very happy and joyful. Try to remember a particular time when you felt very happy and joyful. I will pause now for you to think of a specific time. (Pause at least 90 seconds for response.) Now I am going to help you relive that experience, and re-experience the feeling of happiness. You can stay happy if you want to, or later I'll help you to change your mood to something more relaxed.

Some of the things I say might not be exactly what you experienced in the situation, but that won't bother you or break your concentration in remembering the situation and the feelings you experienced. You will find that you can respond to the things I say that were true in the situation, and what is not true will not change your mood. You will be fully able to experience the happiness or joy that you felt at that time. If, as you become happy, you think of a situation in which you felt happier or more joyful and you want to use that situation instead, go ahead and do that."

"Begin to visualize your scene now...

Look around you, what do you see?

Look closely at the scene and take in all the details.

What's happening?"
What's happening to you?

Start feeling how it is to be there.

Is there anyone with you?

What are they doing?

Is there something they've done to make you feel as you do?

Is there something you see in them that is cheering you and making you happy?

As you look around and begin to feel how it is to be there, just let those feelings begin to grow.

Let them grow stronger, just like they were at the time.

Let the happy feelings spread through your body.

As I continue to talk you'll find yourself feeling more warm and joyful.

Perhaps you can feel a tingling in your body.

You might be feeling light and excited, but might not be sure why.

Perhaps you're struggling to keep back a chuckle.

The feelings are getting stronger and stronger now, just let them grow.

The happiness feels as if it is all through your body now.

As you're there in that situation, the happiness is becoming stronger and stronger.

Your body feels light. You might feel excited and energetic.

You feel as if you're full of energy.

You feel light, excited, like you could do anything.
You can feel the excitement of everything.
Let the feelings grow stronger and stronger.
You feel happier and happier, more and more joyful."

"Now I want you to adjust your mood so that it is intense, and you feel very happy and joyful, but it is not uncontrollable. Adjust your mood so that it is intense, but not out of control, so that you still feel in control but the happy mood is intense. You may have to raise or lower your mood to make it intense, but again not out of control. I am going to ask you to feel intense and happy again. Try to keep the feelings just as they are now."
"As you continue to hold your mood, I want you to imagine what your future will be like one year from now. What you imagine can be as realistic or as unlikely as you choose, but be sure to continue to hold your mood. In order to help you hold your mood, you may wish to re-imagine the scene from the past that you used to help change your mood. For some of you it may be helpful to structure your imagined future scene around some object or event from the past scene. Others may prefer to imagine something completely different. Do whatever works best for you. Holding your mood while imagining the future may be difficult, but it is important that you do hold your mood to the best of your ability. What you imagine does not have to be realistic, but it should take place about one year into the future. Take a moment to make your mood intense by re-imagining your past scene. Now close your eyes and listen to my voice. "Continue to hold your sad (happy) mood. I might say some things that are not exactly like what you are imagining, but that won't bother you or change your mood. Let the sad (happy) feelings be intense. Try to keep your feelings just as sad (happy) as they were earlier. Now imagine a scene about one year into your future."
Watch yourself enter the scene.

Look around you, what do you see?

Look closely, notice all the details.

Be aware of colors, textures, shapes.

As you continue to hold your mood, pay attention to sounds and sensations.

Feel any textures or touches.

Feel what your body is doing.

What is happening in the scene?

Are you alone or are there others with you?

Imagine the whole scene as clearly as you can.

"Now open your eyes. As you continue to maintain your mood, hold the future scene in your imagination as clearly as you can. Write down two or three short sentences describing what you are imagining in the space provided."
APPENDIX A

MOOD ASSESSMENT SCALE

Carefully mark on the scale below how you feel right now. Continue to hold your mood at this level to the best of your ability.

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>the most sadness you can imagine</td>
<td>no sadness or happiness</td>
<td>the most happiness you can imagine</td>
</tr>
</tbody>
</table>

(Reduced from original size for binding)
APPENDIX I

PSYCHOLOGICAL SCREENING
Please answer the following questions. This information will be kept strictly confidential. DO NOT PUT YOUR NAME ON THIS PAGE.

1) Are you presently receiving psychological counseling or any other psychological or psychiatric treatment?
   Yes 
   No 

2) Are you receiving medication for any psychological or psychiatric reason?
   Yes 
   No 

3) Have you ever been hospitalized for any psychological or psychiatric treatment?
   Yes 
   No 

Some of you in this study will be asked to remember experiences from your life which have strong feelings associated with them. If at any time you find these so unpleasant as to be unbearable, you may leave the experiment. Please see the experimenter on the way out.

READ THIS ONLY IF YOU HAVE ANSWERED 'YES' TO ANY OF THE ABOVE

If you have answered yes to any of the above questions you may be excused from the experiment at this time. Just tell the experimenter that you will be unable to stay and there will be no questions asked. We want to thank you for coming even if you are not able to participate.
APPENDIX J

POST-EXPERIMENTAL MOOD ELEVATION

Please close your eyes now and relax. I am going to help you to raise your mood back up. Let's go someplace in your world that is filled with fun and excitement. Maybe it's some favorite place you have been, or some special experience you have had, or perhaps it's someplace you can cheerfully imagine. We'll wait 15 or 20 seconds until each of you finds a place for enjoyment.

Now that you have found some exciting, cheerful scene, look around you and see and imagine those things, people, thoughts, and experiences that could fill you with pleasant, joyful feelings. Keep looking, and allow yourself to experience the pleasure of these feelings as they begin to build.

What do you see as you look around you?
Look closely at the scene -- take in all the details.
What joyful or exciting things are happening?
Allow cheerful feelings to begin to grow within you?
Is there anyone there with you in your scene?
What are they doing that is helping you to feel excited, happy?
Is there something about them that makes you feel especially good?
As you continue to look around you the cheerful feelings are growing.
Let them grow stronger.
As I continue to talk, you will find yourself feeling more and more joyful.
You can feel a slight tingling in your body. Perhaps you are feeling light or excited.
Pay attention to those feelings and let them grow stronger. As you surrender to the pleasure of these feelings, the feelings will get stronger.
You feel happiness all through your body.
As you're there in that situation the happiness is becoming stronger and stronger.
Your body feels light, but you might feel excited, energetic.
You feel as if you're full of energy.
You feel as if you could do almost anything.
Let yourself feel happier and happier, more and more joyful. We will wait a short time as you continue to experience these good feelings. Let them reach whatever level is most comfortable for you.
APPENDIX K

POST-EXPERIMENTAL RELAXATION

Now, for those of you who are not comfortable with the mood that you are in, I am going to do one more thing to help you to adjust your mood. You can change your mood if you want to. If you like the mood you are in, just sit back and relax. If you want to change your mood, close your eyes and concentrate on my voice. Imagine someplace where you can feel peaceful and safe -- perhaps a quiet beach or a mountain lake. (Pause a few seconds.) Someplace warm and friendly. Look around you and imagine this pleasant place. You may be there alone, or perhaps with friends or special people. Perhaps the sun is shining, and your body is warmed and soothed by the sunshine. Your worries and cares begin to shrink away. You begin to feel relaxed, refreshed. Look around this special place -- experience and enjoy all the details. Perhaps there are soothing sounds or pleasant scents. Perhaps there is something interesting to watch. You feel a warm, relaxed glow spread all through your body. You feel no tension or tiredness. You breathe easily, deeply, slowly. Perhaps you have a pleasant sensation of drowsiness or
drifting.
Concentrate on all of these soothing experiences.
Let yourself drift or float through warm, peaceful feelings.
All of your worries are far away and fading.
Soon you will be able to let whatever pleasant feelings you wish to experience spread through your body.
Feel the pleasant feelings beginning to grow.
Feel them spreading, getting stronger.
Your whole body is able to enjoy these pleasant feelings.
Concentrate on these pleasant feelings as they fill your consciousness.
Let yourself experience them as much and as strongly as you want to.
Take a few minutes to enjoy these feelings, and let them grow.
When you are ready, open your eyes and notice how refreshed you feel.
Appendix L

Means, Standard Deviations, and Fisher's-Ratios for Future Change Questionnaire (PCQ) Scores and Total Change Score Transformed by Image Clarity

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<thead>
<tr>
<th>Item</th>
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<th>Dys-BI (n = 16)</th>
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<td>77.14</td>
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Note. For any row, means with the same subscript differ significantly from each other. Items 1 through 12 refer to PCQ items 1 through 12. Total = Total Change Score.

* p < .05
Appendix M

Means, Standard Deviations, and Fisher's-Ratios for Future Change Questionnaire (FCQ) Scores and Total Change Score Transformed by Image Intensity

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Note. For any row, means with the same subscript differ significantly from each other. Items 1 through 12 refer to FCQ items 1 through 12. Total = Total Change Score.

* P < .05
Appendix N. Univariate Correlation Coefficients for Future Change Questionnaire (FCQ) Scores and Related Data Calculated Using Data From Dysphoric and Elated Mood Groups

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Note. Items 1 through 14 refer to FCQ items 1 through 14. Total = Total Change Score. SD = Social Desirability Score.
Appendix 0. Univariate Correlation Coefficients for Future Change Questionnaire (FCQ) Scores and Related Data Calculated Using Data from Dysphoric, Elated, and Dys-El Mood Groups

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**Note.** Total = Total Change Score. Su = Social Desirability Score. Items 1 through 14 refer to FCQ items 1 through 14.
Appendix P

Summary Table for Factorial Analysis of Variance Calculated Using Selected Data from Elated and Dysphoric Mood Groups

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Note. A = Mood, B = Sex of Subjects, J = Category, K = Change-Factor.

* P < .10
** P < .05
*** P < .01

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